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Nonhuman Sentience and the SF Other:
A Comparative Study of Chinese and Anglophone Science Fiction

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Abstract

This thesis explores the binary of the normative and the Other in science fiction through comparative close readings of Chinese and Anglophone science fiction that centre on nonhuman sentience, as well as "Chinese-style science fiction" published in Chinese and Anglophone online science fiction magazines. The first four chapters compare nonhuman sentience including extraterrestrial intelligence, transhuman beings, and artificial intelligence in Chinese and Anglophone works, and illuminate the paradoxical and transmutative relationship between the human and the nonhuman, where the nonhuman is simultaneously a reflection of and an antithesis to the human. This relationship serves as a mechanism for the human and the nonhuman breaking out of their binary containments to fuse and metamorphose into each other. The fifth and final chapter discusses the binary of Chinese SF and Anglophone SF that underlies previous chapters and its impact on the development of Chinese SF through examining the concept of "Chinese-style SF." The chapter arrives at the conclusion that a dualistic conception of Chinese SF as an exotic Other to the norm of Western SF generates the reductive and essentialised category of "Chinese-style SF," which tethers its identity to an Oriental difference from Western hegemony and does not truly amount to an otherness.

The first chapter of this thesis compares extraterrestrial intelligence in Liu Cixin's trilogy and Arthur C. Clarke's novels, looking at how Clarke's and Liu's aliens transcend human limitations and merge with the human, and how such processes are shaped by their respective historical and literary contexts. The second chapter supplements the previous one with analysis of aliens in Liu Cixin's short stories, investigating how binaries of self and Other are dissolved through the alien and how coexistence of binary oppositions result in diversity and relativism. The third chapter juxtaposes transhuman monsters in Han Song's and Jeff VanderMeer's novels, and considers how Han and VanderMeer use the uncanny effect to depict transhuman monsters that allude to societal issues and subvert empirical reality, as well as create an unknowable Other that cannot be reduced to the uncanny. The fourth chapter contrasts artificial intelligence from Hao Jingfang's short story collection with that in Isaac Asimov's short story collection, examining how Asimov and Hao both envisage AI as humanity's double, but diverge in their extrapolations of AI's developmental trajectories: Asimov's AI evolves towards humanisation, while Hao's AI commit to nonhuman values and objectives. The fifth chapter compares non-fictional texts and short stories from Chinese and American online magazines *Non-Exist* and *Clarkesworld*, discussing how the self-exoticisation and self-othering of "Chinese style SF" limits its identity to estrangement and dichotomous difference from Western SF and homogenises conceptions of Chinese SF. Overall, this thesis argues that rigid boundaries between the normative and the Other in SF is untenable, and dualistic ideas set up as antithesis lead to reductive homogeneity when establishing SF categories.

Lay Summary

This thesis compares stories of nonhuman sentience in Chinese and Anglophone science fiction, as well as "Chinese-style science fiction" in Chinese and Anglophone online science fiction magazines. The objective of this thesis is to explore the binary of what is characterised as common and ordinary, and what is characterised as anomalous and transgressive in science fiction. The first four chapters compare stories of aliens, monsters, and artificial intelligence. They point out that the relationship between humans and nonhuman sentience is paradoxical and transformative, since the nonhuman both reflects the human and represents the antithesis to the human. The human and the nonhuman are not clear-cut oppositions, but mingle and transform into each other. These chapters are built on the binary of Chinese SF and Anglophone SF. The fifth chapter will discuss this binary and its impact on the development of Chinese SF by examining "Chinese-style SF." It concludes that "Chinese-style SF" is the result of seeing Chinese SF as exotic and Western SF as normative. "Chinese-style SF" is an oversimplified category that is attributed some fixed and inherent characteristics, which cannot represent the complex reality of Chinese SF. Its identity is based on ideas that originate from a Western perception of the Oriental, and is therefore dependent on the West and not truly original.

The first chapter compares extraterrestrial intelligence in Liu Cixin's novels and Arthur C. Clarke's novels. It looks at how aliens go beyond human limitations, but also merge with the human. The second chapter analyses aliens in Liu Cixin's short stories. It investigates how aliens represent a stance against clear separation of the self and the Other. It argues that, by allowing binary oppositions to coexist, a diverse range of worldviews are produced. The third chapter compares transhuman monsters in Han Song's and Jeff VanderMeer's novels. It considers how these novels make monsters produce an uncanny effect, and use them to allude to societal issues and challenge ordinary reality. Some monsters are completely unknowable and inhuman, in contrast to the uncanny's human quality. The fourth chapter contrasts artificial intelligence from Hao Jingfang's work with that in Isaac Asimov's work. It examines how Asimov and Hao both think of AI as humanity's doppelganger. However, they diverge in their anticipations of AI's future development: Asimov's AI becomes increasingly human, while Hao's AI has nonhuman values and objectives. The fifth chapter compares Chinese and American online magazines *Non-Exist* and *Clarkesworld*. It discusses how Chinese-style SF defines itself as an exotic Other, which is self-limiting. Chinese-style SF's identity rests on being different from Western SF, and disregards the diversity of Chinese SF in its self-definition. Overall, this thesis argues that rigid boundaries between binaries in SF is untenable, and ideas set up as antithesis result in reductiveness and homogeneity when categorising SF.

Declaration of own work

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference or acknowledgment, the work presented is entirely my own.

Xiuqi Huang

Edinburgh, 23 November 2024

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Introduction

1. Binaries and Otherness in Chinese and Anglophone SF

The binary oppositions of norm and novum, the familiar and the unknown, and self and Other are at the heart of science fiction storytelling. The complex relationships between such pairs of binaries, whether of harmony or strife, assimilation or segregation, are central to SF thematic explorations. In SF stories focusing on nonhuman sentience such as AI, extraterrestrial intelligence, and supernatural beings of weird fiction, the binary opposition is more specifically manifested as the dualism between the human and the nonhuman Other. In such stories, norm of reality encompasses the human, anthropocentric, mundane, and knowable, while the novum is represented by the nonhuman, non-anthropocentric, uncanny, and unfathomable. This thesis will conduct comparative studies of Chinese and Anglophone SF novels and short stories on nonhuman sentience, discussing how authors from different cultures and historical periods create nonhuman Other in response to disparate social and literary contexts, and how the boundary between human and Other is crossed and blurred. I will argue that the SF binary of normative human and nonhuman Other cannot be read as an unequivocal dichotomy divided by a fixed and impermeable border, since the human and the nonhuman mingle with and transmute into each other, and paradoxically both negate and mirror each other, which renders any rigid boundary between them unsustainable and any effort to seal them off into separable categories too restrictive and essentialising to represent their complex nature and interactions.

This thesis will consider three types of nonhuman sentience in SF through comparisons of the works of three pairs of Chinese and Anglophone SF authors: extraterrestrial intelligence in Liu Cixin's *Remembrance of Earth's Past* trilogy (*Diqiu wangshi*, 2008-2010) and Arthur C. Clarke's three novels *Childhood's End* (1953), *2001: A Space Odyssey* (1968), and *Rendezvous with Rama* (1973), posthuman monsters in Han Song's *Subway* (*Ditie*, 2011) and Jeff

VanderMeer's *Annihilation* (2014), and artificial intelligence in Hao Jingfang's *Humanity's Other Shore* (*Renzhi bi'an*, 2017) and Isaac Asimov's *The Complete Robot* (1982). An overview of aliens in Liu Cixin's short stories will supplement analysis of extraterrestrial intelligence in Liu's trilogy. Based on a survey of nonhuman Others in these stories, I will argue that the Other's characteristics and symbolic significance are defined in relation to the literary, social, and historical contexts that the texts are shaped by and respond to, which differ significantly for Chinese and Anglophone authors placed in comparisons. However, while the defining traits of the Other differ as the contexts of the works differ, Chinese and Anglophone works involving the same type of nonhuman sentience exhibit similar universal creational principles and methods employed to produce an impression of otherness of nonhuman beings.

The nonhuman Others in Han Song's *Subway* and VanderMeer's *Annihilation* are conceived in response to different social issues: Han's subway lost in underground tunnels is a subversion of the propagandist narrative of unceasing progress of contemporary China, while VanderMeer's Area X that reclaims and reshuffles all organic matter is a subversion of man-made environmental degradation inspired by the 2010 Gulf Oil Spill. However, Han and VanderMeer both use the uncanny effect in portraying the nonhuman Other, and both create the variety of unknowable Other that cannot be reduced and returned to the uncanny. Hao Jingfang's AI are unembodied and emotionless to contrast humans' emotion capacity that emanates from unique human physiology, which reasserts humans' irreplaceability in the real-life context of the ever-growing challenge of AI's rapid progress. While Asimov's robots become increasingly humanised as they evolve and are tethered to their human origins, which renders them more sympathetic to humans, thus illustrating Asimov's point that the fearmongering of "Frankenstein Complex" prevalent in the tradition of robot stories has no rational basis, and robots' integration into human society is not unthinkable. Despite the different evolutionary turns taken by AI in Hao's and Asimov's stories, both authors find the essential otherness of AI in its role as humans' doppelganger that is paradoxically both humanity's mirror image and an inhuman absolute alterity. Aliens in Liu Cixin's *Remembrance of Earth's Past* are an embodiment of the amorality of the universe that clashes with the homocentric morality that human species stand for, as morality's relationship with a scientific view of the universe is a crucial theme that springs from the very beginning of the story with the persecution of scientist Ye Zhetai during the Cultural Revolution. Aliens in Clarke's novels, on the other hand, represent incorporeal infinitude transcending time and space that contrasts with the physical limitation and mortality of mankind; Clarke's aliens are the actualisation of his hope for humanity to "bid farewell to the flesh" and its fear of physical destruction (*Profiles of the Future* 209), which is more acutely felt due to the prospect of global nuclear destruction. Despite Liu and Clarke's discrepancies, they both maintain the essential alienness of extraterrestrial characters and civilisations by obscuring their perspectives and withholding detailed characterisations, and in creating such an absence, they avoid humanisation of alien life.

Besides stories of nonhuman sentience, the final chapter will investigate the class of Chinese SF labelled as "Chinese-style SF." Binaries of self and Other, which are central to SF on nonhuman sentience discussed in this thesis, are also found in Chinese-style SF's othering of itself due to the recognition of SF as an essentially Western genre. Comparisons of Chinese and Anglophone texts undertaken by this thesis entail the dualistic relationship between Chinese SF and Western SF, which is embraced by Chinese-style SF that vies with Western SF with its supposed unique identity derived from the usage of Chinese cultural elements. The Chinese-Western dualism subjects Chinese-style SF's utilisation of Chinese culture to cultural essentialism, which replaces the historical and social lived experience of culture with homogenising and oversimplifying narratives of Chinese cultural essences that contrast with the West. Such generalising and essentialising binary oppositions are numerous in Chinese-style SF's definition of its self-identity: exotic Chinese SF and normative Western SF; localist Chinese traditions and universal Western science and modernity; novel and estranging Chinese language expressions and English as the universal language of science. As much as nonhuman sentience is conventionally the novum of SF tales, traditional Chinese culture is treated as the novum by advocates of Chinese-style SF. However, analysis will show that traditional cultural elements in Chinese-style SF fail as the novum, since their self-exoticism and self-Orientalism determine their subsumption under the homogenous Western framework that sees Western scientific modernity as the norm. To critique Chinese-style SF, I will examine short stories by Chinese SF authors published in the American magazine *Clarkesworld* and those by Anglophone SF authors from the Chinese digital platform *Non-Exist* (*Bu cunzai kehuan*) that fall under the category of Chinese-style SF. I will also analyse interviews, essays, and editorials from *Clarkesworld* and *Non-Exist* pertaining to Chinese-style SF.

Examinations of the binaries of human and nonhuman Other, and of Chinese and Anglophone SF reveal the complex implications of binary structures, the malleable and multifaceted nature of the SF Other, and its entangled and porous relationship with the human self. Binary constructions generate multiple perspectives that lead to relativist, not absolutist views. The binary of science and literature in Liu's short stories on aliens inspires a variety of civilisational outlooks of life in the cosmos along the spectrum between scientific objectivity and literary subjectivity. Humans' and AI's conflicting views on emotions in Hao Jingfang's stories, the moral ambivalence of both Area X and the Southern Reach in VanderMeer's *Annihilation*, and the refutation of anthropocentrism through alien existence in Liu's and Clarke's works, all demonstrate the heterogeneity, ambiguity, and relativism that result from binary conceptions. The multiplicity that ensues from binary constructions is echoed by the diverse symbolic roles played by the nonhuman Other, ranging from a mirror to, or an antithesis of, or the unknowable beyond the human.

On a different note, binaries could also generate reductive and essentialist definitions for the sake of distinguishing one side of the binary from the other and maintaining the rift between the self and the Other. Chinese style SF's distinct character opposed to Western SF is premised on cultural essentialist and self-Orientalist notions that paint a desocialised and dehistoricised picture of traditional Chinese culture as mythical and possessing a timeless essence. Hao Jingfang's AI is constitutionally incapable of having emotions and necessarily so to form a fundamental difference from humans, whose supposed inimitable essence is emotions. However, the two opposing sides of the binaries ultimately cannot be straitjacketed or contained by the reductive and simplistic definitions that result from binary constructions, and will inevitably overflow into each other across blurred boundaries when more complex and ambiguous possibilities of their nature are probed: the human and the nonhuman Other commingle and metamorphose into one another, putting essentialist human traits such as autonomy, emotionality, individuality, and corporeality into question.

This thesis provides many examples of how blurred boundaries between binary pairs destabilise fixed, essentialised, or static dualistic concepts. Humans' transformation into the Star-Child and Overmind in Clarke's novels bespeaks the alien residing within the human. The overlap of the mundane and the grotesque in Han Song's novel unearths the cyclical and meaningless horror of everyday technologies. Asimov's robots who classify themselves as humans upset biological definitions of the human. The fact that binary oppositions are simultaneously antithetical and able to fuse with each other denotes the paradoxical relationship between self and Other in SF, where the Other is both an absence of and a mirror to the self. Aliens in Liu's trilogy and short stories imitate their understanding of the human, allowing humanity to see their reflection in the alien, but are also driven by inhuman intentions and outlooks. VanderMeer's Area X operates by principles of mimicry and duplicates human intruders, but its nature is inscrutable to human science. Advocates of Chinese style SF believes that its Chineseness is an antithetical difference to Western SF, but also sees the SF narratives and themes to which the Chineseness is added as essentially Western and reflections of Western influences.

The bridge connecting the human and the nonhuman Other in the stories examined is scientific cognition and methods - whether it is an effective bridge or not. Analyses of "Chinese-style SF" and Chinese SF on nonhuman sentience in comparison with Anglophone SF show that science is often attributed an othered and alienated status in Chinese works. In Han Song's *Subway*, science and technology give rise to human mutation and engender the inhuman Other; in Liu's trilogy, science and mathematics are the universal language to comprehend the nonhuman Other, in contrast to the human languages of art, literature, and moral rules; the Chinese-style SF studied reveal the uneasy and disjointed relationship between tradition Chinese culture and scientific modernity. The othered status of science in Chinese SF stems from the perception that science is of Western origin and imported from the West; it is to be grafted onto Chinese soil and impinges on Chinese traditions. As Wang Yao notes on the tension between the ideas of "China" and "science fiction": "the former is more likely to remind people of history, tradition, myth, martial arts romance, localism, and particularity, while the latter represents the future, modernity, technology, the West, globalisation, and universality." (Wang, "Are There No Glazed Tiles on Mars?" 119)

2. Literature Review

A significant number of comparative criticisms of Chinese and Anglophone SF are devoted to comparisons of Arthur C. Clarke and Liu Cixin and Clarke's formative influence on Liu. Scholars such as Liu Ge, Li Yun, Jiang Peipei, and Cui Hui note Clarke and Liu's shared appreciation for detailed conceptions of futuristic technology and focus on the grand scheme of races and worlds instead of individual characters. Will Peyton notes that Liu learned from

Clarke about how to construct convincing historicity of a fictional future in his works (Peyton 71), and Stephen Dougherty observes that Liu borrows Clarke's language of cosmic wonder and grandeur to address the social and historical reality of China (Dougherty 41-42). A few scholars such as Mingwei Song, Dougherty, Liu Ge, and Li Yun point out Clarke's and Liu's different treatment of the sublime, specifically Clarke's mysticism in contrast to Liu's rationalism and materialism. Clarke and Liu are a popular and unignorable pair in comparative studies of Chinese and Western SF, and this thesis hopes to add to existing scholarship by examining extraterrestrial intelligence in Clarke's and Liu's works, which is a largely ignored topic by previous studies despite its centrality to Clarke's and Liu's stories.

Other comparative studies deal with diverse Chinese and Anglophone authors, with the historical period of Chinese authors ranging from early PRC to contemporary times. Lyu Guangzhao's monograph *The Boom and the Boom: Historical Rupture and Political Economy in Contemporary British and Chinese Science Fiction* (2024) is an important work that sheds light on the significance of reading SF texts comparatively. Lyu argues that juxtaposing Chinese and British SF works and their different responses to social changes shows how science fiction, as a planetary literature, is still rooted in specific localities and particular historical periods, thus proving SF's nature as a political and historical genre. Lyu compares the British and Chinese SF booms starting from the last decade of the twentieth century, interpreting them as responses to Britain's and China's respective neoliberal and post-socialist transitions. What is relevant to this thesis is Lyu's detailed account of the socio-economic transformations from which New Wave Chinese SF emerged, including the process of denationalisation and marketisation, and the rise of mass culture that replaced high-modernist elitism. Lyu analyses numerous Chinese SF authors also considered in this thesis, such as Han Song, Hao Jingfang, Chen Qiufan, and Liu Cixin. However, while this thesis is interested in nonhuman sentience's embodiment of the true Other beyond its function of symbolising human relations, Lyu reads nonhuman sentience solely as metaphors of human social reality. This thesis investigates the boundary between the human and the inhuman, whereas Lyu studies boundaries situated within the human, which arise from ideological rupture, social stratification, and market competition. The collapse of the AI system in Han Song's *Red Star over America* (*Huoxing zhaoyao meiguo*, 2012) is seen as an allegory of the tension between top-down elitism and bottom-up commercial culture. The transhuman character in Chen Qiufan's *Waste Tide* (*Huangchao*, 2013) is interpreted as a symbol of the conflict between labour migrants and local residents in China's urban regions. Aliens abiding by the Dark Forest laws in Liu Cixin's trilogy are considered as representations of social subjects remade to fit into China's new socio-economic condition, which succumbs to the zero-sum game of fierce market competition.

To give a few more examples of comparative criticisms, Jing Jiang compares cloning in David M. Rorvik's *In His Image: The Cloning of a Man* with Ye Yonglie's *Reaping What One Sows* (*Zi shi qi guo*), written as a sequel to Rorvik's book (Jiang 60-66). Zhou Ping juxtaposes Jules Verne's *Around the Moon* and Zheng Wenguang's *From Earth to Mars* (*Cong diqiu dao huoxing*) for their shared subject of space exploration ("Exploration of Chinese and Western Science Fiction Novels"). Cara Healey detects the pattern of information degradation and forgetfulness in Han Song's works, which are associated with H.G. Wells' "The Country of the Blind" and Robert Heinlein's *Orphans of the Sky* (Healey 513-514). Jiang Zhengyu compares the characteristics of Western cyberpunk and Chinese cyberpunk through commentaries on the works of Philip Dick and Chen Qiufan (Jiang, "The Trans-continental Change of Cyberpunk").

Preceding comparative studies of Chinese and Anglophone SF generally focus on differences and similarities between Chinese and Anglophone works in their treatment of the same themes or subjects, which are tied to the historical, social, and literary contexts of the authors in question. Divergent values and mindsets evinced by Chinese and Anglophone texts are linked to different cultural traditions and social climates. This thesis will follow the paradigm of identifying affinities and discrepancies in Chinese and Anglophone SF tackling the same subject, and tracing the discrepancies to different historical conditions, social milieus, and literary conventions and shifting trends. The topic of nonhuman sentient Other, which this thesis centres on, however, has not been a focus in previous comparative studies. Moreover, beyond merely identifying similarities in Chinese and Anglophone SF in their approaches to the same subject, I will explore how similar creational principles of the Other in Chinese and Anglophone texts are not simply a matter of coincidence or imitation, but help to reveal essential characteristics of the SF Other.

The Chinese stories examined in this thesis belong to the period called "New Wave Chinese SF," which, as Mingwei Song defines it, "characterises the works of those new authors who have become the main voices in Chinese science fiction since the beginning of the twenty-first century" (Song, "After 1989: The New Wave of Chinese Science Fiction" 8). Learning the literary pedigree of New Wave Chinese SF, the historical circumstances from which it emerged, and its main contributors and collective traits is crucial to understanding the literary and historical contexts that shape the works of Chinese authors discussed in this thesis, in particular their portrayal of nonhuman sentience and its symbolic significance, their attitude towards science and technology and social criticism, how they situate Chinese SF in relation to Western SF, and cultural discourses and intellectual debates such as Orientalism, social Darwinism, and the 1980s debate on literature and science that continue to influence their works.

Mingwei Song is one of the first scholars to pay attention to New Wave Chinese SF, and his works such as the monograph *Fear of Seeing: A Poetics of Chinese Science Fiction* (2023), and articles such as "Variations on Utopia in Contemporary Chinese Science Fiction" (2013), "After 1989: The New Wave of Chinese Science Fiction" (2015), and "Representations of the Invisible: Chinese Science Fiction in the Twenty-First Century" (2016) are important for comprehending New Wave Chinese SF's origin and character. Song illuminates the subversive and transgressive nature of New Wave Chinese SF exemplified by its subversion of the convention of political utopianism and the genre traditions of Chinese SF, and by its technological pessimism that undermines the political agenda of the myth of development. Pertinent to this thesis, *Fear of Seeing* puts forward Liu Cixin and Han Song as the two poles of New Wave Chinese SF, their respective hallmarks being Liu's cosmic sublime and grandeur and Han's chthonic fear and obscurity.

Criticisms by scholars such as Nathaniel Isaacson, Hua Li, and Rudolph G. Wagner delineate the history and characteristics of Chinese SF prior to the New Wave, which help to identify themes and sentiments that persist and traits and conventions that are subverted by the New Wave. Nathaniel Isaacson's *Celestial Empire: The Emergence of Chinese Science Fiction* (2017) is a major work on early twentieth-century Chinese SF and its relationship to the colonial project and industrial modernity. Issacson argues that Chinese SF emerged as a result of the presence of colonial powers, that the relationship between SF and Orientalist discourse is a defining feature of the genre in early twentieth-century China, and that discourses of Orientalism and social Darwinism played a critical role in intellectual and popular dialogues on modernisation and China's national metamorphosis during the early twentieth century. Rudolph G. Wagner's "Lobby Literature: The Archeology and Present Functions of Science Fiction in China" (1985) details the constraints and expectations placed on Chinese SF as a genre affiliated to science between 1978 to 1981 – constraints from which the New Wave is later freed. Hua Li's *Chinese Science Fiction during the Post-Mao Cultural Thaw* (2021) studies the socio-political and cultural factors that coloured Chinese SF between 1976 and 1983, and Chinese SF's development beyond its role in science popularisation and its transition from socialist realism to social realism. The book ends with remarks on the diversity of Chinese New Wave SF, whose main characteristics such as "a somewhat sceptical or even subversive political bent, a deep familiarity and engagement with the canon of Western SF, and a wide range of themes and narrative techniques" can be traced back to thaw era SF (Li 180).

In terms of general overviews of the history of Chinese SF, Wu Dingbo is one of the early Chinese SF scholars who introduced Chinese SF to English readers. He edited *Science Fiction from China* (1989) and *Handbook of Chinese Popular Culture* (1994) with Patrick D. Murphy. Both collections contain Wu's essays that outline the history of Chinese SF from its germination in the late Qing up until the 1980s. Wu's efforts to trace the ancestry of Chinese SF to the tradition of the fantastic in classical Chinese literature is a precursor of "Chinese-style SF" discussed in this thesis. Wu Yan is another scholar who contributed significantly to documenting the history of Chinese SF. Wu Yan edited *History of Chinese Science Fiction in the 20th Century* (*Ershi shiji Zhongguo kehuan xiaoshuoshi*, 2022), which delineates the evolution and transformation of Chinese SF from late Qing to a new period of flourishment in the 1990s. His *Outline of Science Fiction* (*Kehuan wenxue lungang*, 2021) and *Science Fiction Literary Theory and Systemic Construction of Disciplinary Studies* (*Kehuan wenxue lilun he xueke tixi jianshe*, 2008) are comprehensive guides to important trends and authors of world SF, and chronicle the development of SF theory in China and how it is effected by Soviet and Anglophone SF theories. With Jiang Zhenyu, Wu Yan edited *A Chinese Science Fiction Studies Reader* (*Zhongguo kehuan wenlun jingxuan*, 2021), which features essays and interviews from influential Chinese writers and scholars over the past century such as Lu Xun, Tong Enzheng, and Liu Cixin. These pieces investigate the function and nature of the SF genre and trace the course of development of Chinese SF.

3. Methodologies for Studying the Human-Nonhuman Binary and Othering in SF

For this thesis' comparative study of nonhuman sentience in Chinese and Anglophone SF, I selected works that centre around nonhuman sentience from Chinese and Anglophone writers who are notable either for their widely recognised impact on the genre, the prestigious reputation of their award-winning works, or their pioneering style and science fictional imagination.

In the Chinese scholar Yan Feng's words, "Liu Cixin has been seen as a representative of Chinese hard science fiction since the beginning" (Liu, *Sishen yongsheng* i). The worldwide success of Liu's magnum opus, *Remembrance of Earth's Past*, has propelled him to star status, and the Trisolaran civilisation in his trilogy has become synonymous with contemporary Chinese SF. There is no better writer to compare with Liu than Arthur C. Clarke, who exerted formative influence on Liu. Clarke became known as "the Prophet of the Space Age" (Uri, 2018) for his visionary SF and scientific extrapolations. Steven J. Dick considers Clarke's alien stories to be a representative of "the Stapledonian tradition of the cosmic perspective" that uses "the theme of alien encounter [...] to place humanity in perspective" (Dick 126) — a tradition that Liu also adheres to. I chose three of Clarke's most well-regarded and well-known novels to compare with Liu's work: *Childhood's End*, which is "what many readers and critics still consider Arthur C. Clarke's best novel" (McAleer 88) and "a classic of alien literature" (Dick 127); *2001: A Space Odyssey*, the film version of which is an indisputable cultural icon; and *Rendezvous with Rama*, which won the 1973 Nebular Award for Best Novel and the 1974 Hugo Award for Best Novel.

Han Song's surrealist and avant-garde storytelling that challenges rational perceptions of reality makes him an irreplaceable presence in New Wave Chinese SF. Mingwei Song describes Han Song's "unique SF vision [...] as a mythology of the chthonic," and credits Han's writings in the late 1980s with helping to "resurrect the genre" and pioneering "the new wave during the 1990s" (Song, *Fear of Seeing* 163). *Subway* is one of Han's works that best exemplifies the themes of posthuman transmutation and "the collapse of reason and rationality" (161) — two themes that are also characteristic of Anglophone weird fiction. Jeff VanderMeer is a major advocate and writer of weird fiction, and Joshua Rothman goes so far as to dub him "the King of Weird Fiction" (Rothman, 2015). With his wife Ann VanderMeer, he edited the anthologies *The New Weird* (2008) and *The Weird: A Compendium of Strange and Dark Stories* (2011). The introduction of the former anthology contains an oft-quoted definition of the New Weird, which will be discussed in detail in the third chapter. I chose *Annihilation*, the first book of his best-selling *Southern Reach Series* to compare with Han's work, since *Annihilation* intensely focuses on posthuman transformation and the dissolution of scientific rationality.

Hao Jingfang rose to fame after her short story *Folding Beijing* (*Beijing zhedie*, 2012) won the 2016 Hugo Award for Best Novelette, which is seen as a continuation of Chinese SF's international recognition after Liu Cixin's 2015 Hugo Award win. Hao's *Humanity's Other Shore* offers a deep dive into the possible futures of AI advancement and human-AI relationship, and is symptomatic of Chinese public and Chinese SF writers' growing interest in the future of AI and its effect on society. Some more recent examples of Chinese SF concerned with AI include the anthology *Artificial Gods: The Best of Chinese Artificial Intelligence Science Fiction* (*Renzao Shenqi: Zhongguo rengong zhineng kehuan xiaoshuo jiazuoxian*, 2020) and Jiang Yitan's short story collection *Joker* (*Xiaochou suiyue*, 2023). I will compare *Humanity's Other Shore* with *The Complete Robot*, which is the most comprehensive collection of Isaac Asimov's robot stories. As the self-admitted "father of the modern robot story" (*The Complete Robot* xii), Asimov's influence on the portrayal of AI in SF is indelible. In his own words, as he began to think of robots not as a symbolic menace or an ideal, but as "industrial products built by matter-of-fact engineers," "this notion [...] permeated my stories more and more until the whole character of robot stories in serious printed science fiction changed" (xii). Asimov's notion became a tradition of robot stories that Hao Jingfang also follows, while Asimov's and Hao's divergent visions of the future yield fruitful comparisons.

In terms of methodology, I will employ theories of the uncanny, the grotesque, consciousness, anthropocentrism, humanism, and posthumanism among others to shed light on the binary of the human self and the nonhuman Other through close reading of SF texts. The uncanny is a significant concept in comprehending the SF Other not only because the double, as an essential constituent of the uncanny phenomenon, encapsulates the nonhuman Other's relationship with the human as both "excessive sameness and antithetical difference" (Faurholt, 2009), but because the uncanny effect, which arises due to repressed aspects of the human psyche, represents the variety of the Other with inherently human roots. I will apply Freud's "The Uncanny" (1919) and Jacques Lacan's *Family Complexes in the Formation of the Individual* (1938) to close reading of Han Song's *Subway* and VanderMeer's *Annihilation*, in order to identify the uncanny characteristics of the nonhuman Other including the double, involuntary repetition, omnipotence of thoughts, intellectual uncertainty, and the repressed weaning complex. Gry Faurholt's "Self as Other: The Doppelgänger" (2009) and Jacques Derrida's "Speculations – On Freud" (1978) expand and elaborate on Freud's conception of the uncanny, and I will borrow their observations in the chapter on artificial intelligence to elucidate the threat to humanity presented by AI, which comes in the form of the double that usurps human identity with its otherness and confounds the order of representation.

As an antithesis of the uncanny, the Weird amounts to the type of nonhuman Other that cannot be returned and reduced to the familiar human and eludes rational cognition. Explications on the SF Weird, such as Roger Luckhurst's "The weird: a dis/orientation" (2017), Emily Alder's *Weird Fiction and Science at the Fin de Siècle* (2020), and Jeffrey Andrew Weinstock's "The New Weird" (2016), are pertinent to analysis on the Weird in Han Song's and VerderMeer's novels that collapses borders and introduces its alien principles into the mundane. Istvan Csicsery-Ronay's definition of the "science-fictional grotesque" in *The Seven Beauties of Science Fiction* (2008) is useful in grasping the cryptic supernatural beings in

Subway and *Annihilation* that eschew the rational predictability of scientific methods and fixed definitions derived from binary distributions of the uncanny.

To provide a theoretical basis for the divide between machine intelligence and human consciousness in Asimov's and Hao Jingfang's stories, I will turn to theories of consciousness and research on human emotion. John Searle's "Is the Brain a Digital Computer?" (1990) and "Mind, Brains, and Programs" (1980) argue that the function of digital programme is not intrinsic to the physical system it runs on, and therefore cannot be equated to the biological nature of humans' mental processes. Searle's argument undergirds claims of humans' unequivocal distinction from AI in Hao's and Asimov's stories. Kurt Gray and Daniel M. Wegner's social experiments in "Feeling Robots and Human Zombies: Mind Perception and the Uncanny Valley" (2012) prove that emotion is implicitly viewed as the essence of human consciousness and therefore not expected to be found in AI, which suggests why emotion is repeatedly presented as an essentialised human feature that sets humans apart from AI in Hao's stories. Arthur Koestler's *The Ghost in the Machine* (1967) offers theoretical context for and insight into the appraisal of emotions by humans and AI in Hao's stories. Koestler's hypothesis of the conflict between the human brain's primitive limbic system and its advanced neocortical system, which results unfavourably in rational judgement being clouded by irrational emotions, is the theoretical basis of AI's conviction in the human brain's defectiveness in Hao's stories.

To examine extraterrestrial intelligence in Clarke's works and Liu's novels and short stories, I will reference Gregory Benford's "Effing the Ineffable" (1987) and "Aliens and Knowability: A Scientist's Perspective" (1980). Benford's classification of extraterrestrial intelligence in SF into "anthropocentric aliens" and "unknowable aliens" offers a guideline to categorising aliens in Clarke's and Liu's stories ("Aliens and Knowability" 54-55). Benford's articles are also useful in illuminating the relationship between human sciences and the alien. Benford points out that science often represents the human urge for certainty and control as opposed to the indecipherable alien in SF, which is applicable to depictions of humanity's scientific and technological endeavors in Clarke's novels. Benford suggests the possibility of understanding and conversing with the alien through the universal language of mathematics – a belief exhibited in Liu's novels. The definition and repudiation of anthropocentrism in Eileen Crist and Helen Kopnina's "Unsettling Anthropocentrism" (2014) helps to expound on SF alien's refutation of anthropocentrism in Clarke's and Liu's works – a refutation that is executed either through diverting attention from the homocentric self to pursue a scientific understanding of the nonhuman Other, or through embracing the posthuman age that renders the human obsolete. Doctrines of humanism dictate humans' metamorphosis into the alien in Clarke's works, as well as humanity's ideological conflict with the nonhuman Other in Liu's and Hao's works. Rosi Braidotti's *The Posthuman* (2013) is pertinent to a critical reading of the humanistic conception of mankind's teleological evolution into the alien and progress unlimited by physical constraints in Clarke's novels. Sonia Baelo Allué's "Blurring Posthuman Identities: The New Version of Humanity Offered by Bicentennial Man" (2017) identifies autonomy and individualistic fulfilment as core values of liberal humanism, which, although adhered to by human characters in Hao's stories, are irrelevant to AI that treats humans as data points in statistical calculations. In Liu's trilogy, human race takes pride in humanistic principles that seem tone-deaf to alien civilisations surviving by the merciless rules of the Dark Forest.

Other relevant criticisms on science's relation to the human and the nonhuman include R. L. Rutsky's chapter in *The Cambridge Companion to Literature and the Posthuman* (2017), which explores technology's utopic and dystopic impact on humans. Technology's role in Han Song's *Subway* can be understood in terms of Rutsky's description of the technological Other that imposes its own mechanical and instrumental traits on humans. Michael Adas' *Machines as the Measure of Men* (1989) investigates science's authority in the measurement of social progress and civilisations' degree of development and worth, which is reflected in the scientistic view of science as the solution to human salvation and betterment in Liu's stories.

To study the binary of Chinese and Anglophone SF and Chinese-style SF's Orientalist self-othering, Zhan Ling, Wang Yao, and Lorenzo Andolfatto's criticisms on the national characteristics and Chineseness of Chinese SF will be useful. Zhan Ling's "The Mythical and Historical Chinese Science Fiction in the Early 1990s" (*Lun ershi shiji jiushi niandai chu shenhua yu lishi ticai de kehuan xiaoshuo chuangzuo*, 2015) and "The Fusion of National Tradition and Scientific Modernity – Creative Works on Chinese Mythology and Historical Science Fiction in the Last Two Decades of the Twentieth Century" (*Minzu chuantong yu kexue xiandai de ronghe – lun ershi shiji hou ershinian Zhongguo shenhua lishi kehuan ticai chuangzuo*, 2017) establish the function of Chinese-style SF as fabricating a genealogy of Chinese SF derived from Chinese culture and literary history, nativizing the scientific tradition, and addressing the rupture between tradition and modernity. Wang Yao's "What Makes Chinese Science Fiction Chinese?" (2014), "National Allegory in the Age of Globalization: The Cultural Politics in Contemporary Chinese Science Fiction" (*Quanqiuhua shidai de minzu yuyan – dangdai Zhongguo kehuan zhong de wenhua zhengzhi*, 2015), and "Are There No Glazed Tiles on Mars? – Contemporary Chinese Science Fiction and the Issue of 'Nativisation'" (*Huoxing shang meiyou liuliwa ma – dangdai Zhongguo kehuan yu "minzuhua" yiti*, 2016) draw attention to the dichotomy of Chinese tradition and Western modernity, the contrived nature of an imagination of the Orient distinct from the Occident, and the fundamental homogeneity of self-Orientalist narratives that aim to differentiate itself from the West. Lorenzo Andolfatto's "Han Song's 'A Guide to Hunting Beautiful Women' and the Restricted Horizon of Chinese SF" (2022) problematises the "Chineseness" of Chinese SF created by "a complicit feedback between Orientalist and Self-Orientalist discourses" (Andolfatto 83). Jason Cong Lin's "The Rising China is Not a 'Sick Man' Anymore: Cultural Nationalism in the Xi Jinping

Era" (2024) and Hiromi Mizuno's *Science for the Empire* (2009) provide historical and cultural contexts for the relationship between tradition and modernity in Chinese SF, both noting Asian nations' complex sentiments towards their traditions – they take pride in cultural traditions that are the bedrock of unique national identities, but feel the imperative to modernise and revamp anachronistic cultural practices and thinking. Scholarship on ethnic tourism exemplified by Xiaoping Wu's "Ethnic Tourism - A Helicopter From 'Huge Graveyard' to Paradise?" (2000) sheds light on ethnic tourism's dehistoricised exoticism and self-Orientalism practiced to create a sense of difference, which is valuable to the analysis of stories published in *Non-Exist* that are inspired by the authors' experience of ethnic Miao culture at Danzhai tourism village.

4. Outline of Chapters

This thesis is divided into five chapters. The first chapter discusses extraterrestrial intelligence in Liu Cixin's *Remembrance of Earth's Past* trilogy and Arthur C. Clarke's *Childhood's End*, *2001: A Space Odyssey* and *Rendezvous with Rama*. I will analyse how Clarke and Liu humanise alien characters and races to make meaningful inter-civilisational interaction possible, but also preserve their quality of alienness that cannot be reduced to or grasped by the human by refraining from detailed disclosures of alien characteristics or expositions of alien intellectual processes, and by suggesting inhuman frames of reference. I will then investigate how Clarke and Liu differ in defining the human-alien binary and in imagining humans' evolution into the inhuman in space, how the inhuman is defined by crossing the hurdle of human physical limitations in Clarke's novels, in contrast to the inhuman defined as the Darwinian antithesis of homocentric morality in Liu's novels, and how their conceptions of the alien as subversions and challenges of human boundaries are related to the historical and social contexts of their works. Finally, I will consider science's role in humanity's efforts to communicate with, repel, or comprehend extraterrestrial intelligence. Liu's trilogy sees science as a means to broaden the anthropocentric view, enabling humanity to comprehend and join the alien, yet science in Clarke's novels is representative of human physical and mental inadequacy that contrasts with the unfathomable infinitude of the alien.

The second chapter centres on extraterrestrial intelligence in Liu Cixin's short stories and how they complement and expand on existential outlooks and values of cosmic civilisations in Liu's trilogy. This chapter is divided into three sections. In the first section, I observe that extraterrestrial intelligence functions as both metaphorical and literal mirrors in Liu's short stories: some alien societies in Liu's stories reflect the state of humanity's own societal issues, while other alien characters subscribe to the philosophy of effacing the self to mirror the universe, which coalesce the human binary of self and Other into a unitary whole. The second section highlights the dichotomy of scientific positivism and literary humanism in the literary tradition of Chinese SF, which is reverberated throughout Liu's short stories. The polarity of scientistic beliefs and artistic ideals that coexist and contend with each other in Liu's stories generate a plethora of alien worldviews noted for their relativistic nature and conflicting diversity. The third section looks into the scientism exhibited by some of Liu's stories, which is questioned by his other dystopic tales that overthrow the idea of unlimited progress brought about by scientific advancement.

The third chapter investigates posthuman monsters of the Weird in Han Song's *Subway* and Jeff VanderMeer's *Annihilation*. In the first part of the chapter, I will consider the literary and social contexts of *Annihilation* and *Subway* and how the texts respond to them. Han's surreal subway train that causes devolution and mutation casts doubt on the prosperous semblance of contemporary Chinese social progress, and VanderMeer's Area X that reshuffles and mixes all materialities and incapacitates human technologies allegorises a reversed process of environmental degeneration. In the second part, I will discuss the deliberately obscured distinction between the human world and the inhuman territories that eventually allows the boundary between the two to entirely disintegrate. In the third part, I will discuss science's relation to the binary of the human and the inhuman – in other words, whether science is subservient to human purposes and represents human ways, or the progenitor of alienating organisational principles of society and inhuman forms of existence. Finally, I will explore uncanny phenomenon in the two novels that are traced to human roots, as well as the irreducibly inhuman otherness born from the human that develops into an enigma that cannot be rationalised by human cognition.

The fourth chapter examines artificial intelligence in Hao Jingfang's *Humanity's Other Shore* and Isaac Asimov's *The Complete Robot*. I will first elucidate the social and literary contexts prompting Hao and Asimov's characterisation of AI, namely Asimov's discontent with "Frankenstein Complex" dominating the narratives of robot tales, and Hao's preoccupation with the social reality of AI's impact on employment and the prospect of AI reducing humans to data. I will then move on to AI's essential trait as humanity's double that paradoxically embodies sameness and antithesis of what the human stands for: on the one hand, AI mimics human form and intelligence, confusing the distinction and representational hierarchy between human and AI; on the other hand, it supplants human identity and experience as an Other, reducing the human to a shadow of itself. Next, I will explore Asimov's and Hao's contrasting stances on the boundary between human and AI: Hao underscores AI's otherness rooted in its abstract incorporeality and fundamental discrepancies between AI's and human's view of and capability for emotions, while Asimov's stories anthropomorphise AI and suggest definitions of the human that extend to and include AI. Finally, I will evaluate two different paths of AI's evolution presented by Asimov and Hao: the increasing humanisation of AI and its close alliance with human interests in Asimov, and AI's deviation from human values and objectives and increasing alienation from human perspectives in Hao Jingfang's works.

The fifth chapter concerns the category of "Chinese-style SF," defined by its blending of classical Chinese literature and Chinese culture with SF narratives. I will examine two online SF magazines: American magazine *Clarkesworld* and Chinese digital platform *Non-Exist*. I will first compare interviews and essays concerning Chinese SF and its distinguishing traits in *Clarkesworld* with editorials and interviews about Chinese-style SF in *Non-Exist*. Chinese elements in Chinese-style SF are attributed different functions in *Clarkesworld* and *Non-Exist* due to different readerships that the two magazines cater to: Chinese culture is meant to exert a unique and exotic impression on international readers of *Clarkesworld*, thus help promoting Chinese SF as a refreshingly novel and distinctive presence in world SF; for domestic readers of *Non-Exist*, combining traditional Chinese culture and SF tropes of Western origin is intended to nativise SF, and raise the quality of Chinese SF with traditional culture attributed innate prestige. The literary objective of Chinese style SF contributes to self-exoticisation and self-othering, and to entrenching the cognizance of rupture between Chinese tradition and modern science. Then I will analyse short stories from the two magazines that fit the description of "Chinese-style SF." Stories by Anglophone authors who attended *Non-Exist*'s workshop in Danzhai tourism village, which is intended to inspire SF authors with its local ethnic Miao culture, demonstrates that exoticised traditional culture is a construct that conforms to generalised Orientalist perceptions. Chinese-style SF published in *Clarkesworld* evidence that deliberate attempts to integrate Chinese history and tradition with scientific imagination only further accentuates the underlying assumption of the disruption between the two.

This thesis is built on a group of binaries: scientific positivism and the alien unknowable, the humanising uncanny and the weird that is irreducibly inhuman, embodied human consciousness and disembodied artificial intelligence, the scientific and the literary, humanist morality and scientistic amorality, human biological limitation and inhuman infinitude, exotic Chinese-style SF and universal Western SF tropes, and the most important binary of all, the self and the Other. As this thesis will demonstrate, the relationship between self and Other is far more complex than clear-cut opposition – it is entangled and paradoxical, just as Han Song cryptically asks in *Subway*: "are aliens humans or themselves?" (Han 50) VanderMeer's explanation of the nature of Area X in *Annihilation* can also be seen as a fitting definition of the SF Other: "[…] one that works through supreme acts of mirroring, and by remaining hidden in so many other ways, all without surrendering the foundations of its otherness as it becomes what it encounters" (VanderMeer 191). Like the doppelganger, the SF Other is paradoxically both a mirror to the self, which is human and knowable, and the absence of the self, whose nature is hidden from us. The self and the Other are inevitably intertwined, and examples of it abound in this thesis – the definition of Chinese-style SF is dependent on Western SF, its supposed opposite; as humanity's double in Asimov's and Hao's stories, AI could either emulate the human or alienate with its otherness underlying imitations of the human; Han Song's surreal underground realm and VanderMeer's Area X are both an allegory and subversion of the norm of reality, and both alludes to reality and invades it; it is impossible for Liu's and Clarke's humans to not be contaminated by the alien, either through turning into the alien, or due to the presence of the alien destabilising and questioning the category of the human. This paradoxical relationship between the self and the other, then, becomes a universal principle of creating the SF Other.

Chapter 1:

Extraterrestrial Intelligence in Arthur C. Clarke's and Liu Cixin's Science Fiction

Arthur C. Clarke, a representative figure of Golden Age SF, and Liu Cixin, a prominent contemporary Chinese SF author, both heavily focus on human interaction with extraterrestrial life and the grand picture of cosmic civilisations in their works, and are especially worth comparing because of Liu Cixin's self-proclaimed admiration for and imitation of Arthur C. Clarke's works. Liu called his own fictions "poor imitations of Arthur C. Clarke's works" (Cui 26), and noted on his *Remembrance of Earth's Past* trilogy's imitation of *2001: A Space Odyssey*:

> "the structure of the third book of the trilogy is the structure of *2001: A Space Odyssey* […] from the most realistic and trivial details, it takes flight and flies ever higher; the beginning is like a relatively smooth curve, yet toward the end it suddenly reaches to the widest scale of time and space, to a state of infinity" (Huang, 2011).

The flight from "realistic and trivial details" to "a state of infinity" in Liu's and Clarke's works is achieved through the narrative journey from anthropocentric realism to the Other of extraterrestrial life across the infinite cosmos.

With Liu's self-perceived affinity to Clarke in mind, this chapter will discuss the characterisations of aliens, the boundary between the human and the alien, and the relationship between science and the alien through close readings of Clarke's and Liu's novels. I will examine Clarke's *Childhood's End* (1953), *2001: A Space Odyssey* (1968), and *Rendezvous with Rama* (1973), and Liu's *Remembrance of Earth's Past* trilogy, which consists of *The Three-Body Problem* (*Santi*, 2006), *The Dark Forest* (*Hei'an senlin*, 2008), and *Death's End* (*Sishen yongsheng*, 2010).

Childhood's End is set in the late 20th century, with the US-Soviet space race as the backdrop. A race of aliens, known as the Overlords, descends on Earth to enforce peace in human societies. The Overlords take over Earth, and later reveal to humans that they serve a vast cosmic intelligence called the Overmind, and their task is to oversee humanity's amalgamation with it. The novel ends with the extinction of the human race, as human children's minds merge with the Overmind into a single consciousness. *2001: A Space Odyssey* begins with prehistoric apes who are hypnotically induced by an alien monolith and start to develop higher intelligence, setting them on the evolutionary path to humans. Jumping ahead to modern times, scientists discover another alien monolith on the Moon, which emits a radio transmission that directs them to a moon of Saturn. A mission is sent there, and the only survivor of the mission, David Bowman, comes into contact with the infinite cosmic mind, after which he is transformed into an immortal Star-Child.

Rendezvous with Rama tells the story of a group of humans exploring a cylindrical alien spaceship that enters the Solar System. Inside, they discover a body of water and city-like structures, and later on, even encounter biological robots, alien flowers, and alien utensils. The government of Mercury deems the alien ship dangerous and decides to destroy it, but the weapon they launched is disarmed by the explorers, who eventually depart from the spaceship with the conclusion that its purpose and function remain unknown.

Three-Body Problem, the first installment of Liu's trilogy, starts with a scene during the Cultural Revolution where astrophysicist Ye Wenjie witnesses her father's persecution and death. Later, when working at a secret military base called the "Red Coast," Ye broadcasts a radio transmission into space, which is intercepted by the Trisolaran civilisation. Disillusioned with human nature, Ye invites the Trisolarans to come and reform Earth. However, since the Trisolarans' home planet, Trisolaris, orbits an unstable ternary star system and has an extremely volatile environment, the Trisolarans decide to invade and colonize Earth instead. In the second book, *Dark Forest*, Earth is under the total surveillance of "sophons," which are miniscule supercomputers sent by the Trisolarans to Earth. Four "Wallfacers" are appointed to devise defense strategies on their own, since sophons cannot surveil human thought. One of the

Wallfacers, Luo Ji, works out the Dark Forest laws of the universe, which determine the insuperable hostility between cosmic civilisations and demand that they hide from each other, since anyone exposed will be destroyed by a more advanced civilisation. After a Trisolaran probe annihilates the human space fleet, Luo Ji threatens to broadcast Trisolaris' location to the universe, forcing them to retreat. In the third book, *Death's End*, humanity sets up a deterrence system based on Luo Ji's theory, which is controlled by an elected "Swordholder." The Swordholder would broadcast Trisolarans' location in the event of their renewed aggression, which would result in the destruction of both Trisolaris and Earth by other civilisations. The deterrence fails due to the Swordholder Cheng Xin's refusal to activate mutual destruction as the Trisolarans attack Earth. A fugitive human spaceship broadcasts Trisolaris' location, ending in Trisolaris' and Earth's destruction.

In the first section of the chapter, I will discuss how Clarke and Liu create alien societies of good will and of hostility, respectively, to subvert certain real-world social conditions. Both authors humanise alien characters and races to provide a basis of meaningful inter-civilisational communication, yet both preserve the aliens' quality of otherness that cannot be reduced to the human by withholding detailed characterisations of alien presence and suggesting inhuman frames of reference. In the second section, I will investigate how Clarke and Liu differ in defining the inhuman antithetical to the human, and in envisioning humans' transformation into the inhuman in space. The inhuman is defined by transcending biological human limitations in Clarke's novels, in contrast to the inhuman defined against homocentric morality in Liu's novels, and such discrepancies are related to the respective historical and cultural contexts of their works. In the third section, I will consider the role of science in humanity's interaction with extraterrestrial intelligence. While Liu's trilogy sees science as a way to be liberated from the narrow scope of anthropocentrism and to comprehend and incorporate the alien, science in Clarke's novels is representative of human limitation in opposition to the unconfined possibilities of the alien. Underlying Clarke's and Liu's diverging characterisations of the traits of extraterrestrial intelligence are common conceptions of the binary of human and alien, wherein the alien represents the antithesis or subversion of the human and that which transcends the limits of the human. The intentional obscurity and absence in Clarke's and Liu's depiction of the alien, however, extricates the alien from the binary as a true Other inaccessible to the human.

1. Creating the Alien

A significant divergence in Clarke's and Liu's depiction of aliens is Clarke's preference for benevolent cosmic civilisations and Liu's tendency to write hostile and aggressive aliens. Clarke's visions of alien races are informed by the Cold War and the likelihood of humanity's then imminent nuclear destruction. In Clarke's novel *Earthlight* (1955), a character remarks that "Man was not content with the hazards that Nature could provide. He was busily building his own funeral pyre" (Clarke, *Earthlight* 22), which, as John Hollow comments, "is a thought out of the 1950s that insists on being said," and which expresses the fear that "the uncaring nature of the universe and the belligerent nature of the human race may prove to be too much alike to keep us from destruction" (Hollow, *Against the Night, the Stars* 70). In response to the apocalyptic forecast of human future of the Cold War era, Clarke's peaceful aliens offer escape from the predicament of the times. To quote Clarke's essay "When the Aliens Come," "knowledge that other beings had safely passed their nuclear crises would give us renewed hope for our own future" (Clarke, *Report on Planet Three* 95). Clarke believes that advanced alien civilisations are necessarily peaceful because a violent civilisation "would have destroyed themselves long before they got to us. Any race intelligent enough to conquer interstellar space must first have conquered its own inner demons" (100). Clarke's faith in the peaceful development of life in the universe calls for humans to curb our own destructive and atavistic urges: “though it may seem a paradox, and a denial of all past history, gentleness and tolerance may yet prove to have the greatest survival value, when we move out into the cosmic stage” (102).

Liu Cixin’s antagonistic aliens could be seen as a subversion of the trope of friendly aliens in the works of preceding Chinese SF writers, and of the peaceful contact with alien races in Clarke’s fictions. In the postscript of *The Three-Body Problem*, Liu expresses scepticism towards representations of aliens in Chinese SF of the 1980s where

> [aliens] all appeared with a kindly demeanour, and guided the lost flock of humanity with the merciful tolerance like that of the Heavenly Father. In Jin Tao’s *Moonlight Island*, aliens comforted humanity’s wounded heart; in Tong Sizheng’s *Distant Love*, the love story between human and alien is tragically beautiful and majestic; in Zheng Wenguang’s *Mirror Image of Her Globe*, humanity’s poor morality even scared away the alien civilisation whose technological level is several orders of magnitude higher, but who’re soft-hearted and saintly! However, the saying that “people at their birth are naturally good” is doubtful even in the human world, and can only be even less applicable in the universe (Liu, *Santi* 300).

Liu uses aliens that are malevolent by human standards as an occasion to question humanity’s subjective moral sense and to speculate on the order of the universe that is governed by amoral scientific axioms, as Liu observes in his essay:

> I saw a peculiar function of science fiction: any kind of evil in the real world can find a corresponding worldbuilding in science fiction where it’s turned into the justified and even the just; vice versa, the just and the wicked, and good and evil in science fiction only have meaning in their corresponding worlds that are pictured” (Liu, “Return to Eden: Looking Back on Ten Years of Science Fiction Writing” 32).

Clarke and Liu both create alien worlds to overturn aspects of the present reality of human civilisation, whether such reality is the seemingly inevitable historical cycles of violence, or the universal tenets of human morality.

That said, extraterrestrial intelligence in Clarke’s and Liu’s novels often bear considerable resemblance to humans physically and mentally. Deliberate parallels are set up between humans and alien species to humanise the latter, and common grounds can be found among disparate cosmic civilisations that enable some degree of interaction or identification among them. In Clarke's works, the common ground are intelligent thinking minds that are able to recognise each other as such; in Liu's works, the common ground are mathematical and scientific axioms and laws of survival that are acknowledged by all intelligent beings – in Gregory Benford's words, "perhaps only in the cool corridors of mathematics could there be genuinely translatable ideas" (Benford, "Effing the Ineffable" 18).

In *Remembrance of Earth's Past*, the human character Ye Wenjie, the listener of Post 1379 from Trisolaris, and "Singer" from an advanced civilisation situated in Orion are established as counterparts who monitor activities of other cosmic civilisations. The Trisolaran listener's experience during his night shift repeats that of Ye Wenjie's ad verbum, where they both face a universe that "revealed itself to its listeners as a vast desolation" (Liu, *The Three-Body Problem* 348) and longed to detect and connect with other civilisations in the universe. In the first book of the trilogy, the Three Body online game puts human players through an immersive experience of Trisolars' harsh and unpredictable environment in a virtual simulation of the planet. The human players' enactment of the life cycles of Trisolaran civilisation humanises the alien species through the medium of human sensory experience and bridges the vast differences between the two worlds.

Furthermore, cosmic civilisations in *Remembrance of Earth's Past* exist by the same "Dark Forest" principle. "The Dark Forest" is the underlying order of cosmic civilisations predicated on two axioms: "survival is the primary need of civilization" and "civilization continuously grows and expands, but the total matter in the universe remains constant" (Liu, *The Dark Forest* 6). Based on these premises, sociologist and astronomer Luo Ji deduced that civilisations in the universe are locked in combats of survival against each other and are compelled to hide their existence for self-preservation: "in this forest, hell is other people. An eternal threat that any life that exposes its own existence will be swiftly wiped out. This is the picture of cosmic civilization" (*The Dark Forest* 521). As Will Peyton points out, while the Dark Forest theory starts from "Euclidean premises, that of the geometric relationship between stars as the basis for interaction between civilizations, the actual ethical character of this interaction is implicitly Darwinian" (Peyton 51). Just as life on Earth "brimming with a complex profusion of oceans, land, and sky" (*The Dark Forest* 233) runs according to the overarching Darwinian rule of survival, as Luo Ji recognised, life in the universe is structured by the same principle. In the third book *Death's End*, "Singer" from the constellation Orion also recognises survival as the paramount doctrine of life:

> The low-entropy entities decreased their entropy and increased their order, like columns of phosphorescence rising over the inky-dark sea. This was meaning, the highest meaning, higher than enjoyment. To maintain this meaning, low-entropy entities had to continue to exist.
>
> As for any meaning higher than that, it was pointless to think about. [...] It was even more pointless to think about the apex of the tower of meaning—maybe there wasn't an apex at all (Liu, *Death's End* 556).

It is not only the same instinct for survival, but the ability to feel emotions that allows Singer to empathise with humanity, which gives the alien character human qualities: "Singer's spirit crossed the chasm of space and time, resonated with the spirit of the broadcaster, and felt its terror and anxiety [...] For all low-entropy entities, terror guaranteed existence" (*Death's End* 557). Emotions are confirmed to be universal among life in the cosmos, and towards the end of the trilogy, the totality of cosmic civilisations is directly analogised to human society:

> Yifan said, "The universe contains multitudes. You can find any kind of 'people' and world. There are idealists like the Zero-Homers, pacifists, philanthropists, and even civilizations dedicated only to art and beauty. But they're not the mainstream; they cannot change the direction of the universe."
>
> "It's just like the world of humans." (*Death's End* 674)

Despite the humanisation of alien characters and cosmic civilisations, the enigmatic quality and estrangement effect of aliens are generated through creating foreign frames of references that evoke inhuman worlds. As can be seen in the case of Singer, "columns of phosphorescence rising over the inky-dark sea" and "the tower of meaning" suggest concepts and phenomenon beyond human knowledge and imagination.

The affinity between extraterrestrial intelligence and humanity in Clarke's works is based on the possession of minds and similar mental capacities. The civilisation in *2001: A Space Odyssey* that guides the evolution of the human race, although being not "even remotely human," are also "flesh and blood" by origin and "because, in all the galaxy, they had found nothing more precious than Mind, they encouraged its dawning everywhere" (Clarke, *2001: A Space Odyssey* 185). The gigantic mind that transcends space and time which David Bowman witnesses, and which appears as "an infinite geometrical grid of dark lines or threads" is compared to "the same labyrinthine complexity" of "network of nerve fibers" of the human brain (217). In *Childhood's End*, mankind's eventual fate of merging into the Overmind that has been "absorbing race after race as it spread across the stars" (Clarke, *Childhood's End* 199) demonstrates the potential for connectivity of all minds across cosmic civilisations. *Rendezvous with Rama* culminates in the human explorers' discovery of holographic displays of clothing and utensils of the creatures that likely built the space ark Rama, and hints at their humanoid physical appearance and biological similarity to humans. As a human character speculates, the robots aboard Rama mistake humans for Ramans because "they can't tell the difference between one oxy-eater and another" (Clarke, *Rendezvous with Rama* 194), while the Ramans' "startlingly conventional domestic utensils [...] which apart from their size would not have attracted a second glance on any terrestrial table" (196) suggest similar physiology to humans.

The cosmic immaterial mind transcending the physical world as an ultimate evolutionary goal in *Childhood's End* and *2001*, and Raman artefacts preserved as pure form in *Rendezvous with Rama* reveals a fascination in Clarke's works with the binaries of mind and body, form and substance, and pattern and material. As Clarke wrote in *Profiles of the Future: An Inquiry Into the Limits of the Possible* (1962), a way past the barrier of the limited capacity and span of the material brain is storing the disembodied pattern of information defining a human being, which can be used to recreate the original: "the way in which information is stored is of no importance; all that matters is the information itself" (Clarke, *Profiles of the Future* 210). This conversion of the material body into immaterial consciousness is essential to the evolutionary leap from the human to the alien in Clarke's novels, as the chapter will delve into later.

While aliens are humanised to a certain extent in Liu's and Clarke's works to make them conceptually graspable, both authors preserve their irreducible otherness by deliberately obscuring their presence, withholding their perspective and detailed characterisations, detaching them from direct interaction with humanity, and introducing alien concepts that subvert human cognition and frames of reference, as alien characters and civilisations inevitably become humanised as soon as the narrative allows them to establish contact with humans or reveals their thoughts and intents. Regarding aliens representing true otherness, Gregory Benford insists that they should not be symbolic or allegorical, nor designed in response to human affairs: "the alien in sf is an experience, not a statement or an answer to a question. An artistic – that is, fulfilling, multifaced, resonant – rendering of the alien is a thing in the world itself, not merely a text or a commentary on the world" ("Effing the Ineffable" 15). The technique of obfuscation and distancing the alien from human systems of knowledge in Liu's and Clarke's novels ensure that their aliens are, to some degree, a true Other that is a thing in itself and not a reflection of the human, with a strangeness that cannot be dissected, pinned down, or made familiar.

E. Michael Thron notes about the vagueness of “the Overmind” in *Childhood’s End* that “this ability to describe consequences but not to prescribe specific characteristics of the alien is at the very heart of Clarke’s speculation” (Thron 82). Some of Liu’s stories make a similar choice of focusing on the impact of extraterrestrial contact with humanity while minimising the details of the alien origin. In *Remembrance of Earth’s Past*, the Trisolarans’ concealment of their own culture from humanity is a deliberate choice on their part that implies intentions and ideologies beyond human comprehension. The Trisolarans’ tradition of building objects with mirrored exteriors “reflected a Trisolaran concept that humanity was still trying to figure out. In the words of a well-known Trisolaran saying, ‘Hiding the self through a faithful mapping of the universe is the only path into eternity’” (*The Dark Forest* 547). The Trisolarans’ philosophy of self-concealment through mirroring in their interaction with the human race not only preserves their enigmatic alien quality, but also notably contrasts with humanity’s anthropocentrism. Trisolarans only transmit to human civilisation “cultural and artistic products done in imitation of human models” (*Death’s End* 152):

> Human civilization now possessed a mirror in the universe, through which humanity gained a new understanding of itself through a novel perspective […] The characters in Trisolaran artistic creations were all human, and they were set on Earth, with no trace of alienness […] At the same time, Trisolaris itself remained shrouded in mystery, with almost no details about the world itself being transmitted […] (153).

In contrast to the Trisolarans’ choice to efface their own culture, humanity treats Trisolarans’ artistic productions as a mirror that amplifies the human self.

Another example of creating alienness through withholding information in *Remembrance of Earth’s Past* is humans’ attempted communication with a four-dimensional spaceship and inquiry of its nature:

> Who are you? Who is conversing with us?
> I am the tomb. It is the tomb speaking to you. I’m dead.
> You mean you’re a ship whose crew died? In other words, you’re the control system for the ship?

> (There was no reply to this.) (*Death's End* 295)

The oxymoron of a dead tomb that speaks establishes the object as inhuman. The spaceship's silence towards the second question obscures the true nature of the humans' converser and likely indicates the completely foreign mechanisms of the sentient system of the spaceship.

In Clarke's *Childhood's End*, the Overlords are portrayed as the middleman between humanity and the Overmind, and are therefore even more human than the human children who prepare to join the Overmind. The Overlords are similar to humans in that, although they have more intellectual power than humans, their "mental gifts" remain within "the range of human achievement" (*Childhood's End* 18). However, the Overlords' affinity to humans has its limits as aspects of their nature are untapped by and inscrutable to humans, and not even the human closest to the Overlord Karellen "had ever seen more than a few facets of the Supervisor's personality: the real Karellen was unknown and perhaps unknowable to human beings" (52). The human character George Greggson also realises that by accommodating human habits and imitating human behaviours, the Overlord inspector hides his true alienness:

> He might himself be putting on a superb act, following the performance by logic alone and with his own strange emotions completely untouched, as an anthropologist might take part in some primitive rite. The fact that he uttered the appropriate sounds, and made the expected responses, really proved nothing at all. (156-157)

Similar to the Trisolarans in Liu's trilogy, the Overlords' mirroring of humans hides their true otherness that cannot be gauged, which prevents the alien characters from becoming beings with exotic appearances but essentially human nature.

While *Rendezvous with Rama* concerns humanity's first contact with Raman civilisation, Ramans are absent from the novel and their enigmatic alienness remains even after humans' thorough exploration of the spaceship, as "the nature and the purpose of the Ramans was still utterly unknown" (*Rendezvous with Rama* 214). The Raman biological robots' indifference to humans also serves as a reminder of their alienness as well as a rebuttal of anthropocentrism. The human character Jimmy's first encounter with the robots is anticlimactic:

> Ignoring Jimmy completely, it walked straight past him and headed purposefully into the south. Feeling extremely foolish, the acting representative of Homo sapiens watched his First Contact stride away across the Raman plain, totally indifferent to his presence. (136-137)

Jimmy decides that the robots are unintelligent since "an entity – robot or animal which could ignore a human being could not be very bright" (134). However, Jimmy's homocentric assessment is disproven as the robots display considerable intelligence through their inquisitive and methodical behaviours; the robots' indifference to humans is more an indication of their totally alien purposes and priorities.

Both Liu and Clarke also add to the alien quality of their stories by introducing alien entities that subvert humans' usual cognitive frame of reference. In humans' eyes, the droplet sent to Earth by the Trisolarans has a "pure beauty" (*The Dark Forest* 429) and is "imbued with a graceful dynamism," as if "a crystallization of all the love in the universe" (430). Humans believe that "beauty is always paired with good, so […] this object would fall on the good side" (430). However, the droplet proves to be a deadly weapon that destroyed humanity's entire space fleet. Conversely, while the black monolith in *2001* gives Floyd a "sense of foreboding" (*2001: A Space Odyssey* 76) and reminds him "somewhat ominously, of a giant tombstone" (68) and of Pandora's Box, and seems the "very crystallization of night" (76), it turns out to be the gateway to humanity's evolution and rebirth. What differs Liu from Clarke is that, while Liu provides rational and concrete explanations for the mechanisms of such entities that alienate humans from their common experience, Clarke is ambiguous and leaves room for speculation and mysticism. To quote Mingwei Song's comparison of Clarke and Liu:

> […] Clarke's sense of the sublime sustains Kantian transcendentalism; the sublime takes precedence over any concrete experience of the senses and cannot be expressed in terms of experience or words. On this point, Liu clearly differs. […] The almost

> sacred language, perhaps reminiscent of the religious reason of the Kantian tradition, is very rarely found in Liu Cixin. He will not stop at the sacred moment. He will keep exploring the unknown, sparing no effort and trying every means—even lowering the dimensions of the sacred to make it visible and explicable. (Song, *Fear of Seeing: A Poetics of Chinese Science Fiction* 137)

Clarke's and Liu's contrasting sense of the sublime is revealing of their diverging ideas of the relationship between human scientific cognition and the alien Other. For Clarke, the truly alien is beyond the ken of scientific enquiry, its nature unknowable for humans. As Thron remarks on *Childhood's End*, "the alien is the mystical intrusion upon the scientific and mundane world of linear Western evolution" (Thron 76). For Liu, however, the alien is not forbidden knowledge, and can be deciphered as long as the science is sufficiently advanced. I will further discuss the relationship between science and the alien in the final section of the chapter.

2. The Human and the Inhuman

Both Clarke and Liu see humanity's relocation from Earth to space as the catalyst for the fundamental transformation of the human into the inhuman, where humanity becomes equally, if not more alien than extraterrestrial intelligence. Clarke and Liu start from some common premises when dealing with this subject: they are both concerned with the theme of childhood, which establishes the human as a stage of civilisational childhood to be outgrown when the human transforms into the inhuman; and they both believe in the inherent adaptability and malleability of human nature, as Clarke wrote: "perhaps the only characteristic that distinguishes humans from the other animals is our infinite flexibility – and our ability to take for granted changes that once seemed inconceivable" (Clarke, "1992: What is to be done?" 392). Similarly, Liu stated in his essay collection *Liu Cixin on Science Fiction* (*Liu Cixin tan kehuan*, 2014) that "the very notion of human nature is vague. Do you really believe that there is a constant 'humanity' from primitive times to the present? What is the unchanging characteristic of human nature? I have not found it" (Liu, *Liu Cixin on Science Fiction* 38).

However, Clarke envisions human metamorphosis into the inhuman as evolutionary progress, whereas Liu depicts humans in space discarding their humanity as an inevitable sacrifice and moral degradation. This discrepancy in their characterisation of the inhuman is predicated on the fact that Clarke mainly treats "human" as a biological concept, in the sense that the transformation into the inhuman is characterised by liberation from human biological limitations, but Liu treats "human" as a moral concept and defines human nature by the moral values that the human race upholds.

In *Childhood's End* and *2001* where humans evolve to join the Overmind or become Star-Child, the trajectory of humanity's evolution is defined by its underlying humanistic ideals and religious undertones. To quote Rosi Braidotti, the humanistic doctrine "combines the biological, discursive and moral expansion of human capabilities into an idea of teleologically ordained, rational progress;" it asserts "the almost boundless capacity of humans to pursue their individual and collective perfectibility" (Braidotti 13). In line with the humanistic view of progress, humans in Clarke's novels evolve to realise their innate potential and transform into the perfect beings they are meant to be; they achieve "individual and collective perfectibility" by discarding their flawed and fragile organic bodies to become immortal consciousnesses that transcend space and time. In *2001*, the ape "unmistakably held in his genes the promise of humanity" (*2001: A Space Odyssey* 10) just as the human astronaut holds within him the promise to become the Star-Child; in *Childhood's End*, humans have always possessed the untapped potential to transcend their current stage of evolution to become an immortal and unembodied unitary consciousness, which is attested by the fact that "all through history there have been people with inexplicable powers which seemed to transcend space and time" (*Childhood's End* 168).

In Clarke's novels, humanity's transformation into the inhuman is teleological and predestined by nature, proving that the human inherently contains the inhuman. As E. Michael

Thron remarks, "we recognize at the end of *2001* that the alien resides within the human mind, undiscovered and in a fourth dimension" (Thron 76). "The alien resides within the human mind" in the sense that the human transforms into the inhuman by freeing mind from the biological limitations of the human body. The Cartesian dualism is present throughout Clarke's fictions and non-fictional writings, as he wrote in *Profiles of the Future*:

> The body is the vehicle of the brain, and the brain is the seat of the mind. In the past, this triad has been inseparable, but it will not always be so [...] In adolescence we leave childhood behind; one day there may be a second and more portentous adolescence, when we bid farewell to the flesh (*Profiles of the Future* 208-209).

In *2001*, the cosmic mind that David Bowman witnesses and eventually becomes a counterpart of is such an instance of transcending the human:

> [...] while around him stretched, in all directions, an infinite geometrical grid of dark lines or threads, along which moved tiny nodes of light - some slowly, some at dazzling speed. Once he had peered through a microscope at a cross-section of a human brain, and in its network of nerve fibers had glimpsed the same labyrinthine complexity. But that had been dead and static, whereas this transcended life itself (*2001: A Space Odyssey* 216-217).

The seeming paradox of life being "dead and static" suggests the acute limitations of human physiology. In this case, "the human" stands for the physical, mortal, and finite, which will be overcome and left behind in evolution.

While humans in Clarke's novels have the inherent potential to evolve into the inhuman, their evolution is characterised by passivity and lack of volition. In *2001*, the apes are hypnotised by the crystal and compelled to follow its instructions: "Moon-Watcher began to tremble uncontrollably; he felt as if his brain would burst, and wanted to turn away his eyes. But that remorseless mental control would not relax its grip; he was compelled to follow the lesson to the end, though all his instincts revolted against it" (*2001: A Space Odyssey* 22). The ape has no option but to evolve, just as humanity in *Childhood's End* has no option but to follow the path set for it and become part of the Overmind, as the Overlord Stormgren tells the human protestors: “You may annoy him, you may even delay the achievement of his aims, but it will make no difference in the end” (*Childhood’s End* 36). David N. Samuelson connects human passivity in *Childhood’s End* to the religious sentiment of the novel:

> The unknown bulks extremely large, and the attitude of the characters is stereotyped, not in the heroic mold, whose calculated respect for size and power allows for action, but in the passive mold, whose awe and reverence we normally term “religious.” Man the Creator, acting, progressing, continually making changes in his environment, whom I would consider the ideal (if not the most common) protagonist of SF, gives way to man the Creature, full of fear and wonder and more than willing to follow orders when an encounter with an incalculable unknown power forces him to admit how small he is and how little he knows (Samuelson 206).

The passive inaction and incomprehension in the face of the unknowable akin to a religious sentiment exalts the unknowable alien Other but diminishes the anthropocentric ideas of human autonomy and willpower. When humanity progresses to the next evolutionary stage, none of the human notions such as liberty, independence, and self-determination – which people resent the Overlords for stripping them of – will be relevant and meaningful as humans transform into alien entities beyond human comprehension**.**

Despite the mystical metamorphosis of the human in *Childhood’s End* and 2001 being well-received by readers and audiences of the *2001* film (Clarke, *Report on Planet Three* 222), John Hollow argues that these two novels are not typical of Clarke:

> There are Others, and they have had a hand in our lives. What could be more staggering? We do not have to step into nearby phone booths and reveal ourselves as secret Star-Children all along. That sort of idea Clarke seems to have put away with *Childhood's End*; but Kubrick's demand for some ultimate answer, for some way of avoiding the consequences of the Doomsday Machine, seems to have forced Clarke to borrow from *Childhood's End* to complete *2001* (Hollow, “*2001* in Perspective: The Fiction of Arthur C. Clarke” 127-128).

Hollow believes that *Rendezvous with Rama* is more characteristic of Clarke where “we get a brief glimpse, but no ultimate answers” (128). While humanity progresses towards clear evolutionary destinations with the aid of omnipotent extraterrstrials in *Childhood’s End* and

2001, *Rendezvous with Rama* characterises humans as largely passive and confused spectators who receive no enlightenment from the alien visitor. However, the very fact that "the ultimate answer" Clarke reaches at in his two novels is to reveal humanity as "secret Star-Children all along" is telling evidence not only of his hopes in the innate potentials of the human, but also of his welcoming attitude towards the inhuman that will inevitably supersede the human. To quote from Clarke's *Profiles of the Future*: "No individual exists forever; why should we expect our species to be immortal? Man, said Nietzsche, is a rope stretched between the animal and the superhuman – a rope across the abyss. That will be a noble purpose to have served" (*Profiles of the Future* 227).

Unlike Clarke who sees the transformation of the human into the inhuman as a process of discarding human species' biological shortcomings, Liu sees such transformation in moral and social terms where human values and mindsets are transformed into "inhuman" ones. This disparity between Clarke and Liu regarding their treatment of the binary of human and inhuman is reflected in the difference between humanity's perception of the anomalous Hermians in *Rendezvous with Rama*, and Earth civilization's reception of the equally anomalous Starship civilisation in Liu's trilogy. Hermians in *Rendezvous with Rama* are human inhabitants of Mercury, who become permanently exiled from Earth due to Mercury's low gravity. As a result of the harsh natural environment they inhabit, Hermians develop significantly different mentality from people on Earth: their culture is severe and spartan, and they are extremely practical and have fewer moral scruples. Starship civilisation in Liu's story possesses a similar cultural mindset since it is forever cut off from Earth and needs to survive in the unforgiving outer space. However, while Hermians are merely regarded as eccentric and peculiar by people on Earth in *Rendezvous with Rama*, members of Starship civilisation are denounced as inhuman due to their amorality: what Starship civilisation sees as practical measures to survive, humans on Earth deem to be evil. Liu's story delimits the human not by biological properties, but by social values and moral creeds.

In his essay "Return to Eden" (*Chongfan yidianyuan*), Liu writes that an aim of *The Dark Forest* is to "re-examine the present values and moral systems that humanity has against the backdrop of the great catastrophe that leads to the utter destruction of human civilisation, and attempt to describe an amoral universe constituted by countless civilisations" (Liu, "Return to Eden" 32). Liu also mentioned in the postscript of the Chinese edition of *The Three-Body Problem* that his original purpose of writing this series is to explore how human civilisation, which possesses morality, could survive in an amoral universe (*Santi* 301). Despite Ye Wenjie's conviction of humans' intrinsic immorality which essentially sets off the entire story, *Remembrance of Earth's Past* equates the human with the moral, and cosmic society at large with the amoral concerns of survival, thus setting up the dichotomy between the brutal necessity of survival and moral values through which human nature is preserved. As Mingwei Song remarks in "After 1989: The New Wave of Chinese Science Fiction," Liu's "concerns with the fate of humanity are stuck in a deadlock conflict between development and morality, or universe (as a moral vacuum for infinite development of intelligence) and humanity" (Song, "After 1989" 11).

In Liu's trilogy, morality is represented by humanistic ideals as much as human evolution in Clarke's novels follows the principles of humanism. From the perspective of Trisolarans, humanism is a hallmark of Earth civilisation and represents what the Trisolaran society is deprived of: individualism, creative freedom, equality, personal fulfilment, universal human rights among others. As the Trisolaran "Listener" protested, humanistic ideals have to make way for survival in Trisolaran civilisation:

> "[…] But, Princeps, please examine our lives: Everything is devoted to survival. To permit the survival of the civilization as a whole, there is almost no respect for the

> individual. Someone who can no longer work is put to death. Trisolaran society exists under a state of extreme authoritarianism. The law has only two outcomes: The guilty are put to death, and the not guilty are released. For me, the most intolerable aspects are the spiritual monotony and desiccation. Anything that can lead to spiritual weakness is declared evil. We have no literature, no art, no pursuit of beauty and enjoyment. We cannot even speak of love" (*The Three-Body Problem* 353).

Under such social circumstances, humanism becomes greatly appealing to the Trisolaran public and makes the Trisolaran commander worried that humanism will lead Trisolarans astray, meaning that it will make them prioritise moral values before the need for survival and refuse to cross the ethical bottom line for the sake of survival. In contrast, humanistic values are wholeheartedly embraced by Earth civilisation's "humanitarian age following the Second Renaissance" (*The Dark Forest* 420) where "humanism comes first, and perpetuating civilization comes second" (394), and "the life and civilization of every race are accorded the greatest respect" (420).

Liu frames the liberal humanism of Earth and Trisolarans' social Darwinian amoralism as opposing civilisational outlooks. In "Star-Plucker and Wallfacer: Liu Cixin's Science Fiction World" (*Tanxing zhe yu mianbi zhe: Liu Cixin de kehuan shijie*), Mingwei Song identifies two diverging modes of interaction between civilisations with clashing worldviews: the "Star-Plucker" and the "Wallfacer." For Song, the "Star-Plucker" symbolises "an idealistic world or impression constructed purely with physical laws and humanistic beliefs" (Song, "Star-Plucker and Wallfacer" 23) — it puts humans in contact with a sublime cosmic Other that inspires transcendental awe in humanity but leaves its humanistic faith in innate human worth intact and does not erode human values. The "Wallfacer" embodies "the kind of realism or cynicism that perceives survival as the vital principle of everything" (23) — its alien and dystopic laws engulf the human world, destroy human value systems, and force humanity to capitulate to the rules of the Other and throw itself into the cosmic game of survival of the fittest. As Song explains "Star-Plucker" and "Wallfacer":

> The former depicts the universe and humanity as two sides who cognize each other, and retains for humans a space of subjectivity with dignity; the latter, however, lets the whole universe topple over our world, and a crisis forms in the sense that subjectivity is lost, the moral presence is dragged into the amoral competition for survival and has to succumb to the external rules of the game. (24)

In *Remembrance of Earth's Past*, humanity finds itself in a universe of Wallfacers, and people who move into space are "the moral presence [...] dragged into the amoral competition for survival," who have to surrender to the laws of the Dark Forest. Unlike in Clarke's novels, space humans in Liu's story undergo no fundamental biological transformation but relinquish the humanistic values of Earth and adopt the survivalist mentality necessary in space; for this reason, the space exiles are disowned by Earth civilisation and deemed as inhuman. After the human space fleet is almost annihilated by the Trisolaran probe "droplet," the remaining spaceships flee into deep space but end up killing each other's crews to seize one another's supplies due to the severe scarcity of resources. To ensure collective survival in the harsh and unpredictable environment of space, dead crew members are consumed as food so that nothing is wasted, and a totalitarian society is quickly established, as lieutenant commander Schneider aboard the Bronze Age ship attested: "[…] when humans are lost in space, it takes only five minutes to reach totalitarianism" (*Death's End* 125). Humanity's desperate venture into space is marked by the total abandonment of the humanistic values of Earth and social regression, which is seen as a grievous sacrifice and degradation of human nature by people on Earth and in space alike, as Captain Neil Scott, a crew member of *Bronze Age* warned:

> "Life reached an evolutionary milestone when it climbed onto land from the ocean, but those first fish that climbed onto land ceased to be fish. Similarly, when humans truly enter space and are freed from the Earth, they cease to be human. So, to all of you I say this: When you think about heading into outer space without looking back, please reconsider. The cost you must pay is far greater than you could imagine" (*Death's End* 127).

The language of biological evolution is applied to humans' moral and social transformation to signify the cataclysmic change, and humans in space "cease to be human" in the sense that they fully embrace the Dark Forest state of the universe where survival is placed before every other concern, and other societies are treated as eternal threats to be eliminated – an amoral state of existence that Earth civilisation is late and reluctant to recognise. Mingwei Song compares Earth civilization's moral outlook being toppled by the Dark Forest to the intrusion of Western ideas on late 19th century Chinese society: "the 'dark forest' principle reminds one of the 'social Darwinism' that China was forced to accept after it was embroiled in the 'social changes unprecedented in thousands of years[1]' and which modern intellectuals viewed as the laws of natural evolution" ("Star-Plucker and Wallfacer" 24). Song also pointed out social Darwinism's role in the "destruction of traditional Chinese moral values" (24), which is paralleled by the Dark Forest's repudiation of human morality. Just as social Darwinism is the Other that intruded on the Chinese intellectual scene, the Dark Forest and by extension, human exiles in space who are fully integrated into the Dark Forest are the Other to humanity on Earth.

The starship crews who make space their permanent home are accused of being inhuman also because they are no longer invested in humanity's survival on Earth, while the moral system of Earth civilisation employed to judge them is anthropocentric. To quote from *The Dark Forest*:

> Recent events had proved that when the spiritual bonds with Earth were snapped, people in space suffered total spiritual alienation. So even if escape were successful, what survived would no longer be human civilization, but some other dark and evil thing. And like Trisolaris, that thing would be the antithesis of human civilization and an enemy of it. It had even been given a name: Negacivilization (500).

The opposition between "human civilization" and "some other dark and evil thing" implies that the human civilisation is considered just in itself, and therefore its antithesis is evil. When the Trisolaran crisis struck, the prevalent mindset among humanity is described as the belief that "regardless of how dark the world seemed, ultimate justice was still present in some unseen place" (*The Dark Forest* 533) – here "ultimate justice" would refer to the ultimate preservation of the human race. Will Peyton remarks that "Liu presents us with [...] an ultimate moral rule to say that, at the very least, existence is right [...] In other words, Something is more moral than Nothing, however much emergent violence and immorality the struggle between the two might produce" (Peyton 52). The demarcation between the human and the inhuman according to ethical values and the negative moral connotation of the inhuman in Liu's trilogy imply that the ultimate moral rule here is not simply "existence is right," but "*human* existence is right." In this sense, the relegation of space exiles alienated from Earth to the category of the "inhuman" suggests the homocentric nature of morality, in which case to disavow human morality is to disavow anthropocentrism.

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[1] The expression "social changes unprecedented in thousands of years" was originally used by the Chinese politician and intellectual Liang Qichao to describe the social and political upheaval in late 19th century China.

3. Science, Alien, and Anthropocentrism

Both Clarke and Liu explore the relationship between science, anthropocentrism, and the alien in their works, albeit from contrasting angles depending on whether science is more closely associated with the human or the alien perspective. In Clarke's novels, science and technology are representative of the anthropocentric perspective as opposed to the unfathomable alien; science signifies the known and familiar human territory to be left behind when facing the transcendental and unknowable alien. Liu's *Remembrance of Earth's Past*, on the other hand, decouples science and technology from homocentric moral frameworks and posits the universal system of science as a way to understand the cosmos objectively from outside the anthropocentric perspective.

In *Remembrance of Earth's Past*, the human characters' preconceived notions about the moral implications of advanced science and technology are repeatedly proven wrong, while the narrative detaches alien science and technology and a scientific view of the cosmos from human moral judgements. For Ye Wenjie, science represents order, rationality, and balance, and the antithesis of the madness, confusion, and disorder embodied by the Cultural Revolution. After the end of the Cultural Revolution, Ye Wenjie questioned herself: "was this the end of the madness? Were science and rationality really coming back?" (*The Three-Body Problem* 297) For Ye Wenjie, the return of science signifies restored hope in rational and orderly progress; by the same principle, the advanced science of the Trisolarans could, in the words of the Adventists' plan of action, "with Its power, forcefully watch over us and transform us, so as to create a brand-new, perfect human civilization" (*The Three-Body Problem* 253).

Ye Wenjie's view on the moral significance of science against the backdrop of the Cultural Revolution could be understood in the context of Liu's view of SF's connection to history, which he explained in the postscript of *Three-Body Problem*:

> The difference between SF and other fantasy literature is that it's still tethered to reality by a thin thread [...] Therefore, I've always believed that good SF should render the craziest and most ethereal imaginations to be as real as news reports. Remembrance of the past is always real, and I hope that my novel could be written to be like the authentic accounts of the past by historians [...] (*Santi* 302)

Three-Body Problem remains "tethered to reality" and grounds itself in history not only by directly correlating Ye Wenjie's decision to contact the Trisolarans with her experience during the Cultural Revolution, but by associating Ye Wenjie's belief in science's ability to civilise, transform, and perfect society with the larger historical backdrop of early twentieth century China. The historical context of Ye's understanding of the relationship between a society's level of scientific development and its degree of moral sophistication is suggested by the following conversation:

> INTERROGATOR: Do you understand Trisolaran civilization?
>
> YE WENJIE: No. We received only very limited information. No one has real, detailed knowledge of Trisolaran civilization except Mike Evans and other core members of the Adventists who intercepted their messages.

> INTERROGATOR: Then why do you have such hope for it, thinking that it can reform and perfect human society?
>
> YE: If they can cross the distance between the stars to come to our world, their science must have developed to a very advanced stage. A society with such advanced science must also have more advanced moral standards.
>
> INTERROGATOR: Do you think this conclusion you drew is scientific?
>
> YE:…
>
> INTERROGATOR: Let me presume to guess: Your father was deeply influenced by your grandfather's belief that only science could save China. And you were deeply influenced by your father. (*The Three-Body Problem* 345)

The "belief that only science could save China" refers to the movement called "*kexue jiuguo*" (saving the nation with science) in late 19th and early 20th century China. As Zhang Jian summarises, "*kexue jiuguo*" is

> This trend to study Western science and technology was encapsulated by Wei Yuan as "studying the advanced technologies of the West to counter the West" (*shi yi changji yi zhiyi*) […] Those who had a big influence on the technological development of early modern China […] believed that science and technology are the only way to empower the country, strengthen the military, and fight back foreign invasions, and the nation can become prosperous and strong only when China's science and technology are fully developed. (Zhang 29)

The editorial of the first issue of the Chinese scientific journal *Science* (*Kexue*), which was published in 1915 and spearheaded the "*kexue jiuguo*" movement, put forward four aspects in which science could benefit the nation: growth of material wealth, prolonging human life, enlightening the mind, and improving social morality. The editorial argued that science influences morality vicariously by influencing the material world, suggesting that an environment of material abundance fosters ethical behaviour, and that people could better distinguish right and wrong through learning natural, social, and economic sciences.

While humanity's efforts to acquire Trisolaran technology and scientific knowledge to counter the Trisolaran invasion is an interplanetary version of Wei Yuan's "studying the advanced technologies of the West to counter the West," the belief that advanced science results in high moral standards, which is promoted by the "*kexue jiuguo*" movement, is negated by Trisolaran civilisation's social organisation and ideologies that are opposed to humanity's moral values. However, the story does not seek to represent the Trisolarans as morally reprehensible; their measures to ensure the survival of their civilisation is framed as a rational necessity that needs not be subjected to human moral verdict. As Luo Ji, the human discoverer of the universe's Dark Forest state remarks: "[…] their (the Trisolarans') approach to humans is a rational choice. It's the responsible thing to do for the survival of their species, and has nothing to do with good or evil" (*The Dark Forest* 173). Like the advocates of "*kexue jiuguo*" movement, Liu's story proposes that science is pivotal to a civilisation's survival in the Dark Forest, but consciously extricates science from any moral weight attached to it by the doctrines of "*kexue jiuguo*." In another example, any moral significance that the human public attribute to the mathematical perfection of the Trisolaran droplet turns out to be false:

> The mercury droplet was just so beautiful, so simple in shape yet masterfully styled, with each point on its surface in exactly the right place […] Not even in Plato's Republic was there such a perfect shape: straighter than the straightest line, more circular than a perfect circle […] Beauty is always paired with good, so if there really existed a demarcation between good and evil in the universe, this object would fall on the good side. (*The Dark Forest* 430)

The human assumption that "beauty is always paired with good" and the wishful belief that the droplet is an envoy of peace due to its harmless appearance are disproved by the droplet's true nature as a lethal weapon, and as the physicist Ding Yi realizes, the droplet's purpose not only does not align with any human moral conception, but shows a complete disregard for the human perspective:

> "Who knows? Maybe it really is just a messenger. But it's here to give humanity a different message," Ding Yi said, turning his gaze away from the droplet.
>
> "What?"
>
> "If I destroy you, what business is it of yours?" (*The Dark Forest* 446)

Remembrance of Earth's Past separates science and technology from the homocentric moral framework, and views scientific rationality as a means to move beyond anthropocentrism to connect with the alien and to understand the state of cosmic society without such understanding being skewed by the subjective human-centered perspective. As Liu argues in "Beyond Narcissism: What Science Fiction Can Offer Literature," conventional literature is "narcissistic" because it only concerns the internal affairs of human society, whereas SF contributes to "getting past this narcissism" by focusing on "humanity's relationship with nature, and as such it is capable of giving literature an opportunity to once more broaden its boundaries" (Liu, "Beyond Narcissism" 27). By employing the scientific method, humanity trades the internal examination of the human for an outward exploration of the inhuman and the order of the natural world. Will Peyton observes that "his (Liu Cixin's) aim is to bring humanism back to a consideration of scientific principles, to an immediate consideration of the objective world of biological conditioning, the geometrical layout of space and of fundamental principles, as a way of reimagining humanity's place and role in the universe" (Peyton 51). The reimagination of humanity's place in the universe is principally achieved through Luo Ji's discovery of the Dark Forest state of cosmic civilisations. To quote Peyton, "the 'Dark Forest' is not the product of emergent and unpredictable socio-political phenomena but rather a foundational reality produced by the physical form of spacetime itself" (Peyton 36). The Dark Forest theory has a mathematical premise, with its conclusions deducted from self-evident axioms. By filtering out "the factors of chaos and randomness in the complex makeups" of social-political phenomena (*The Dark Fores*t 5), the Dark Forest theory achieves a view of the cosmos of mathematical clarity and immutability. In Luo Ji's epiphanic visions of the Dark Forest, the stars become "clear mathematical configuration" while "the entire universe froze, all motion stopped, and everything from stars down to atoms entered a state of rest" (*The Dark Forest* 234). Liu's scientific and geometrical reimagination of humanity's place in the universe repositions human civilisation from the exceptional centre to one of countless mathematical nodes in the web of cosmic civilisations subject to the same laws of survival.

Remembrance of Earth's Past recognises the limitation and fallibility of human science, but also considers science to be universal to intelligent life in the universe. Human science proves to be still primitive and "the facts we see under the guidance of our science and reason may not be the true, objective facts" (*The Dark Forest* 130). However, the story suggests that objective scientific truths and physical laws do exist independent of human perception, in Ding Yi's words:

> One day, perhaps, humanity—or maybe someone else—will explore the laws so thoroughly that they'll be able to alter not only their own reality, but perhaps the entire universe [...] But so what? The laws still won't have changed. Yes, she'll still be there, the one unchanging presence" (*The Dark Forest* 441).

A civilisation's mastery of objective scientific truths is the metric by which its level of development is judged, while science and mathematics provide the universal language through which cosmic civilisations could communicate. Humanity is considered to be utterly insignificant and primitive by the Trisolarans because of its scientific inability to exploit the micro dimensions, and for that reason, is considered as trivial bugs by the Trisolarans. Trisolarans' superiority to humans and, comparably, humans' superiority to bugs are defined by the technological gaps between the species, and the worth and significance of a civilisation is determined by the extent to which it achieves mastery of science.

Science and mathematics are the universal basis of communication between cosmic civilisations in *Remembrance of Earth's Past*. In the declassified document of the Red Coast project which maps out the probability of establishing contact with extraterrestrial life, a "self-interpreting code system" is designed "using universal, basic mathematical and physical laws" to "construct an elemental linguistic code that can be understood by any civilization that has mastered basic algebra, Euclidean geometry, and the laws of classical mechanics" (*The Three-*

Body Problem 170), which enables Ye Wenjie to communicate with the Trisolarans, and which later even allows humans to converse with a four-dimensional civilisation. Whether it is communicating with extraterrestrial intelligence, or deciphering the grand scheme of cosmic civilisations, or reconstructing the original appearance of the ten-dimensional universe, science and mathematics are necessary tools in the story to move beyond subjective human perception, transcend the anthropocentric worldview, and arrive at truths about life in the universe. To quote Gregory Benford, who shares Liu's belief in mathematics' universal validity, "by expanding our categories and using the most 'universal' of descriptions (and languages – that is, mathematics), we can make of ourselves something greater. We can, in other words, ingest the alien" (Benford, "Aliens and Knowability" 62-63).

In contrast to *Remembrance of Earth's Past*, science is bound up with the anthropocentric perspective in Clarke's works. Technology and scientific methods bear the stamp of humanity and its parochial causes as opposed to the infinite possibilities of the alien, and fail to facilitate meaningful interaction with the truly alien. In "Effing the Ineffable," Gregory Benford observes that "often the science in sf represents knowledge – exploring and controlling and semi-safe. Aliens balance this desire for certainty with the irreducible unknown" ("Effing the Ineffable" 13). This sentiment is expressed in *Childhood's End* by George Greggson, who sees Earth as "some secluded playground" nestled in "the little circle of light cast by Science," "protected from the fierce realities of the outer world" and "whatever lurked in the unknown darkness" (*Childhood's End* 144). Here science is an extension of the human, a self-defense mechanism to keep out the unknown and the alien. At the beginning of the story, one nation attacks the Overlord's ship with atomic missiles, but the alien spaceship is utterly unharmed and unperturbed, while the missile disappears. The Overlord "Karellen took no action against those responsible, or even indicated that he had known of the attack. He ignored them contemptuously, leaving them to worry over a vengeance that never came" (11). Science takes the form of ineffectual human violence which not only cannot connect with, but fails to deter the superior alien civilisation.

Science is the familiar and controllable approach that people fall back on when confronting and making sense of the alien, and thus represents the homocentric perspective. In *Rendezvous with Rama*, Commander Norton stops a crew member from dissecting the alien specimen because "the claims of science had a lower priority than those of space-diplomacy" (*Rendezvous with Rama* 157). What the human explorer finds to be of scientific value is an act of uninvited technological barbarism for the alien. The violence and aggression of human science intrudes on the alien yet ultimately fails to fathom the alien, as Commander Norton reflects on the failure of the scientific investigation in Rama at the end of the novel: "But he had also failed. One might speculate endlessly, but the nature and the purpose of the Ramans was still utterly unknown" (214).

Written during the Cold War in the shadow of the fear of the atomic bomb, *Childhood's End* and *2001: A Space Odyssey* deal with the violent and self-destructive potential of human technology, as in both novels humanity is on the verge of nuclear annihilation before being saved by extraterrestrial intervention. Clarke remarks in his essay "1992: What is to be done?" that "high-tech weapon systems are the crutches of impotent nations; nukes are just the decorative chromium plating" - these destructive technologies are to be thrown away so that mankind can "walk proudly into a decent future" (Clarke, "1992: What is to be done?" 391). In the same vein, Clarke's novels consider human technology to be redundant when humanity moves beyond the present stage to embrace and assimilate the alien, as John Huntington argues:

> At the end of "The Sentinel," the story that forms the basis for 2001, this is made explicit: higher beings, the narrator tells us, would not be "concerned with races still struggling up from savagery. They would be interested in our civilization only if we proved our fitness to survive – by crossing space and so escaping from the Earth, our cradle." Technology does not itself lead anywhere important; it merely proves "our

> fitness to survive.” Thus, at the end of 2001, when Bowman reaches Saturn, he simply leaves behind the fancy machines that have occupied his and our attention for the major part of the novel (Huntington 213).

“Technology does not itself lead anywhere important” in Clarke’s novels because Clarke is acutely aware of the limits of the technological potentials of our current material culture; technology may help us escape Earth, our cradle, but could not conquer space, argued Clarke:

> Men will never conquer space [...] it expresses a truth which our forefathers knew, which we have forgotten – and which our descendants must learn again, in heartbreak and loneliness [...] We have abolished space here on the little Earth; we can never abolish the space that yawns between the stars [...] we are face to face with immensity and must accept its grandeur and terror, its inspiring possibilities and its dreadful restraints. From a world that has become too small, we are moving out into one that will be forever too large, whose frontiers will recede from us always more swiftly than we can reach out toward them (*Profiles of the Future* 113-114).

This immeasurable difficulty of overcoming the confines of space and time is expressed in *Childhood’s End* when the Overlords inform humans that to discard materiality and join the immortal and infinite Overmind, one has to cross an abyss where “there is only one bridge. Few races, unaided, have ever found it,” and humanity “would never have found the bridge” without guidance (*Childhood’s End* 175). Similarly, in *2001*, an abyss separates the material confines of human science, its “fancy machines” that play no part in the grand finale, from the aliens who are “creatures of radiation, free at last from the tyranny of matter” and “beyond the reach of time,” and who “could rove at will among the stars, and sink like a subtle mist through the very interstices of space” (*2001: A Space Odyssey* 186).

Science and technology stand for human limitation in Clarke’s novels, and are deprived of any significance in humanity’s encounter with the alien because it is inadequate in comprehending the alien. In *Childhood’s End*, the Overlord Karellen explains in a broadcast to humanity that the Overmind is beyond human cognition and the frame of human science:

> “You have no words, no conceptions, for many of the things I wish to tell you – and our own knowledge of them is also sadly imperfect […] There are powers of the mind,

> and powers beyond the mind, which your science could never have brought within its framework without shattering it entirely" (*Childhood's End* 175).

While human science is incapable of tackling the Overmind, people are able to tap into its power through paranormal events such as séance, telepathy, and clairvoyance. It should be noted that *Childhood's End* places even the seemingly irrational and supernatural within the borders of rationality, as the Overlord Rashaverak confirms to George Greggson that "there's a rational explanation for everything" (166). As David N. Samuelson remarks in "Childhood's End: A Median Stage of Adolescence?", "[…] the theme of alien contact is expanded to include something close enough to the infinite, eternal, and unknowable that it could be called God; yet even this being, called the Overmind, is rationalized, and assumed to be subject to natural laws" (Samuelson 197). The Overlords themselves disapprove of supernatural beliefs and theories and are portrayed as paragons of reason; from the beginning of the novel, they are set up as "the symbol of a science Man could not hope to match for centuries" (10).

However, as I discussed in the first section of the chapter, the Overlords have an unignorable human side and their intellectual abilities are similar to humans', which gives a human touch to their science and reason; whereas the human children who evolve to join the Overmind lose their humanity entirely to become beings that are inscrutably alien, as is described in the novel:

> Then Jan saw their faces. He swallowed hard, and forced himself not to turn away. They were emptier than the faces of the dead, for even a corpse has some record carved by Time's chisel upon its features, to speak when the lips themselves are dumb. There was no more emotion or feeling here than in the face of a snake or an insect. The Overlords themselves were more human than this (*Childhood's End* 196).

There is a timeless quality to the children waiting to join the Overmind as "Time's chisel" leaves no mark on them. This timelessness of the alien is antithetical to the human which is subject to time, and to science which is inescapably concerned with temporal binaries, as E. Michael Thron observes:

> Scientific method depends upon the duality between past and present in order to predict the future – so many of this or that have occurred, are occurring, and hence, are likely to occur again, etc., etc. The alien world does not depend upon past and present and future because the alien world is not dual but unitary; all is one in the Overmind and the children overcome space, time, and the three-dimensional world. (Thron 78)

In *2001*, the ape that has no conception of time acquires a past and a future when it evolves to become human, only to unlearn and abolish time again when the human transforms into the alien Star-Child: "for he had left behind the time scales of his human origin; now, as he contemplated that band of starless night, he knew his first intimations of the Eternity that yawned before him" (*2001: A Space Odyssey* 221). The spatially and temporally limitless unity of the alien cannot be contained by the dualisms of human science, nor can its mysticism be deciphered by human rationality. To quote David N. Samuelson's paper on *Childhood's End*:

> If the reader is thoroughly indoctrinated in the simple paradigms of ostensibly neutral but implicitly scientistic popular SF of Verne-Gernsback-Campbell tradition [...] he can be expected to take the side of reason, science, and Western man, with perhaps a slight anxiety over their alliance with Devilish aliens. But the reception *Childhood's End* received from mainstream reviewers suggests quite a different reading; for them the eschatological theme was what made the book worthwhile, not the Overlords' continuation of man's tradition of systematic inquiry, or the successive approaches to technological utopia. They, and many readers since, have sensed in Clarke a streak of sentimental mysticism, which makes some of his SF quite congenial to their own views, unconstrained by the scientist's straitjackets of skepticism, proof, and unbending rules. For all of Clarke's reputation for conservative extrapolation, quite justified by much of his fiction as well as his nonfiction, he apparently pushes more buttons when he strays from confident expectation of technological change into what may be termed watered-down theological speculation (Samuelson 201).

If anything, Clarke's novels are against the scientistic attitude that, to quote Frederich Hayek, is "a very prejudiced approach which, before it has considered its subject, claims to know what is the most appropriate way of investigating it" (Hayek 80). The scientific expedition on Rama leads to no definitive conclusions about the alien spaceship, and as the expedition members felt, "the mystery of Rama was steadily growing; the more they discovered about it, the less they understood" (*Rendezvous with Rama* 149). Neither is the scientific ingenuity of humans effective or relevant in their interaction with the alien in *Childhood's End* and *2001*. Rather, the presence of the alien reveals the narrow scope of application of human science and the inadequacy of its systematic and empirical methods. As Samuelson wrote, science in Clarke's stories is a "straitjacket" that limits instead of serving as a bridge to the alien.

4. Conclusion

This chapter finds commonalities in creational principles of the alien in Clarke's and Liu's novels, despite their ostensible differences in depicting the alien. Written in the context of the Cold War, Clarke's benevolent or indifferent aliens are cosmic solutions to humanity's technological self-destruction, and expose the homocentric triviality and inconsequence of human science. In comparison, Liu's ruthlessly antagonistic aliens shake humanity out of their wishful and insular anthropocentric worldview that equates the ultimate moral purpose of the universe with humanity's survival. In this sense, Liu's aliens repudiate the conviction of the "*kexue jiuguo*" movement that scientific advancement leads to moral betterment. On the one hand, Clarke's and Liu's aliens both mirror and imitate humans to allow meaningful inter-civilisational interaction. On the other hand, the act of mirroring hides the aliens' otherness that cannot be reduced to the human, which is preserved through deliberate concealment of their physical presence or intellectual capacity. As antithesis of the human which the human ultimately evolves into, Clarke's and Liu's aliens respectively represent emancipation from biological and scientific materiality, and from anthropocentric parochialism that does not align with objective scientific laws.

Clarke's and Liu's imaginations of the prominent traits of extraterrestrial intelligence might be contrastive, but be they benign or bellicose, marked by mystical immateriality or amoral scientism, the aliens in Clarke's and Liu's novels are conceived as a negation of the human that transcend human limitations and challenge definitions of the human. Analysis of both Clarke and Liu shows that conceptualising the alien and the human as binary oppositions does not separate the two categorically, since the boundary between the dual can be collapsed and one transformed into the other. However, aliens that constitute a true otherness, which are created through literary techniques such as intentional obscurity and confounding human frames of reference, are inaccessible to human cognition and beyond human binaries.

Chapter 2:

Universe of Pluralism: Extraterrestrial Intelligence in Liu Cixin's Short Stories[2]

The worldwide success of Liu Cixin's *Remembrance of Earth's Past* trilogy has made the Trisolaran civilisation a symbol of Chinese SF. In comparison, extraterrestrial characters and races in Liu's short stories have received little scholarly attention. As precursors of aliens in Liu's trilogy that share common characteristics with them, aliens in Liu's short stories are able to provide additional insight into and context for the crucial binaries underlying human-alien relationships in Liu's oeuvre. The previous chapter noted the contrast between the Trisolarans' self-effacement through mirroring the universe and humanity's anthropocentrism that exalts the self. A close reading of Liu's short stories will further illuminate the binary of the self and the Other inherent in anthropocentrism, which is abolished by the aliens' act of mirroring as self-expression. By reviewing the dichotomy of science and literature that is central to the social debates about Chinese SF during the 1980s, and which forms a vital theme in Liu's short stories, this chapter adds to examinations of historical and literary contexts for the binary of amoral scientism and homocentric moralism in Liu's works discussed in the first chapter. Thematic continuities between Liu's works aside, aliens in Liu's short stories differ from those in his trilogy in one significant aspect – they are not confined by the rigid and homogenous Darwinian laws of the Dark Forest, and therefore exhibit a varied range of viewpoints and understandings of the universe. This enables exploration of the binary of the human self and the alien Other in a more heterogenous context, which enriches and diversifies both conceptions of the human and the alien.

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I will discuss extraterrestrial intelligence in ten of Liu's short stories as antecedents to the more well-known Trisolarans from three aspects. First, I will examine Liu's aliens as a metaphorical mirror to humanity that serve as a gauge of humanity's place in the universe, as well as a literal mirror that conceals the self by reflecting the universe in opposition to anthropocentric practices. Then I will analyse aliens that embody varied worldviews and nonhuman states of existence, reflecting the scientific and humanistic divide in the context of the literary tradition of Chinese SF. Finally, I will consider aliens that represent the scientistic outlook and, conversely, interrogate the pitfalls of continuous technological progress and speculate on an unpredictable human technological future. I will argue that Liu's short stories concerning extraterrestrial intelligence ultimately convey a message about the plurality and relativism of worldviews and existential values by allowing the coexistence of the antithetical stances of humanism and science without ascribing superior worth to either, disputing the absolute positions of anthropocentrism and scientism, and dissolving the binary of the human self and the nonhuman other.

1. Alien as the Mirror

The idea of extraterrestrial intelligence as mirror is both metaphorical and literal in Liu Cixin's works. Alien histories of social and technological development in stories such as "For the Benefit of Mankind" (*Shanyang renlei*, 2005) and *Of Ants and Dinosaurs* (*Dang konglong yushang mayi*, 2004) mirror that of humanity, and alien characters' perception and judgement of humans reflect our image back to us. Extraterrestrial intelligence's function as mirror to humanity in SF has long been noted. Darko Suvin describes SF as "[…] a narrative reality sufficiently autonomous and intransitive to be explored at length as to its own properties and the human relationships it implies," and sees non-human sentience in SF strictly as a reflection of human relationships: "for though mutants of Martians, ants or intelligent nautiloids can be used as signifiers, they can only signify human relationships, given that we cannot – at least so far – imagine other ones" (Suvin 71). Gregory Benford, who does not rule out the alien's capacity to embody the indecipherable Other, divides aliens in SF into "anthropocentric aliens" and "unknowable aliens," identifying anthropocentric aliens' role as a mirror or foil for humans:

> The sexual strangeness of the Gethenians in Ursula Le Guin's *Left Hand of Darkness*, for example, is a distancing device, a way to examine our own problems in a different light. In countless lesser works aliens are really stand-in humans of the Zenna Henderson sort: quasi-human, with emotions and motivations not much different from our own. Aliens as mirrors for our own experiences abound in science fiction (Benford, "Aliens and Knowability" 54-55).

Likewise, anthropocentric aliens in Liu's "For the Benefit of Mankind" and *Of Ants and Dinosaurs* mirror challenges of social inequality and unsustainable development faced by human society. These aliens are hardly alien and essentially anthropocentric since they function as "a distancing device" to reflect on humanity's own problems.

More peculiar than the role of metaphorical mirror to humanity is the attribute of alien life and technology in Liu's stories as literal mirrors: their mirrored appearances that reflect the surrounding universe are symbolic of an outlook antithetical to humanity's anthropocentrism. Eileen Crist and Helen Kopnina observed in "Unsettling Anthropocentrism" that the anthropocentric worldview, by positioning anthropos at the centre, consequently displaces the nonhuman to the periphery:

> The displacements over the long course of history have been innumerable but might be grouped into two comprehensive categories: the ideational and material dislocations of nonhumans, 'subhumans,' and wild nature into the fringes of earthly landscapes and human mindscapes alike (Crist 388).

The ideational dislocation of the nonhuman creates a hierarchical binary – humanity, noted for its unique merits, is placed front and centre, while the nonhuman is relegated to the background. To further quote Crist and Kopnina:

> Anthropocentrism is also distinguished by its binary logic. While binary distinctions are intrinsic to language and perhaps defining of thought, the exceptionalist logic of anthropocentrism hijacks this feature to spawn hierarchies out of dualisms, within which humans are "discovered" to have a "series of traits that belong solely to humans," while nonhumans are found to be bereft of these traits and thus of inferior stature (393).

Anthropocentrism not only sets up the binary of the human self and the nonhuman other, but defines humanity's self-identity based on its distinction from and superiority over the nonhuman.

For Liu Cixin, SF is capable of reversing the anthropocentric narrative's decentring and belittling of the nonhuman by turning the spotlight on scientific explorations of the natural world and imaginations of nonhuman viewpoints. Liu's portrayal of alien mirror entities that efface the self and faithfully reflect nature is just such an attempt of getting past – in Liu's own words – the "narcissism" of human-centred literature and bringing the wider universe into focus. Liu's suggestion that mirroring the cosmos is an act performed by advanced cosmic civilisations expresses the hope that humanity could also transcend anthropocentrism at some stage of its development.

In *Remembrance of Earth's Past*, the Trisolarans' tradition of building objects with mirrored exteriors draws from Liu's earlier short stories such as "Ode to Joy" (*Huanle song*, 2005) and "For the Benefit of Mankind." The Trisolarans' preference for mirrored surfaces is based on the philosophy that "hiding the self through a faithful mapping of the universe is the only path into eternity" (*The Dark Forest* 547) – although the self may be transient, a form of immortality could be achieved when the self dissolves into and faithfully reflects the eternal cosmos. The Trisolarans seek eternity by identifying as an unobtrusive part merging into a greater whole, thereby dissolving the boundary between their civilisation and the cosmos. This contrasts with humanity's anthropocentric attempt to immortalise itself by upholding its distinction in the universe – in the third book of the trilogy, humans build the Earth Civilisation Museum on Pluto in the hope that its achievements would not be swept away by time.

The Trisolaran philosophy of mirroring the universe with the self was previously expounded in "Ode to Joy," where the alien musician who flies to Earth to play music for humanity appears in the form of an "ideal mirror" (*Hold Up the Sky* 224) that "perfectly reflected visual light as well as radar with no energy or image loss" (218). The musician mirrors the surrounding environment so faithfully and completely that the binary of the self and the other – that is the musician and the rest of the universe – appears to be nullified by the mirroring. Through the remarks of the human characters, the significance of the musician's mirror-like form is elucidated:

> The Chinese president said, "It reminds me of the Silvers style of mid-twentieth-century architecture, in which, in order to avoid impact on the surrounding environment, buildings were clad entirely in mirrors. Reflections were a way of putting them in harmony with their surroundings as well as self-expression."
>
> "Yes," the secretary general answered thoughtfully. "When civilization reaches a certain level, it can express itself through its reflection of the cosmos" (238-239).

In contrast to the anthropocentric stance that pits the human and the nonhuman against each other, the alien musician represents an outlook where there is harmony instead of opposition between self and other. While anthropocentrism asserts the human against and in differentiation from the nonhuman other, the alien musician expresses the self through the other. The alien philosophy of blending in instead of standing out, of reflection as self-expression, abolishes the anthropocentric binaries of self and other, civilisation and nature, the centre and the periphery, which implicitly contrasts with the anthropocentric attitude of humanity in Liu's stories. Although Liu's extraterrestrial characters and civilisations bear anthropomorphic traits and cannot be classified as Benford's "unknowable aliens," their philosophy of mirroring constitutes an essentially alien perspective that makes a valuable addition to non-anthropocentric thinking: Liu's aliens that mirror the cosmos suggest that the self could be expressed, not through explorations of the interiority of the self as distinct from the exteriority of the universe, but through representing and reflecting exteriority scientifically and faithfully.

In Liu's other stories, portrayals of extraterrestrial intelligence hold up a mirror to humanity's place in the universe through the alien characters' varying opinions on the human race. The alien characters' comments mostly oscillate between seeing the human as lowly and insignificant creatures no better than bugs and commending the human for its unique gifts in literary invention and scientific progress. In "Cloud of Poems" (*Shiyun*, 2003), humans are kept as livestock by the alien race of spacefaring dinosaurs, who present a human poet as a gift to an "intergalactic art collector" (*Hold Up the Sky* 354) from a technologically hyper advanced civilisation that can access the eleventh dimension. The intergalactic art collector calls the human poet "a filthy insect" (349) and gives a scathing assessment of human civilisation:

> "…I've heard about them from certain visitors to this arm of the galaxy. They made frequent visits to Earth in the brief course of these organisms' evolution, and were revolted at the vulgarness of their thoughts, the lowliness of their actions, the disorder and filth of their history. Not a single visitor would deign to establish contact with them up to the destruction of Earth" (349).

The art collector holds human intellect, morality, and social organisation in utter disdain, dismissing the human race as primitive and worthless. However, the art collector seemingly contradicts itself later when it discovers the beauty of classical Chinese poetry:

> "[…] In my travels, I've encountered the various arts of numerous civilizations. Most are ponderous, unintelligible setups. But using so few symbols, in so small and clever an array, to encompass such rich sensory layers and subtle meaning, all the while operating under such sadistically exacting formal rules and rhyme schemes? I have to say, I've never seen anything like it […]" (354)

The art collector's praise of the unique brilliance, sophistication, and discipline of human poetry runs counter to its earlier claim of the vulgarity, lowliness, and disorder of human culture.

In "Village Teacher" (*Xiangcun jiaoshi*, 2001), the alien officials of the Galactic Federation who assess humanity simultaneously find it to be a primitive and unremarkable species and note its extraordinary and unique accomplishments, despite its biological defects and isolation from higher civilisations that might aid its progress. Humans are described by their alien observers as “dull and colorless, like a bunch of plants. This was clearly not a species with any remarkable phenotypic features” (*Hold Up the Sky* 38). On the other hand, the aliens marvel at humans’ unexpected and unlikely scientific and technological achievements attained under unfavourable conditions:

> “Captain, this is lunacy!” yelled the fleet commander. “You are telling us that an organism without any hereditary memory that transmits information using sound waves at one to ten bits per second can form a 5B-level civilization?! And that they developed this civilization entirely on their own, without any external assistance from an advanced civilization?!” (45)

According to the aliens, humanity has reached a level of development that other cosmic civilisations under similar conditions would not be able to achieve, which attests to the singular talents and innate value possessed by the human race.

In both “Cloud of Poems” and “Village Teacher,” observations of human insignificance and deficiencies clash and co-exist with affirmations of humanity’s unique and exceptional capabilities. It seems that Liu’s stories could not decide on whether to characterise humans as possessors of unique qualities that justify their existence in the universe, or utterly inconsequential beings whose belief that they are able to contribute anything of special value to the cosmic society is laughable. Liu expresses such conflicting views about the status of the human in his essay collection *Liu Cixin on Science Fiction*:

> Humanity’s social history is a history of the elevation of the status of the human. From Spartacus who charged out of the arena brandishing his sharp sword, to the French revolutionaries who chanted the slogans of human rights, fraternity, and equality, humans have become the end instead of the means.
>
> However, in science, the status of the human is evolving in the opposite direction. From God’s creation […] and the paragon of animals, humans have reverted to having no qualitative distinction from other animals, and then to paltry bacteria on a speck of sand in a corner of the universe.

> SF is a literature that is inextricable from societal culture, but it was born from science; now the questions is, which side are we on when it comes to the status of the human? (*Liu Cixin on Science Fiction* 49)

The alien characters' evaluations of humans that oscillate between two opposite viewpoints in Liu's stories is a manifestation of the collision between non-anthropocentric scientific principles and homocentric humanistic values in SF, which I will further discuss in the next section of the chapter.

2. Science, Literature, and Alien Worldviews

Liu Cixin's depictions of extraterrestrial intelligence exhibit an intense interest in the existential purposes and outlooks of life in the universe, both in *Remembrance of Earth's Past* and his short stories. However, while the Trisolarans from Liu's trilogy combine numerous traits of extraterrestrial intelligence from Liu's preceding short stories, aliens in Liu's short stories represent much more diverse states of existence and civilisational outlooks than aliens in *Remembrance of Earth's Past*.

Citing Asimov's three laws of robotics as inspiration, Liu maintains in his essay collection that worldbuilding in SF should be "concise and rigorous, and bear the influence of scientific laws" (*Liu Cixin on Science Fiction* 117). The underlying order of cosmic civilisations in *Remembrance of Earth's Past* (aptly named "the Dark Forest") follows Liu's paradigm of science fictional worldbuilding, and predicates the laws of cosmic sociology on two axioms: "survival is the primary need of civilization" and "civilization continuously grows and expands, but the total matter in the universe remains constant" (*The Dark Forest* 6). Based on these premises, civilisations in the universe are locked in struggles for survival against each other and are compelled to hide their existence for self-preservation, as any life that exposes itself will be seen as a threat and exterminated:

> The universe is a dark forest. Every civilization is an armed hunter stalking through the trees like a ghost, gently pushing aside branches that block the path and trying to tread without sound. Even breathing is done with care. The hunter has to be careful, because everywhere in the forest are stealthy hunters like him. If he finds other life—another hunter, an angel or a demon, a delicate infant or a tottering old man, a fairy or a demigod—there's only one thing he can do: open fire and eliminate them. In this forest, hell is other people. An eternal threat that any life that exposes its own existence will be swiftly wiped out. This is the picture of cosmic civilization (*The Dark Forest* 521).

The rigorous inflexibility of the principles of cosmic sociology limits the relationship between civilisations to only one possible mode of interaction characterised by insurmountable antagonism, tension, and reticence. The laws of the "Dark Forest," being universally and uniformly obeyed, erase diversity among cosmic societies, preclude inter-civilisational communication, and produce a homogenous outlook across intelligent life forms in the cosmos. In comparison, extraterrestrial intelligence in Liu's short stories are relatively unconstrained by any all-encompassing and fundamental rules, and are therefore able to represent more diverse conceptions of values and beliefs, manners of interactions, and modes of development.

Liu's accounts of diverse and often conflicting worldviews of cosmic civilisations are rooted in a marked awareness of the conflict between science and literature, which calls to mind the public debate in China during the 1980s on whether SF should prioritise scientific popularisation or literary imagination. The debate is often summarised as "whether science fiction should be named after science or fiction" (*kehuan xing ke haishi xing wen*). The prevailing view at the time was that, as a genre "institutionally affiliated with science popularisation" (Wagner 19), SF should be "scientific" at its core and instil scientific facts into its young readers, with literary imagination and storytelling being relatively minor concerns:

> The subsumption of science-phantasy fiction under science popularization strictly limits the leeway of phantasy. "Phantasy has to be based on science," says Ye Yonglie, the most productive science belles-lettres writer today, who has also written the quasi-official *Treatise on Science Belles-lettres*. This means that phantasy elements must be based on known scientific facts or extrapolations from them (Wagner 21).

However, SF came under attack for the perceived fanciful, unrealistic, and pseudoscientific character of its existent publications during the “Campaign to Eliminate Spiritual Pollution” that began in 1983:

> A “Campaign to Eliminate Spiritual Pollution” was launched by the Communist Party with Deng Xiaoping’s speech at the Second Plenum of the Twelfth Central Committee on 11–12 October 1983. The campaign aimed to root out Western-inspired liberal ideas among the Chinese populace. […] This crackdown on PRC cultural circles started out as a denunciation of pornography and certain trends in philosophical, literary, and art circles, expanding swiftly into an attack by hardline apparatchiks in the Party against a broad range of cultural phenomena and social forces. […] “Science fiction works that contain ghost stories, violence, sex, anti-scientific assumptions, and veiled criticism of socialism” were among the genres and subgenres castigated as spiritual pollution (Li 14).

The crackdown resulted in the banishment of the SF genre from the Chinese literary scene. Prominent SF writers of the day, such as Ye Yonglie and Zheng Wenguang, bore the brunt of the waves of public condemnation. Meanwhile, most SF magazines were shut down in the early 1980s “with the sole exception of the Chengdu-based *Science Literature*, which was later renamed *Science Fiction World* and became the base for the genre’s third revival” (Song, “Representations of the Invisible” 549). It is in this context that a new generation of Chinese SF writers, including Liu, had to re-establish the genre in the 1990s.

By cracking down on SF with fantasy elements and labelling literary imagination as “anti-scientific,” the Campaign to Eliminate Spiritual Pollution exacerbated the perception that science and literature are irreconcilably at odds with each other, to quote Peyton:

> The view of imagination being more important than scientific content, as espoused by writers like Ye Yonglie, was particularly criticized because of its association with superstition (mixin) and the genre was subsequently considered “anti-scientific” in character (Peyton 15-16).

The verdict that SF is “‘anti-scientific’ in character” for espousing “the view of imagination being more important than scientific content,” and the view that science fictional writing is “pseudoscientific” when focusing on literary characters and narratives instead of conveying accurate scientific facts are based on the perception of literature being science's antithesis – literature is imaginary, subjective, and imprecise; science is rational, objective, and exact.

In his essay collection, Liu questions if the debate about "whether science fiction should be named after science or fiction" is still relevant and productive – he argues that it is not necessary to reach a definitive answer to the debate as the question itself is not essential to producing good SF, and to rigidly set up a hierarchy between the scientific and literary components in SF only does disservice to SF's thematic diversity and rich and amorphous nature:

> There're some questions in SF that we can stop discussing, because those questions have been hotly debated since I started following SF in the 1970s [...] if a literary question has been discussed for over thirty years but doesn't do much to help improve the literary genre, then it could be abandoned. Questions such as "is science more important or literature more important in SF?" and "should science be positively or negatively portrayed in SF?" are all actually pseudo-propositions. There could be SF where scientific conceptualisations occupy the dominance place, or others where literature occupies the dominant place [...] (*Liu Cixin on Science Fiction* 144-145)

Even though Liu is dismissive of the historical debate, some of Liu's short stories such as "Sea of Dreams" (2002) and "Cloud of Poems" still reflect the divide between the scientific and the artistic that underpins the Campaign to Eliminate Spiritual Pollution – one could even say that these stories are structured around this divide. As Mingwei Song puts it, Liu's fictional universe is characterised by "the tensions between poetic sensibilities and scientific principles" (*Fear of Seeing* 117). However, while the Campaign to Eliminate Spiritual Pollution conceptualises literary imagination and scientific veracity as mutually exclusive and cannot coexist without vying for dominance or undermining one another, Liu's works juxtapose the antithetical stances of scientific values and materialistic pursuits on the one hand, and literary creativity and artistic ideals on the other without banishing one in favour of the other. By permitting contrary and conflicting outlooks to coexist in the same narrative space without surmising the absolute or inherent worth of either, Liu's stories encourage a plurality of outlooks; clashes of opposing viewpoints lead to critical reviews of the limitation and validity of various civilisational values without laying down any particular one as the immutable truth.

In “Cloud of Poems,” a human debates with the intergalactic art collector about whether technology could produce poems that surpass those written by great human poets such as Li Bai. The art collector confidently asserts that “technology can surpass anything” (*Hold Up the Sky* 355), even the greatest human poets, and that technology is all-powerful: “This is technology. This is the force that allowed my race to ascend from slugs in ocean mud to gods. Technology itself is the true God, in fact. We all worship it devotedly” (356). The human retorts that technology cannot reproduce humans’ poetic genius because “it has nothing to do with technology. They are the quintessence of the human spirit realm” (255). As an art collector, the alien does not seem to believe that the value of art is derived from some innate and irreplaceable “quintessence” of the artist who created the art, nor does it consider its own race to possess any inherent and subjective merit, as it is technology that lifted its race “from slugs to gods.” Technology is deemed as a force superior to and independent of the biological life form that utilises it, and which confers value and distinction on a civilisation. The art collectors’ successful creation of the “Poetry Cloud,” which is a quantum computer that composes every poem that could possibly be written, demonstrates the godlike power of technology. This marvellous invention comes at the price of the destruction of humanity’s home, as the entire Solar System is dismantled and reassembled as storage space for poems generated by the Poetry Cloud. As Mingwei Song comments on the story: “in this way, Liu sticks to the belief in the almighty power of science, which contrasts with the vulnerability and contingency of the humanity, thus turning a utopia of science and technology into a potential dystopia for the human race” (Song, *Fear of Seeing* 131-132).

However, the alien eventually fails to “write software that can judge and appreciate poetry” (383), which makes it realise the limit of technology and the fact that the mathematical soullessness of its technology runs counter to the subjectivity of human literature. The alien's human interlocutor reminds it of the opposition between technology's cold dissection and literature's human warmth: "Li Bai saw nature like you see the girls down by the riverside. In technology's eyes, nature is its components, perfectly arrayed and dripping blood on a white cloth. Therefore, technology is antithetical to poetry" (366). The alien technologist's failure is a reminder that, to quote Will Peyton, "the objectivity of the scientific worldview, if overvalued and overutilized, came at the expense of the humanistic worldview, which concerns subjective value" (Peyton 24). While "Cloud of Poems" explicitly sets up literature and science as antitheses, it ultimately recognises both technology's objective power and literature's subjective worth.

Contrary to the art collector in "Cloud of Poems," the alien character in "Sea of Dreams" (*Meng zhi hai*, 2002) represents unbridled artistic expression that does not concern itself with the practical specificities of technological manoeuvre. In "Sea of Dreams," an alien entity calling itself the "low-temperature artist" visits Earth to chat with human ice sculptors whom it views as fellow artists. Originating from a cloud of dark matter of near-absolute-zero temperature, it utilises the low temperature environment of other worlds to create art in pursuit of the beauty of coldness: "so-called warmth is just a brief effect of an equally brief spasm produced after the universe was born. [...] Energy dissipates. Only the cold is eternal. The beauty of the cold is the only enduring beauty" (*Hold Up the Sky* 310). The artist's technological mastery is evident as it is capable of freezing Earth's ocean in an instant and lifting it into Earth's orbit to create art. However, it scorns humanity's preoccupation with science, calling it "a course of study infant civilizations take": "once exploration has carried out to the proper extent, everything down to the slightest will be revealed. You will discover that the universe is so simple, even science is unnecessary" (318). Unlike its technologically advanced counterpart in "Cloud of Poems," the low-temperature artist sees science as a mark of primitiveness of civilisations, and neither assigns any indispensable value to technology nor sees technology as an end in itself. Rather, the artist judges intelligent life by its dedication to art, and goes so far to claim that "art is the only reason for a civilisation to exist" (318).

The low-temperature artist creates an ethereal ring of ice in space called "Sea of Dreams" using the entirety of Earth's ocean, which triggers ecological disaster on Earth. When a human ice sculptor pleads the artist to return Earth's ocean, he is chastised by the artist in return, as the artist is unable to sympathise with any human concerns and leaves humanity to fend for itself. To quote the alien artist:

> "At first, I thought I'd run into a real artist, but, as it turns out, you're a mediocre, pitiful creature who chatters on about the ocean drying, ecological collapse, and other inconsequential things that have nothing to do with art. Too trivial, too trivial, I tell you. Artists cannot be like this." (318-319)

The low-temperature artist's single-minded devotion to art and beauty and creation of the breathtaking "Sea of Dreams" may have awed some of its human colleagues, but fail to inspire and edify humanity as a whole. Rather, its catastrophic interference with Earth results in humanity's strengthened faith in its own technological prowess after humans successfully restore Earth's ocean: "this was the most valuable thing humanity received from the Ring of Ice Era: Reclaiming *Sea of Dreams* made humanity see its own strength, taught it to dream what it had never before dared to dream" (341). Although the story positions art and science as mutually exclusive practices throughout its narration of humanity's interaction with the alien, it ultimately passes no judgement on either science or art as a civilisation's existential purpose and guiding principle. Instead, it concludes with an open-ended message about the multiplicity of life's purposes through the conversation of a group of human ice sculptors:

> "So what if times are hard? Even in hard times, you can't not make art, right?" an old ice sculptor said through chattering teeth.
>
> "Art is the only reason for a civilization to exist!" someone else said.

> "Fuck that, I have plenty of reasons to go on," Yan Dong said loudly.
>
> Everyone laughed, then fell silent as they thought back on ten years of hard times. One by one, they counted their reasons to go on. (342)

While the historical dichotomy between science and literature and science's primacy in Chinese SF leaves its mark on Liu's portrayal of the interaction between humans and extraterrestrial intelligence, Liu's stories do not set out to determine the absolute value of either scientific or literary pursuit or whether one discipline should take precedence over the other. Rather, Liu creates narrative spaces where scientific convictions and literary ideals coexist, contend, and are in dialogue with each other. Clashes of cosmic civilisations in Liu's short stories either occur as a result of conflicts in existential values, or are accompanied by reflections on the incompatible outlooks of the civilisations involved – in this sense, inter-civilisational conflicts in Liu's short stories are fundamentally conflicts of civilisational values, and such conflicts, yielding no conclusive judgements, demonstrate the relativistic nature of any beliefs, objectives, or worldviews held to be true by intelligent life in the universe.

Liu Cixin's recognition of the relativism and plurality of existential values of cosmic civilisations is a reflection of the diversification of themes, outlooks, and subject matters of what Mingwei Song calls the "new wave" of Chinese SF, of which Liu is a representative figure. Song stated that he "borrowed the concept of the 'new wave' from Anglo-American SF history" ("After 1989: The New Wave of Chinese Science Fiction" 8) to characterise the new generation of Chinese SF since the beginning of the twenty-first century:

> I have dubbed this recent boom of Chinese sf the "new wave" to underscore its cutting-edge literary experiment and subversive cultural and political significance. […] the new generation of Chinese sf authors has to reinvent the genre with a new literary self-consciousness and a new social awareness, and to represent the complexity, ambiguity, and uncertainties of both the fantasy and reality of China's changes, or the world's, in their own ways that transgress the mainstream literary realism and official political discourse ("Representations of the Invisible" 547).

Unlike preceding generations of Chinese SF constrained by the "straitjacket of being merely a politicized utilitarian genre" aiming for science popularisation (Li 10), New Wave Chinese SF embraces both more complex and nuanced reflections on societal issues and bolder and freer imaginations regarding more diverse topics. Hua Li identifies "a wide range of themes and narrative techniques" as a major attribute of New Wave Chinese SF (Li 180), and suggests that translation of foreign SF works "introduced Chinese readers and writers to an even broader range of subject matter and techniques, and inspired Chinese writers to experiment with this unprecedented, wide variety of subject matter and techniques" (13-14).

Liu's short stories such as "Mountain" (*Shan*, 2006), "Ode to Joy," and "Heard It in the Morning" (*Zhao wen dao*, 2002), with their varied explorations of nonhuman civilisational values and purposes, are testaments to New Wave Chinese SF's thematic diversity and vibrant imagination. In "Mountain," an alien spaceship descends into Earth's atmosphere and its passengers share with humans the history of their civilisation: originating from the hollow core of a planet that is "a spherical space, somewhat more than 3,500 miles in diameter" and "completely surrounded by layers of rock" named "the Bubble World" (*The Wandering Earth* 72), they are mechanical life forms that excavate their way to the planetary surface and go on to explore the boundary of the known universe. Echoing the experience of their audience, a human mountaineer, the aliens explain the convictions that drive their space exploration:

> Indeed, it is the nature of intelligent life to climb mountains, to strive to stand on ever higher ground to gaze farther into the distance. It is a drive completely divorced from the demands of survival […] The reason evolution bestows all intelligent life with a desire to climb higher is far more profound than mere base needs, even though we still do not understand its real purpose. Mountains are universal, and we are all standing at the foot of mountains. […] The speed of light is the foot of a mountain; the three dimensions of space are the foot of a mountain. You are imprisoned in the deep gorge of light-speed and three-dimensional space. Does it not feel...cramped? (99)

Just as the low-temperature artist's recreations of the "enduring beauty of the cold" across the universe is inspired by the physical environment of its home world, the mechanical alien's belief that all life are driven to climb higher and go further is shaped by the severe shortage of space of the Bubble World and its civilisation's eternal struggle for and search after space – even though the alien claims that the drive is "completely divorced from the demands of survival." While the physical environment of the Bubble World is an inverse of that of planet Earth, the history of the scientific development of the mechanical civilisation is also an inverse of that of humanity: the mechanical aliens harnessed electricity at the dawn of their civilisation, but only discovered and understood water when their society had become sufficiently technologically advanced. Thus, as an inverse of human civilisation, the mechanical civilisation's devotion to its ultimate goal of exploring the edge of the universe constitutes an alternative possibility of what scientific and technological progress could lead to.

In "Ode to Joy," when asked about its nature, the alien musician's disregard for the distinction between individual and collective, and between form and content puzzles its human listeners, since it has evolved beyond such binaries and human categories cease to have meaning for it. Unlike the low-temperature artist and the mechanical civilisation whose outlook and motive are moulded by their physical environment, the musician in "Ode to Joy" is rootless and "originate so far away in both time and space it is meaningless to speak of it" (*Hold Up the Sky* 225). Its sole purpose is to play music, its audience "the entire universe" (227).

In "Heard It in the Morning," a group of human physicists about to begin a large-scale high energy particle experiment are stopped by an alien visitor calling itself the "dehazardification officer of the universe" (*A View from the Stars* 169). The alien informs them that the experiment would cause vacuum decay and thus destroy the universe. The humans further learn that the present universe was born after the demise of the previous one, which was destroyed precisely by high energy experiments exploring the Grand Unified Theory undertaken by intelligent life there. Civilisations of the previous universe threw themselves into the experiments despite knowing the fatal risk because they believed that "the pursuit of the most ultimate truth of the universe is the final aim of civilisation" (*A View from the Stars* 182). The dehazardification officer concurs with such an outlook:

> "In the end, when the problems of existence are completely solved, when love disappears because individuation gives way to connection, and when art finally dies out upon reaching the final peaks of exquisiteness and obscurity, the pursuit of extreme beauty of the universe will become the only thing civilisation can put its faith in." (*A View from the Stars* 180)

Alongside cosmic civilisations' existential objectives such as survival and art which are explored in Liu's other stories, "Heard It in the Morning" proposes the pursuit of a thorough understanding of the physical truth of the universe as the end of evolution of life in the universe. However, the story does recognise the plurality of civilisational values and purposes – the dehazardification officer sympathises with worldviews that differ from its own, and as a human physicist succinctly puts: "all manners of living are valid, it's not necessary for us to understand each other."[3]

The low-temperature artist, the alien from the Bubble World, the mirror musician, and the dehazardification officer may represent disparate worldviews, but have two aspects in common. Firstly, their interactions with humanity all begin with the aliens' sudden visitation of Earth where they seek to have dialogue with and impart knowledge about themselves and the cosmos to humans. Secondly, they are all from civilisations with extremely advanced technology far above humanity's level of development, and subsequently find humans simple to understand and easy to communicate with. In this sense, Liu's aliens are not so much independent and fully developed characters as information sources for their human listeners and the readers, as well as vehicles for exploring nonhuman values and alternative technological futures. As Mingwei Song remarks, "there is a touch of political apathy in most of his (Liu's) works, which […] show tendencies of transcending China's contemporary political reality and looking beyond the horizon of our own time for a technological utopia of the future humankind or posthumanity" ("Representations of the Invisible" 556-557). The extraterrestrial intelligence in "Sea of Dreams," "Mountain," "Ode to Joy," and "Heard It in the Morning," untethered by realistic concerns and free from the function of embodying social or political allegories, are imaginative attempts at looking beyond the current horizon for inhuman and posthuman possibilities.

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[3] I find the translation of this sentence from page 183 of *A View from the Stars* inaccurate, therefore I am using my own translation here.

3. Scientism and the Dark Technological Future

Liu Cixin does not shy away from expressing his own scientistic beliefs, calling himself a "technologist" and claiming that "technology can solve any problem" in an interview (*Liu Cixin on Science Fiction* 35). The scientistic attitude that, in Thomas Nagel's words, "puts one type of human understanding in charge of the universe and what can be said about it" and "assumes that everything there is must be understandable by the employment of scientific theories" (Nagel 9) is indeed present in Liu's portrayal of extraterrestrial intelligence. What is also present in Liu's stories is the assumption that technology is vital to a civilisation's survival in the universe and the sole measure of a civilisation's level of development. However, many of Liu's short stories also actively explore alternatives to scientistic civilisational values and cast a more sober and doubtful look at the limits of unsustainable technological progress. Such stories with pessimistic depictions of technological development bringing decline and ruin to alien civilisations are in fact a mirror to the past, present, and possible future of human scientific and technological advancement.

The bleak imaginations of technological futures of cosmic civilisations featured in some of Liu's stories is characteristic of New Wave Chinese SF, as Gwennaël Gaffric remarks: "the major contemporary authors of 'new wave' sf […] helped to re-found the genre and to color it with a much darker tone than that of the naïve and optimistic writing of the 1970s" (Gaffric

25). Xia Jia similarly notes in "What Makes Chinese Science Fiction Chinese?" that while the scientific utopias in Chinese SF in the 1970s is an expression of "the Chinese faith and enthusiasm for the grand narrative of modernization,"

> Paradoxically, as China actually modernized with the reforms of the Deng Xiaoping era, these enthusiastic dreams of the future gradually disappeared from Chinese science fiction. Readers and writers seemed to fall out of romantic, idealistic utopias and back into reality.

Mingwei Song sees the technological pessimism of New Wave Chinese SF as a subversion of the "myth of development" heavily promoted by previous generations of Chinese SF "since the early years of Mao's republic" ("Variations on Utopia in Contemporary Chinese Science Fiction" 92). Scientific optimism undergirds the "myth of development," promulgating the idea that science could perform marvels that bring unbounded societal progress, as Song explains: "scholars have pointed out that Chinese SF before Liu's generation carried an optimistic spirit that 'man would always triumph over nature.' In this older version of scientific optimism, the cosmic unknown presents no threat, and hard science can be invincible" (*Fear of Seeing* 127). New Wave Chinese SF, however, does not subscribe to the narrative of the certain triumph of human science over the universe, to quote Song:

> The trend called the new wave in Chinese sf grew out of the post-1989 political culture, and it has not only resurrected the genre but has also subverted its own conventions, which had been dominated by political utopianism and technological optimism throughout nearly the entire twentieth century ("Representations of the Invisible" 549).

Song further argues that Liu's dedication to creating "hard SF" and his focus on scientific speculation instead of any political message steer his works away from the "political utopianism and technological optimism" of his predecessors. "Hard SF" refers to "a sub-branch of SF normally based on solid scientific foundations and coherent scientific discourse" (*Fear of Seeing* 126). The fact that hard SF is "truthful to the world it speaks to rather than any political mandate, decides the subversive nature of 'hard SF' in the historical context of a political emphasis on the certainty of strengthening the nation through deterministic usage of scientific knowledge" (*Fear of Seeing* 128). Song contextualises the inception of Liu Cixin's hard SF in the "cultural spirit of the 1980s" that advocates truthful scientific explorations of the unknown universe:

> Taking one step further back, one could even say that Liu's SF is heir to the cultural spirit of the 1980s, when new scientific theories about the nature of the world were introduced by reform-minded scientists like Fang Lizhi, the former president of the Chinese University of Science and Technology. [...] With the new scientific theories endorsed by Fang Lizhi and others, the political importance of scientific determinism was now secondary to science's fidelity to the complexities and uncertainties of the universe, which does not bend to human-centered optimism (*Fear of Seeing* 127).

Divested of the political mandate of "scientific determinism" and "human-centered optimism," Liu's stories fully embrace the sinister uncertainties of both the universe and humans' scientific means to explore and master it; the cosmic unknown becomes the very embodiment of threat, and science the instrument of mutual destruction and self-defeat. Science and technology do not bring forth "romantic, idealistic utopias" even in Liu's stories that exhibit the most blatant scientistic views (Xia, "What Makes Chinese Science Fiction Chinese?"). Science and technology may be essential for survival and almost boundlessly powerful in Liu's stories, but they do not guarantee a bright utopian future.

The scientism of Liu's view of cosmic civilisations is perhaps best exemplified by the "cosmic sociology" or "Dark Forest theory" in *Remembrance of Earth's Past*, where biological survival is the be-all and end-all of life in the universe, and the ideas of Darwinian evolution underlie civilisations' ventures to modify themselves to better survive the cosmic environment. As Will Peyton points out, "Cosmic Sociology's first ethical axiom is principally scientistic in that a biologically reductionist attitude equals the idea that survival is the prime aim of civilization," and that while the Dark Forest theory starts from "Euclidean premises," the actual ethical character of interactions between civilisations is "implicitly Darwinian" (Peyton 51).

Some of Liu's short stories share with *Remembrance of Earth's Past* the pervading scientistic and Darwinian undertone in their characterisation of cosmic civilisations, as well as an implicit belief that science and technology are both critical to the continual survival of life in a hostile universe and the standard by which civilisations are judged. In "Village Teacher," life in the galaxy are subjected to a "civilisation test" that evaluates their command of scientific knowledge, by which their right to survive is determined. In "Taking Care of God" (*Shanyang shangdi*, 2005), humans found themselves the offspring of "God civilisation," who warns the human race that they have siblings in the universe who plan to invade Earth, and the only way to survive the inevitable conflict is to master near-light-speed space travel:

> This is a race of life and death to see which one among you can achieve near-light-speed space travel first. It is the only way to break through the prison of time and space. Whoever can achieve this technology first will survive. Anyone slower will meet certain death. This is the struggle for survival in the universe (*The Wandering Earth* 366).

In "Cloud of Poems," the alien dinosaurs inform humans that "the standard measure of any race's level of civilization is the number of dimensions it can access," which puts humanity in "the same category as weeds and lichen" (*Hold Up the Sky* 350) in the eyes of highly advanced intelligent life in the universe.

Underlying these stories is the belief that burgeoned with the onset of industrialisation in Western societies that "the degree to which a society has mastered its environment reflects the extent to which it has ascended from savagery to civilization" (Adas 24), and that science and technology are "the most objective and unassailable measures" of a civilisation's "past achievement and present worth" (134). When transplanted to the context of twentieth century China, it becomes the high hopes of Chinese intellectuals for science and technology as the only remedy to uplift China from its backwardness, counter Western invasions, and help China find its place on the world stage. Such hopes gave rise to the movement called "*kexue jiuguo*" (saving the nation with science) in late nineteenth and early twentieth century China that promoted Western science and technology to increase the nation's material wealth and power, combat antiquated social values and institutions, and enlighten the minds of the public.

This rhetoric of science as the nation's salvation is very much present in "Village Teacher" where the titular village teacher "spent his whole life trying to ignite the flame of science and culture in the children's hearts" and to dispel "the fog of ignorance and superstition that enshrouded this remote mountain village" (*Hold Up the Sky* 9). When the Galactic Federation subjects Earth to the "civilisation test" to determine whether life on Earth is worth preserving, the village teacher's students happen to be chosen as samples and pass the test because they manage to name Newton's three laws, which the village teacher insists on teaching them right before he passes away. Thus scientific education is elevated to an even higher and more vital status by the story, from that which enlightens the Chinese people and saves the nation to that which delivers the whole of mankind. Even as the village teacher of Liu's story desperately tries to impart basic scientific facts to his students, and invokes the seminal Chinese author Lu Xun's hope that scientific education could awaken the Chinese people from their spiritual torpor, so this urgent sense of scientific and technological advancement as a matter of life and death is diffused across the wider picture of cosmic civilisations in Liu's stories.

Aliens in some of Liu's other stories hold up a mirror to the challenges of present and future technological and social development of humanity itself, and as such throw doubt on the creed of scientism and the all-important status of science and technology with sceptical and pessimistic explorations of the repercussions of scientific and technological progress. In "Taking Care of God," the plight of the God civilisation who created and nurtured the human race on Earth and who are genetically identical to humans gives a glimpse of a hypothetical future old age of human civilisation. When the Secretary-General of United Nations expresses their sanguine expectation to a representative of God civilisation that human development will continue indefinitely, the representative warns that every race in the universe inevitably faces aging and demise. In their own case, the population of God civilisation grow entirely dependent on their machines and enter "the Age of the Machine Cradle":

> "The smart machines gave us everything we needed: not just material needs but also psychological ones. We didn't need to put any effort into survival. taken care of by machines, we lived as though we were lying in comfortable cradles. […] Gradually we forgot about our technology and science. Our civilization became lazy and empty, devoid of creativity and ambition, and that only sped up the aging process" (*The Wandering Earth* 337).

Paradoxically, the pinnacle of technological advancement results in complete regression of the civilisation; here science does not enlighten and edify like it does in "Village Teacher," but takes away a civilisation's agency to evolve and innovate. However, even when God civilisation understands too well the trap of technology, it still urges humanity to speed up its technological development to prepare for alien invasions. "Taking Care of God" shows a conflicting attitude towards technology where technology is both vital for a civilisation's survival and can lead to a dead end in progress.

In the sequel of "Taking Care of God," titled "For the Benefit of Mankind," the pernicious consequences of the technological innovations of humanity's sibling civilisation, who are called "the Elder Brothers" and similarly created by the God civilisation, shows a gloomy forecast of one possibility of humanity's future. The implantation of supercomputers in brains serving to amplify intelligence creates immense disparities in intellectual capacity within the population and divides the civilisation into two different species of people with disparate intelligence. As one individual from the Elder Brothers civilisation explains to the human protagonist:

> "Those who received this premium education were vastly more intelligent than those who did not. The cognitive differences between these educated elites and ordinary humans were as large as those between humans and dogs […] And so, quite naturally, something happened. […] The rich and the poor were no longer the same species. The

> rich were as different to the poor as the poor were to dogs. The poor were no longer people" (*The Wandering Earth* 199-200).

Technology leads to dehumanisation and fractures the Elder Brothers' society. In terms of economy, capitalism reaches its apex and "ninety-nine percent of the planet's wealth was held by a single person" (201), which eventually forces the destitute masses to leave the planet and invade Earth in the hope of finding a new home. As Pei Jingwen commented on the story, "if the development of technology progresses far ahead of the adjustment of social structures, technology will become centralised absolutely, which will eventually result in the alienation of humans" (Pei 103).

Although not among the ranks of extraterrestrial intelligence, the civilisation created by the joint effort of ants and dinosaurs in *Of Ants and Dinosaurs* amounts to an "alien" twin of human civilisation that is both a mirror image of humanity's stages of scientific and technological development, and a cautionary tale of the devastating consequences of unheedful growth and expansion. Environmental crises and exponential population growth triggers conflict between the ant and dinosaur races, which ends in a nuclear war that brings about the civilisation's self-destruction. The ants blame the dinosaur race's scientistic beliefs for their reckless industrial expansion: "But Laurasian dinosaurs are incorrigible dinocentrists – they're true techno-worshippers from their horns to their tails. Their belief in the supremacy of machines, industry and nuclear weapons is unshakable [...]" (*Of Ants and Dinosaurs* 126). To the dinosaurs, the ants' excessively rational and mechanical mindset is equally to blame for their joint civilisation's destruction: "[...] as long as the theoretical possibility for a course of action exists, they will attempt it. That's the flipside of their mechanical way of thinking. In their simplistic estimation, nothing is too crazy" (175). Contrary to the scientism of some of Liu's other stories, *Of Ants and Dinosaurs* warns of the catastrophic consequences of a blind faith in technology coupled with a rigidly technical and mechanical way of thinking.

While being confident in technology's nigh infinite potential, Liu Cixin is aware of the unpredictable dangers of unimpeded scientific and technological progress, as he wrote in an essay:

> Civilisation could be a bright boulevard on which life on Earth could continue for countless generations, or it could be a trap leading to the extinction of life on Earth, including the human race.
>
> A trait of modern technological civilisation is its expanding nature. Civilisation is continuous spread and expansion, it blows its own scale up like a balloon, careless of when it will burst. (*Liu Cixin on Science Fiction* 22-23)

Liu's assessment of "modern technological civilisation" is exemplified by the alien dinosaur race wandering through space in "Devourer" (*Tunshi zhe*, 2002), who is perpetually driven and afflicted by its own hunger for expansion and the scarcity of resources in the universe, and forever battling the hostile environment of space in search of habitable worlds to satiate its enormous appetite: "What is civilization? Civilization is devouring, ceaselessly eating, endlessly expanding; everything else comes second" (*The Wandering Earth* 319).

Although focusing on alien civilisations, Liu's abovementioned short stories tackle the complex social, environmental, and economic reality and an uncertain technological future. Whether it is humans losing agency to their own technological inventions, or the alienation and social inequality exacerbated by technological development, or resource depletion as a result of unlimited expansion, humanity finds reflections of its own problems in the aliens, with whom humans are able to have dialogues and learn the necessary lessons.

4. Conclusion

Some of the prominent characteristics of Trisolaran civilisation in *Remembrance of Earth's Past* are derived from Liu's preceding aliens, and their contrast to the distinct traits of the human race demonstrates similar concerns from Liu's short stories. The disparity between the

Trisolarans' austere and hardened scientistic approach to survival and humanity's artistic and literary sensibilities and humanistic ideals exemplifies the scientific and humanistic divide addressed in Liu's short stories. The Trisolarans' anti-anthropocentric philosophy of decentering the self, and dissolving the boundaries of self and other through building objects with mirrored exteriors that blend into and faithfully reflect the surrounding universe, also draws from Liu's earlier short stories. However, Liu's treatment of the values and outlooks of cosmic civilisations in *Remembrance of Earth's Past* is significantly more simplistic than the diverse and sometimes conflicting worldviews and existential objectives in his short stories. While the reductiveness of "cosmic sociology" provides a rigorous and unambiguous foundation that serves as a necessary anchor for the sprawling and complex account of intergalactic conflict in *Remembrance of Earth's Past*, Liu's short stories involving alien characters and civilisations are far more interested in exploring the multitudinous possible array of answers to such grand questions as the ultimate purpose of life in the universe and what technological civilisations are eventually progressing towards.

Liu's short stories argue for the plurality and relativism of existential values and purposes of life in the universe not only by portraying diversity, but by allowing contradictions, abolishing binaries, and questioning absolute positions. Through delineations of alien worldviews and their clash with human values, Liu interrogates the absolutist outlook of scientism, nullifies the anthropocentric binary of the human self and the Other represented by the wider universe, and fosters the coexistence of the antithetical stances of humanistic subjectivity and scientific objectivity by recognizing the validity of both humanistic affirmation of innate human worth and scientific pursuit of mastery of the physical universe. Extraterrestrial intelligence constitutes the perfect vehicle for representing such diversity, multiplicity, and relativism because of its ability to embody the conflicting roles of humanity's mirror image and the Other beyond the scope of the human, as well as the infinite imaginary possibilities they contain.

The first two chapters examined alien entities external to the human, and the next chapter will proceed to inspect alienness emanating from within the human that is catalysed by an anomalous environment in Han Song's and Jeff VanderMeer's fictions. While Clarke is Liu's predecessor, Han and VanderMeer use similar literary effects to deal with social issues of the same epoch. The third chapter will look at how, in contrast to the cosmic order that humans embrace in Clarke's and Liu's novels, the lawless and fickle human metamorphosis in Han's and VanderMeer's works lead to the dissolution of order and rationality.

Chapter 3:

The Inhuman, the Uncanny, and the Weird in *Annihilation* and *Subway*

This chapter will focus on Jeff VanderMeer's novel *Annihilation* (2014) and Han Song's novel *Subway* (*ditie*, 2011). Both novels follow their protagonists' journey from an ordinary, real-life setting into locales of preternatural mysteries and fantastical horrors that are governed by the logic of the uncanny and the grotesque, and which transform the human into the inhuman.

VanderMeer's *Annihilation* is the first book of his Southern Reach trilogy and focuses on an enigmatic coastal area called Area X, where humans melt into the supernatural landscape, and alien beings duplicate human forms. *Annihilation* is told from the perspective of a biologist, who is haunted by her husband's mysterious reappearance and eventual death after he departed for an expedition into Area X, and decides to join the following expedition in the company of three other female scientists. In Area X, they encounter a bunker with a staircase reaching into the ground, paradoxically named "the Tower," and discover strange writing on the bunker's walls made of alien fungal material. After inhaling fungal spores, the biologist gradually mutates. In the meantime, she witnesses other strange phenomena — the plant and animal samples that she collects contain human cells, and doppelgangers of expedition members roam Area X. The story culminates in the biologist's confrontation with the inexplicably bewildering entity called "the Crawler" at the bottom of the Tower, and her final decision to remain in Area X.

Han Song's *Subway* unveils the techno-horrorscape of subway trains and underground tunnels where humans mutate and devolve. *Subway* contains five independent stories that each feature different characters' misadventures, but that are subtly interconnected and arranged chronologically. In the first story "Last Train" (*Moban*), Lao Wang witnesses humanoid creatures in subway stuffing slumbering passengers into glass jars and carrying them away. The protagonist of the second story “Sudden Transformation” (*Jingbian*), Zhou Xing, is hinted to be Lao Wang’s son-in-law. Zhou was trapped in a subway train that never stops, where passengers devolve into subhuman monsters. The first two stories allude to world-ending catastrophes, leading to the third story “Symbol” (*Fuhao*) portraying the subway as a shelter from the imminent apocalypse. The protagonist Xiao Wu explores subway wreckages from past collision incidents, while being reminded of Zhou Xing’s stories about the subway. The fourth story “Paradise” (*Tiantang*) and the fifth story “Ruins” (*Feixu*) are set in the postapocalyptic distant future. In “Paradise,” advanced rats take over Earth’s surface, leaving the subway to a posthuman species that descends from human survivors of the apocalypse. Humans in “Ruins” have migrated to another planet, and two teenagers return to Earth to investigate the mystery of humanity’s extinction on Earth.

Despite the two novels’ different themes of ecological disaster and social critique, they feature shared examinations of the blurred boundaries between normality and the supernatural, the human and the monstrous, scientific rationality and experience unfathomable by reason. Both novels interrogate the validity of the binary of the human and the inhuman, as the human dissolves or devolves into the inhuman; they also explore whether the truly inhuman Other could be assembled from human materials in the tradition of weird fiction.

In the first section of the paper, I will review the literary and social contexts of *Annihilation* and *Subway*, namely Han Song as a successor of Lu Xun and his critique of contemporary Chinese social progress, and VanderMeer as an advocate and practitioner of New Weird fiction and his concern for local and global environmental crisis. In the second section, I will examine the porous border between the human and the inhuman that allows the two to mix and entangle. In the third section, I will discuss the relation of the scientific to the supernatural, and its position across the divide of the human and the inhuman. In the fourth section, I will explore the coexistence of the humanizing uncanny and the irreducibly inhuman otherness of the weird in *Annihilation* and *Subway*.

In terms of methodology, I will employ Freud's definition of the uncanny to analyse the class of the frightening in *Annihilation* and *Subway* that has familiar and human origins despite its alien and inhuman qualities. Jacques Lacan's concept of "weaning complex" will be discussed in connection to the Freudian uncanny to illustrate the primal desire to return to the womb in Han Song's *Subway*. I will also use Istvan Csicsery-Ronay's "science-fictional grotesque" to explore the supernatural's defiance of scientific laws, the shifting equivocality and instability of inhuman metamorphosis, and the tension between scientific order and the unearthly chaos in Han's underground and VanderMeer's Area X. I will argue that despite their disparate concern with social critique and ecology, Han Song and Jeff VanderMeer share common interests in illuminating intimate realities that humanity live with through supernatural phenomena that are seemingly estranging, but are of human origin and symbolic of real-life conditions; besides alluding to human affairs, they also actively explore creations of the categorically inhuman Other that is at the heart of the aesthetic experience of the Weird.

1. Han Song's "Gloomy China" and VanderMeer's New Weird

Han Song is a unique presence in contemporary Chinese science fiction for his eerie and absurdist stories, which Chinese science fiction writer Jia Liyuan characterises as the "frightening ghost towns" of "Gloomy China." As Jia comments on Han Song: "his science fiction of the last few decades, with its unique style and its absurdly dark and violently bloody content that is often intentionally obscure and stomach-turning, has baffled fans but has been praised by some critics as raising Chinese science fiction to new heights" (Jia 103). Cryptic and self-referential, and taking place in bizarre and alienating settings, Han Song's stories are nonetheless rooted in contemporary Chinese social reality, as Han remarks himself: "at this time, what is needed most is to increase the social depth of science fiction and to return at least a portion of it from alien worlds back to Earth, primarily because of all the unsolved problems in Chinese society" (qtd. in Jia 105-106). Mingwei Song attributes the nightmarish and fantastical quality of Han's fiction to its role in breaking free from the constraints of Han's daytime job as a journalist working for state media:

> By profession, he is a senior journalist working for China's official Xinhua News Agency, specializing in processing news feeds for foreign media. He spends his spare time, mostly nighttime, writing SF stories and novels. The contrast between his daytime job and nocturnal career creates a meaningful gap between two modes of writing: his journalism must follow the protocol to tell "good China" stories, showing only positive images in the daylight; whatever cannot be shown in the day and belongs to the night enters his SF, a literary dreamscape that unfolds an invisible China, a Sinotopia coming from the depths of China's state-constructed proper self-image. (*Fear of Seeing* 163-164)

Against "China's state-constructed proper self-image" that boasts "the subway— together with all sorts of other rail transport, including the recent high-speed rail system and maglev" (*Fear of Seeing* 181) as symbols of the country's rapid social and economic development, Han's *Subway* delineates a counterimage of progress as illusory mirage, transformation as devolution, and productivity as cyclic futility. In this sense, *Subway* is a work of social critique, and Han is seen by scholars as "an inheritor of the May Fourth tradition of cultural criticism and enlightenment as represented by Lu Xun" (Jia 104). Han inherits the theme in Lu Xun's works of the nigh impossible task of waking a "benighted public" (Isaacson 4), and Lu Xun's imagery of society as a suffocating iron house: "Han Song frequently engages with Lu Xun's iron house parable by using enclosed spaces, particularly planes and trains, to comment on the role that these technologies have played in China's national development" (Healey 517). As Mingwei Song remarks, Han concentrates on "the use or abuse of science as well as the power of technology, such as high-speed transportation and artificial intelligence, and the technology of power, such as surveillance, algorithms, and total control" (*Fear of Seeing* 164). The power of technology and the technology of power become one and the same in Han Song's work - it oppresses and enervates the public like Lu Xun's iron house.

Jeff VanderMeer is a proponent of weird fiction and "the New Weird." The New Weird succeeds the "Old Weird" tradition of the twentieth century and formally came into existence after M. John Harrison proposed the term in 2003 (Weinstock 183). VanderMeer defines New Weird fiction as follows in his introduction to the anthology *The New Weird*:

> New Weird is a type of urban, secondary-world fiction that subverts the romanticized ideas about place found in traditional fantasy, largely by choosing realistic, complex real-world models as the jumping off point for creation of settings that may combine elements of both science fiction and fantasy. New Weird has a visceral, in-the-moment quality that often uses elements of surreal or transgressive horror for its tone, style, and effects […] New Weird fictions are acutely aware of the modern world, even if in disguise, but not always overtly political. As part of this awareness of the modern world, New Weird relies for its visionary power on a "surrender to the weird" that isn't, for example, hermetically sealed in a haunted house on the moors or in a cave in Antarctica. (VanderMeer, "The New Weird Anthology - Notes and Introduction")

New Weird fiction's acute awareness of the modern world is reflected in VanderMeer's admission that *Annihilation* is inspired by the Gulf Oil Spill in 2010 and a response to the environmental disaster (VanderMeer, "Hauntings in the Anthropocene"). VanderMeer writes of the Gulf Oil Spill that "the oil was gushing out in the Gulf, and it couldn't be contained […] It was haunting us day and night, always there," which is reminiscent of the ever-expanding, uncontainable, and haunting Area X in *Annihilation*. VanderMeer also details how the Gulf Oil Spill translates into Area X:

> But even after they capped the well, it was still somewhere in the back of my mind, and eventually that dark swirl coalesced into a dark tunnel with words on the wall, and an invisible border and Area X: a strange place in which nature was always becoming more what it had always been without human interference: less contaminated, less compromised. Safe. Where the oil was being taken out. ("Hauntings in the Anthropocene")

Area X is a supernatural region that reverses and cures environmental catastrophe. Just as the subway is a counterimage of the state propaganda that Han Song deals with in his daytime job, Area X is a counterimage of VanderMeer's personal experience of the Gulf Oil Spill. VanderMeer sees weird fiction not as escapist fantasy literature, but as a means to "create a greater and more visceral understanding" of the environmental crisis of our era by "mapping elements of the Anthropocene" ("Hauntings in the Anthropocene"). Scholars have also noted

Annihilation's engagement with "21st-century scientific discourses on interrelated matter, remixing all lifeforms' DNAs, molecules, and materialities to reflect back on anthropocentric bioengineering, terraforming, and mass extinction" (Mohr 184), and Area X's uncanny transformation of humans and all materialities that evokes "the current transformation of our biosphere" (Spicer 49) and "processes such as climate grieving, deconstructing Western ideologies, or […] sickness in the face of ecological collapse" (Spicer 47).

2. Border-crossing

An important theme in both *Annihilation* and *Subway* is crossing the border between the natural and the supernatural, between the mundane and the uncanny, and between the human and the inhuman. The border separates two realms that are inversions of each other. Area X is an inversion of human society: human agency reshapes and reassembles non-human materialities in human society, but in Area X, an alien agency reshapes and reassembles human physical bodies, "transforming anthropocentric interference and bioengineering into a reverse process of herbaforming" (Mohr 172). Similarly, Han Song's subway is an inversion of conventional perceptions of reality, where life turns into death, progress into regress: the lifeless subway trains and machines achieve agency over human passengers, and are more alive than humans who are reduced to slumbering corpses and mindless creatures. In Mingwei Song's words, it is "a perverted postapocalyptic counterimage to the self-asserted prosperity and progress" (*Fear of Seeing* 162).

Borders in *Annihilation* and *Subway* are meant to be infiltrated, breached, and blurred, demonstrating "the permeable if not illusionary border between human and nonhuman" (Mohr 179), and the interconnectedness and affinity between the human and nonhuman sides of the border. Both novels' treatment of border-crossing is very much in the spirit of weird fiction, as Weinstock remarks and quotes China Miéville:

> Rather than keeping the sublime at a distance, weird fiction allows it to seep into and suffuse the world of conventional reality: "The Weird [...] punctures the supposed membrane separating off the sublime, and allows swillage of that awe and horror from 'beyond' back into the everyday [...] The Weird is radicalized sublime backwash" (Weinstock 181).

Annihilation and *Subway* both allow "awe and horror from 'beyond' back into the everyday" rather than resist it.

In *Annihilation*, when the biologist's husband, a member of the previous expedition to Area X, returned home from the expedition out of the blue and in an inexplicable manner, she marvelled at how their mundane domestic life "could coexist with the mystery of his reappearance" (*Annihilation* 153). However, the seemingly improbable gulf between the mundane and the uncanny is bridged after the biologist entered Area X herself, as her experience within Area X is presented as comparable to her experiences outside it. The narrative oscillates between flashbacks of the biologist's life before Area X and her actions in Area X, and sets up a parallel between the biologist's explorations of the ecosystems in abandoned swimming pool and deserted parking lot and her inspection of Area X. Like the swimming pool and the parking lot, Area X also constitutes an ecosystem, only more bizarre and on a larger scale, and it is approached by the biologist in a similar attitude, as the biologist feels in Area X "the flush of discovery I had experienced" (46) when exploring the swimming pool as a child. What is alien and unnatural is familiarized in this sense.

While the narrative brings the ordinary and the fantastical closer, the border between them is shown to be indistinct and porous. Even as the mundane invades the supernatural, the supernatural has seeped and blended into the mundane – it is later revealed that the biologist's husband who returned from the expedition is in fact an inhuman doppelgänger created by Area X, and as the biologist comments, "if members of the eleventh expedition had been able to return without our noticing, couldn't other things have already gotten through?" (157) Mohr calls *Annihilation* a "counternarrative of impurity and pollution" that rebels "against the rhetorical or conceptual attempt to delineate and delimit the world into something separable, disentangled and homogeneous" (Mohr 172). The porous border resists the urge to separate and disentangle, eroding the dualisms of human and nonhuman, of civilization and ecological system. Mohr also points out *Annihilation*'s reflection of "21st-century discourses of hard sciences and critical theory […] conceptually collapsing the strict human/nature, human mind/body, human/nonhuman distinctions," and which empirically evidences "the permeability and dynamic interrelation of materialities," putting "the very definition of the human […] under scrutiny" (171). The biologist transforms into the inhuman under the influence of the spores she inhales in "the Tower," and embraces her own metamorphosis and conversion to the other side of the border:

> The terrible thing, the thought that I cannot dislodge after all I have seen, is that I can no longer say with conviction that this is a bad thing […] Before she died, the psychologist said I had changed, and I think she meant I had *changed sides*. It isn't true – I don't even know if there are sides, or what that might mean – but it *could* be true (*Annihilation* 192).

The psychologist sees a clear border that separates two sides: the reassuring familiarity of conventional reality and the unnervingly undefined, unprobed phantasmagorical unknown. The anthropologist however believes that the two sides, if there are sides, need not be construed as dichotomies - intruders of Area X are not meant to insulate themselves from its uncanny power, but join it. The biologist settles into her inhuman identity which becomes the new normality for her, and the binary-generating border becomes ineffectual when the human assimilates and gives in to the alien.

The subway is a common and familiar space unlike Area X, but is transformed by Han Song into a hub of the weird and the horrific that engulfs the commonplace and produces the grotesque and the uncanny. Unlike in *Annihilation* where the divide between ordinary reality and the realm of the supernatural seems to be sharply defined initially, the invasion of the uncanny into the mundane and the blurred border between the two is implied from the beginning in *Subway*. In the first story "Last Train," the protagonist Lao Wang travels through ghastly and desolate scenes on his way to the subway station: "the city beneath the pitch-black moon looked like a vast cemetery. The buildings heaped up like hills, or like densely packed and uneven burial mounds. The sparce traffic drifted through them tirelessly like phantoms alight with ghost fire" (Han 15). When Lao Wang arrives at the station, he sees "some people waiting for the train on the platform. Like gravestones on the moor, they thrusted into the ground crookedly […] and their souls seemed to have left their bodies" (16). The "pitch-black moon," the city analogised to a cemetery, the traffic likened to ghosts, and the passengers described as "gravestones" create a morbid atmosphere that foreshadows the confounded boundary of the living and the dead, and the uncanny and death-like state the passengers are subjected to on the subway train. Later on, Lao Wang is shocked by the surreal sight of other passengers on the subway falling into a deep slumber and being carried away in glass containers by small humanoid creatures with "grass-green bodies, wearing grey jumpsuits, and have their faces covered by tape-like substance" (21). After Lao Wang escapes from the subway, he wants to discuss with his colleagues about the strange incident but finds communication impossible, "as if he's standing on the other end of Naihe Bridge" (27) from his colleagues. Naihe Bridge connects the worlds of the living and the dead in Chinese mythology, symbolising the profound discrepancy between Lao Wang's everyday life and his unusual experience in the subway.

While the division between everyday life and the strange realm of the subway apparently exists, "Last Train" also shows the grotesqueness of the subway as already embedded in ordinary existence. Free indirect speech is liberally used in "Last Train" which often merges the author's voice with the character's thoughts. When Lao Wang thinks to himself that the subway is "a superb dreamlike entity, and a section of the future accidentally inserted into the present reality" (40), his words recognizably hark back to Han Song's own first impression of subway in Beijing as "noble, enclosed, enigmatic, and mystical" (9) in the preface to the novel. Thus, a numinous and surreal quality is bestowed on a common mode of transportation in real life, blurring the boundary between the commonplace and the fantastical.

Similar to the border in *Annihilation*, the boundary between the ordinary and the fantastical in *Subway* is also blurred and porous. The parallel between abnormal events in the subway and Lao Wang's office work, just like the parallel between Area X and the ecosystems of swimming pool and parking lot, familiarises the subway. The office forms Lao Wang has to fill is compared to the subway which "also constitutes a secret realm with complicated routes in deep caverns […] and is a world of tomorrow with intricate veins that's still forming and wantonly invades the present life" (33). As Lao Wang says to an old acquaintance: "Another world exists underground. Those strange beings are using us to fulfill their purpose, which is exactly the same as the situation in the workplace during daytime" (48). Subway is "another world" but reminds Lao Wang of his workplace, amounting to a malformed doppelgänger, or a distorted reflection of ordinary existence. The green humanoid creatures in the subway also have a touch of the ordinary as they wear clothing reminiscent of factory workers. Their "work" in the subway tunnels parallels office work that Lao Wang sees daily. Mingwei Song sees the humanoid creatures stuffing passengers into bottles as an allusion to "the Red Guards roaming in Beijing during the Cultural Revolution, the age of sleepwalking, as the novel calls it. The nightmare overwrites everyday life, the surreal dismantles the mundane reality, and monstrosity overtakes reason" (*Fear of Seeing* 183-184). The surreal underground realm both alludes to reality and invades it, entangling and blurring narratives of realism and the fantastic.

Just like the inhuman doppelgänger created in Area X that ends up in the human world, the grotesque humanoid creatures in "Last Train" find their way into normality, as Lao Wang theorises:

> […] kill the passengers […] and then, after a period of growing them in the test tube (the glass containers filled with green liquid), they possess the bodies of the dead. The aliens

> would then be able to appear in human forms without any scruples, replace humans as their duplicates, and infiltrate society without being suspected […] The world he lives in is being replaced drop by drop like a pot of soured soup […] a brand new, high-quality, and seemingly more reliable form of life is born; running water now fills the polluted swimming pool anew" (46-47).

Lao Wang welcomes the invasion of the alien beings that are regarded as superior for unknown reasons. At the end of the story, Lao Wang is also mysteriously stuffed into a glass container and put on display in his own office, and like *Annihilation*'s biologist, eventually joins the rank of the inhuman Other that he initially feared and resisted. Alder's observation on borders in weird fiction could be fittingly applied to both VanderMeer's and Han Song's stories: "[…] where gothic works to reinscribe borders, weird collapses them. In their place, the 'natural' order of things is not transgressed so much as recreated" (Alder 10). The alien creatures' invasion and colonisation of human society collapses the border between their subterranean world and the human one; a new order is recreated where inhuman beings bring their inexplicable mode of existence among humans.

3. Science and the Inhuman

Science and technology have a crucial place in human characters' interaction with the super-natural across the border in both *Subway* and *Annihilation*. However, Han Song and VanderMeer's respective focus on social critique and ecological well-being entails that science is positioned differently in relation to the supernatural in the two novels: while scientific methods have a confrontational relationship with and is used to manipulate the supernatural unsuccessfully in *Annihilation*, the subway system in Han's novel, being a symbol of modern scientific and technological achievement, magically engenders and fosters the supernatural. As Mark Rose observes, science in SF "figures on both sides of the human versus nonhuman opposition. […] Science, we may say, is often both humanity's magic and its magical opponent" (Rose 38-39). The two novels' diverging perceptions of science's relation to the supernatural raise different possibilities of where science might be placed across the divide of the human and the nonhuman – in other words, whether science is a compliant but inadequate human tool, or an inhuman agent slipping out of human control.

Following VanderMeer's definition of New Weird fiction, *Annihilation* chooses "realistic, complex real-world models as the jumping off point for creation of settings" and uses "elements of surreal or transgressive horror for its tone, style, and effects" (VanderMeer, "The New Weird Anthology - Notes and Introduction"). The disparity between the "realistic, complex real-world models" and the "surreal or transgressive horror" of Area X corresponds to the clash between the scientific and the supernatural that runs through the biologist's experience in Area X, a clash that could be better understood in the framework of what Istvan Csicsery-Ronay calls the "scientific grotesque." Csicsery-Ronay defines the grotesque as below:

> When something does not conduct itself as scientific rationality asserts/predicts it must, it creates a clash between the concept of an ordered world and concrete, experiential evidence to the contrary. When its disorienting anomalousness also disorients the routines of human lives and institutions, the novum is grotesque (Csicsery-Ronay 182).

Area X consistently disorients and eludes the grasp of scientific rationality embodied by the biologist and the Southern Reach, the institution responsible for investigating the region, fitting Csicsery-Ronay's description of the "scientific grotesque" that is "an embodied, physical anomaly […] whose existence or behavior cannot be explained by the currently accepted universal system of rationalization" (191). The grotesque is also characterised by its "unpredictable evolution" (186), its eternal metamorphosis, its "chaos-producing resistance of bodies" to "the categorical containments of natural physicality that we wish to see as scientific truths," giving rise to "the classificatory uncertainty of the perceiver" in response to "the transmutative fluidity of the object" (188). As Csicsery-Ronay succinctly summarises, "the sublime is law set free of life; the grotesque is life set free of law" (190).

In her encounter with the grotesque of Area X, the biologist tries to maintain scientific rationality to resist the perplexing ambiguity of Area X but eventually fails. Although the biologist confesses to often feeling “that things were not quite what they seemed” in the wild (*Annihilation* 30), she consciously fights against this sensation “because it could overwhelm my scientific objectivity” (30). The biologist’s first major discovery in Area X is the classificatory puzzle presented by “the tower” – peculiarly named since it is in fact an underground tunnel - which could either be inanimate or a living organism. The tower appears to be made of stone, but “the tower breathed, and the walls when I went to touch them carried the echo of a heartbeat” (41). As the biologist proceeds to examine a sample of the tiny hand-shaped creatures growing on the walls of the Tower, she is baffled by it: “the tissue sample from the hand-shaped creature resisted any interpretation, and that was strange but told me nothing. By which I mean I found no cells in the sample, just a solid amber surface with air bubbles in it” (71). Through the confusion of the character’s perceptions, the narrative creates ambiguity surrounding the true nature of Area X.

The ambiguity of the narrative is further heightened by the biologist’s repeated comments about the unreliable subjectivity and fallibility of human perception. The biologist believes that it is futile to maintain objectivity: “nothing that lived and breathed was truly objective – even in a vacuum, even if all that possessed the brain was a self-immolating desire for the truth (*Annihilation* 8).” The biologist remarks on the reports made by the previous expedition that “looking for hidden meaning in these papers was the same as looking for hidden meaning in the natural world around us. If it existed, it could be activated only by the eye of the beholder” (35). The absence of any clarity, objectivity, or scientific impartiality on the observer’s part mirrors the mystifying and everchanging properties of phenomenon observed in Area X. As Csicsery-Ronay remarks, scientific investigation is made grotesque in itself when it changes “the thing being observed and implicate consciousness in the mutations of the objects" (Csicsery-Ronay 192); "most disturbing of all is the possibility that the entities of the world transform themselves *because* we observe them, that their mysterious existence responds to our thoughts" (188).

The biologist eventually admits defeat regarding her investigation of Area X: "we were scientists, trained to observe natural phenomena and the results of human activity. We had not been trained to encounter what appeared to be the uncanny" (*Annihilation* 69). Her scientific approach is grossly inadequate in the face of Area X's uncanny mysteries: "I am aware that all of this speculation is incomplete, inexact, inaccurate, useless. If I don't have real answers, it is because we still don't know what questions to ask. Our instruments are useless, our methodology broken [...]" (192-193). Scientific methods and scientific outlook prove powerless and limited when it comes to the inscrutable nature of Area X that cannot become familiarised or tamed by human sensory or cognitive capability, nor integrated into any pre-existing knowledge system. In the tradition of the weird, *Annihilation* prompts "recognition of the incompleteness or erroneousness of science" that "precipitates the […] revelation of humankind's impotence, resulting in an anti-humanist pricking of humankind's pretensions" (Weinstock 180). As Dunjia M. Mohr argues, the story of Area X is "about letting go of the urge to apply (scientific) narrative logic and deterministic causality to the fantastic materialities of the transformative ecosystem" (Mohr 177). Mohr further elaborates on the opposition between scientific logic and the fantastic ecosystem of Area X in the following way:

> Pitting the familiar fictional mimetic materiality of the Southern Reach agency and its scientists, grounded in an anthropocentric realism that secures itself with facts, technological control, dissection, cataloging, and the containment of binarisms, against the indifferent, encroaching Area X's fantastic ecology – in which materiality is in a constant flux of refraction and where the nonhuman agency tentacularly probes and rhizomatically slips into characters' minds, opening their perceptions for their environments with which they either merge or die […] (178)

Anthropocentric science is pitted against the "nonhuman agency" that opens up the human characters' perception to the inhuman that eludes science.

VanderMeer himself connects the elusive irrationality of Area X to the reality of environmental crisis. In "Hauntings in the Anthropocene," VanderMeer borrows Timothy Morton's concept "hyperobject," which denotes "something that would be otherwise hard to picture in its entirety," and "an all-encompassing metaphor that also has its own reality," to characterise planetary phenomenon such as global warming. To quote VanderMeer:

> In the modern era, the hyperobject of global warming makes such a mockery of what our five senses can perceive that the "fixed laws of Nature" seem more and more, through, for example, extreme weather events, to have become un-fixed, the compass spinning wildly ("Hauntings in the Anthropocene").

Area X, being a metaphor of the reality of environmental catastrophe comparable to global warming, is also a hyperobject, the transformative power of which is "everywhere and nowhere, cannot really be held in one place by the human brain," and therefore confounds the "fixed laws of nature," causing human reaction to it to be "irrational or inefficient or wrong" ("Hauntings of the Anthropocene").

Csicsery-Ronay notes that "the very origin of the term *grotesque* refers back to dark and moist interior spaces" (193), making the gloomy and murky interior of Han Song's subway trains and tunnels a true embodiment of the grotesque. The grotesque is manifested in *Subway* as the variegated and never-ending metamorphoses of human forms, and their unpredictable and chaotic devolution. Human devolution and mutation in *Subway* forms a "constant metamorphic flux, an intimate roiling of living processes that perpetually change before understanding can stabilize them" (190), as Csicsery-Ronay describes. Unlike in *Annihilation* where science is used to tackle the grotesque, modern and futuristic technology of the subway system in Han's novel become the progenitor of inexplicable mutation and devolution. As Jia Liyuan observes, Han Song's "Gloomy China" is

> [...] haunted as it is by the modern ghosts of the age of technology rather than by the classical ghosts of traditional supernatural stories such as those of Pu Songling (1640-1715). The paradox is that the malevolent spirits of the past have not disappeared under

> the democracy and science of today's society, but have, in new forms, become wedded to modern technology and to modern techniques of domination (Jia 103).

"The modern ghosts of the age of technology" thrive in Han's subway tunnels, and in Jia Liyuan's words, are wedded to and dominated by technology. Technology in the subway system formidably acquires agency and mastery over the human passengers, alienating them from conventional reality and the normality of human physicality.

Han Song comments in the preface of the novel that subways in China "have been regarded as an exclusive symbol of cosmopolitan civilization" (Han 11). Subway has an alienating quality not only due to its suggestion of futuristic technology, but because the ideas it stands for, such as modernity and science, have an implicit foreign origin as concepts and institutions formerly imported from the West. In *Celestial Empire: The Emergence of Chinese Science Fiction*, Nathaniel Isaacson remarks on the connotations of "modernity" and "science" during the Late Qing period that:

> Much like the concept of modernity, which is firmly rooted in a Weberian/Marxist model that privileges the development of European institutions and economic systems as a teleological historical standard and allows little room for alternatives, the term "science" is rarely associated with its original meaning as simple "knowledge" and is instead tied to the European Enlightenment's scientific method and a limited field of knowledge production (Isaacson 48).

The foreign roots of modernity and science and the sense of alienation they create seems to still persist in Han Song's portrayal of subway.

In the third story "Symbol," the protagonist Xiaowu discovers that the missing passengers from a subway accident gathers in an underground space and are modified into eldritch creatures with butterfly wings, gecko-like bodies, and mechanical boxes attached to their unnaturally small heads. Xiaowu suspects that "part of the function of thought [of the creature] may have been replaced by the mechanical box beside the head" (Han 185). The mutated passengers tirelessly load batches of plants into trucks then unload them again and again: "they didn't have a leader, but their minds were in sync with each other, and they moved like they were one" (183). The subway passengers are dehumanised by the mechanical gadgets encroaching on their consciousness, gaining animalistic physical features and losing the human traits of independent thinking and individuality. "Imagination and creativity," as the story tells us, should not exist in the subway as "these two rare abilities" have "long been destroyed by the news aggregator and nanomarket monitor" (118). Technology in the story is a controlling and debasing force. The robot-like mutated passengers with their minds colonised and synchronised by surveillance technology could be seen as a metaphor of how, in R. L. Rutsky's words, "technological rationality" subjects humans to the "same processes of quantification, instrumentalization, commodification, and mastery" (Rutsky 186).

Mingwei Song describes Han Song's vision as "an apocalyptic, techno-engineered posthuman future that wipes out all human memories and rational meanings without an exit for redemption" (*Fear of Seeing* 161). Humans' regression into the oblivious, irrational inhuman in *Subway* is indeed techno-engineered, as technology develops its own agency uncontrolled by humans. "Last Train" contrasts people's lack of agency with the dominance of technological innovations: "who is the king of the underworld nowadays? Is it the evolving electric motor, or the autonomous management software, or the six-carriage train itself? In this process, even the driver is perhaps only a puppet" (Han 41). Han Song's comment on people's passive role reflects, in Rutsky's words, an "anxiety about humanity's place in a technocultural system whose operations are so complex that they seem to escape human understanding, much less control" (Rutsky 188). The ever-evolving subway that gains mastery over their human masters and transforms humans immersed in its environment in Han's novel reflects a view of what Rutsky terms "technological determinism," that "technological rationality may have begun as a means for humans to gain control over the world, but it eventually comes to operate autonomously, imposing its own logic of calculation, rational planning, and efficiency on humanity" (Rutsky 185).

Human mutation and degeneration in *Subway* defy the notion of humanity's continuous and assured social and biological progress defined by Darwinian evolutionary thinking, revealing "anxieties about evolution and social Darwinism" (Healey 513) that underlies Han's fiction. Han Song is not unique among Chinese writers in depicting society and individuals in the framework of Darwinian evolution. As Isaacson notes, "evolutionary thinking," which is "understanding and narrating the social and cultural realms in terms derived from evolutionary biology…was one of the most prominent modes of explanation for China's historical circumstances and developmental trajectory" (Isaacson 59). Isaacson cites Lu Xun as a key author who employs the rhetoric of evolution thinking, and notices the "two pervasive themes of the early twentieth century" in Lu Xun's works: "the notion that social Darwinism was a defining feature of evolutionary process, and the trope of society as a suffocating chamber" (Isaacson 58). Han Song's subway is a contemporary, techno-engineered version of Lu Xun's suffocating chamber that smothers all hope of evolution, reflecting Han's real-life anxieties about Chinese social progress, to quote Jia Liyuan: "the constant distresses and absurdities of the real world act as continuous setbacks to the ideals of enlightenment and progress so intimately connected to evolutionary theory" (Jia 109).

Humans in regressive or mutated states caused by technology in *Subway* cast doubt on the belief of humanity's continual future progress guaranteed by modern scientific and technological achievement. In "Symbol," Xiaowu suspects that the mutated passenger with muscle atrophy is a creation of defective science:

> However, what exactly is this experiment that could cause muscle atrophy? Xiaowu feels that this is perhaps not evolution that leads to a more advanced level, but is very likely the failure of a movement of Frankensteinian creation, the inferior product on the production line (Han 156).

The term "Frankensteinian" suggests a flawed creation that gains its deformity from the errors of human science, and which could run amok and turn on its creator. Science in Han's narrative does not bring progress and evolution, but malformation and degeneration. In another carriage, the passengers mutate into creatures "like naked apes with thin cherry-coloured skin, gaunt, bony, fragile, and weak, crawling slowly on all fours" (88). The subway is a celebrated feat of modern technological progress, yet Han Song portrays it not as a space of the "gradual, lawful, and progressive development" of evolution (Isaacson 56), but of chaotic and enervating degeneration.

In the second story, "Sudden Transformation," passengers are trapped in a subway train heading towards an unknown destination and quickly start to mutate, with each carriage exhibiting a different type of mutation. The rock climber Xiaoji is the only one who manages to escape outside the subway carriage:

> The rock climber arrived at the exterior of another carriage. He found that everyone there was in deep slumber, with their heads falling limply on the shoulders of those beside them […] The passengers had greyish countenance, and their bodies were shrivelled and creased, as if they had all become old. Also, some people looked like they were dead. No, they also looked like they were hibernating (Han 73).

Xiaoji's experience follows the narrative formula of Lu Xun's works, where "a false cosmology is established through some form of enclosure. An enlightened individual disrupts this false cosmology" but is unable to awaken the masses (Healey 514). Xiaoji's story parallels Lu Xun's "iron house" analogy in the preface to his short story collection *Call to Arms* (*Nahan*, 1923), where he bemoans the difficulty of enlightening an entire torpid and backward nation:

> Imagine an iron house without windows, absolutely indestructible, with many people fast asleep inside who will soon die of suffocation. But you know since they will die in their sleep, they will not feel the pain of death. Now if you cry aloud to wake a few of the lighter sleepers, making those unfortunate few suffer the agony of irrevocable death, do you think you are doing them a good turn?
>
> But if a few awake, you can't say there is no hope of destroying the iron house (Lu 5).

The metaphor of the suffocating chamber filled with sleeping people sees early twentieth-century China as a stagnant society with little hope of progress; it voices Lu Xun's fear over society's inability to evolve, a fear shared by Han Song:

> "The inability to evolve" is indeed a lingering, ghostly imagery in Han Song's works. There is no direction, no redemption, no opposite shore, no utopia, only a recurring cycle that returns to the starting point again and again. This nightmarish horror makes Han Song full of anxiety about all the seemingly prosperous "progress" in reality. (Wang, "National Allegory in the Age of Globalization" 99)

Han Song's high-speed subway train is not stationary like Lu Xun's iron house, which gives it some semblance of progressive movement; however, it is heading nowhere, with the passengers oblivious to their entrapment and the pointlessness of their journey. If subway symbolises China's ambition of urbanisation in reality, Han's fictional subway nullifies such symbolic significance and "reveals the eternal void, the inexplicable absence of anything meaningful, the absolute nothingness that empties the 'Chinese dream' and the even more grandiose project of 'cosmopolitanization'" (*Fear of Seeing* 186). In *Subway*, technology's agency and authority brings "no direction, no redemption […] no utopia" (Wang, "National Allegory in the Age of Globalization" 99), only irrational and inexplicable devolution that points to the meaninglessness and purposelessness of the frenzied movements that technology subjects humans to.

4. The Uncanny and the Weird

In his essay "The 'Uncanny'" (1919), Freud defines the uncanny as "that class of the frightening which leads back to what is known of old and long familiar" ("The Uncanny" 220). The "uncanny is in reality nothing new or alien, but something which is familiar and old-established in the mind and which has become alienated from it" (240) due to being repressed or discarded as an old belief. As Luckhurst puts it in "The Weird: A Dis/orientation": "the uncanny is a series of displacements that always leads back to the ultimate familiar home: the womb. The interpretive machinery of the uncanny thus inherently domesticates" (Luckhurst 1052). Freud's conception of "the uncanny" underlies the creation of numerous nonhuman entities and metamorphoses in *Annihilation* and *Subway*. The uncanny ultimately points to what is intimately human as opposed to the categorically alien and unknowable, which determines that the inexplicably bizarre beings and incidents in the two novels have human origins and are fundamentally connected to the human that they seemingly repel and are severed from.

Notable instances of the uncanny in *Annihilation* can be placed under three categories Freud labels as "the double," "involuntary repetition," and "omnipotence of thoughts." The biologist first came into contact with the mysteries of Area X through meeting her husband's doppelgänger, and later witnesses doppelgängers of her expedition team in Area X. Doppelgänger verifies the old primitive belief repressed by the rational mind that the dead is not truly dead but exists in some other form, thereby eliciting the uncanny effect. "Involuntary repetition" likewise produces uncanniness, and "forces upon us the idea of something fateful and inescapable" (Freud 237). The surveyor says that what bothers her the most is that their equipment and clothes are all from the past, which means that their expedition is a reenactment of past expeditions and belongs to a long line of repetitive efforts. The biologist also has an uncanny foreboding that her actions in Area X would be infinitely repeated: "as I left the landing, I had the peculiar thought that I was not the first to pocket the photo, that someone would always come behind to replace it, to circle the lighthouse keeper again" (*Annihilation* 104).

As Freud argues in "Remembering, Repeating, and Working Through" (1914), the compulsion to repeat denotes the behaviour of acting out repressed memories repetitively as a substitute for consciously remembering the repressed; unable to identify or make sense of the source of the malaise, the patient compulsively and unconsciously acts it out. This pattern of behaviour underlies the generations of expeditions into Area X that are blindly and mechanically repeated without arriving at any rational understanding of the source of the mystery. The biologist laments after she found the large pile of abandoned journals recording previous expeditions: "Why did they keep sending us? Why did we keep going? So many lies, so little ability to face the truth" (*Annihilation* 119). Memories of preceding expeditions are hidden and repressed, prompting future expeditions to be caught in a cycle of re-enacting the same experience of their predecessors.

VanderMeer connects the uncanny repetition of his fiction to the recurring impact of global warming in reality: "what is global warming but repetitions bound by laws of cause and effect that come to feel uncanny because no one can see the entire outline of a hyperobject (i.e., elements of both cause and effect seem invisible)?" ("Hauntings in the Anthropocene") The uncanniness of Area X thus acquires real-life significance as a metaphor of the aftermath of environmental catastrophe, the cause and effect of which "come to feel uncanny because no one can see the entire outline." As Arwen Spicer also argues, the uncanny repetition of Area X could be read as a parable of how, if humanity could not find effective solutions to environmental degradation but "hide in fantasies that we can control the biosphere through techno-fixes or market fixes," all our effort will simply be going in circles, "a blind and aimless kicking in our sleep" (Spicer 51).

Another uncanny phenomenon in Area X is that humans' physical bodies "melt" or "diffuse" into the environment. The biologist examines samples from the moss and a dead fox and discovers that they "were composed of modified human cells" (*Annihilation* 159). The biologist sees a dolphin that has her husband's eye, and suspects that her husband has diffused into the landscape: "I can't shake the sense that he is still here, somewhere, even if utterly transformed – in the eye of a dolphin, in the touch of an uprising of moss, anywhere and everywhere" (194). The uncanniness of this situation derives from what Freud terms "omnipotence of thoughts," namely "the old, animistic conception […] that the world was peopled with the spirits of human beings" ("The 'Uncanny'" 240). The non-human life forms in Area X composed of human cells is but a variant of such animistic conception of human spirits that populate the world, which, being an antiquated and discarded belief, evokes the uncanny upon manifesting itself again.

In *Subway*, intellectual uncertainty, the return of repressed complex, and involuntary repetition are major elements that contribute to the uncanniness of the narrative. "Intellectual uncertainty" is raised by Freud's predecessor Ernst Jentsch as a cause of the uncanny effect: "he ascribes the essential factor in the production of the feeling of uncanniness to intellectual uncertainty; so that the uncanny would always, as it were, be something one does not know one's way about in" ("The 'Uncanny'" 221). Freud dismissed Jentsch's claim, but eventually conceded that it has some validity. As Nicholas Royle puts it: "[…] Ernst Jentsch's notion of the uncanny as bound up with 'intellectual uncertainty' – a notion that, throughout the 'Uncanny', Freud is repeatedly concerned to reject, but that repeatedly comes back to haunt" (Royle 138). In "Sudden Transformation," the protagonist Zhou Xing gets on a subway train that does not stop. Faced with this surreal predicament, Zhou Xing becomes confused about the reality of his experience. He wonders whether the normality people are accustomed to is illusory, while the abnormal is the actual reality:

> Maybe the experience at this moment is real and normal. The darkness shrouding the train is indeed lasting and boundless, and this is the reality for everyone. When people took the subway in the past, they were only repeatedly practicing scenes in an advanced simulator, while platforms that appeared before their eyes punctually every other few minutes were but tantalizing yet short-lived chimeras in life, which were pre-configured by intelligent machines like super computers […] (Han 66)

Zhou Xing's intellectual uncertainty effectively produces an uncanny effect by confounding reality with illusion and blurring the line between the two.

The return of repressed complex, which in *Subway* involves the resurfacing of the weaning complex as defined by Jacques Lacan, also creates a feeling of uncanniness. Luckhurst's claim that "the uncanny is a series of displacements that always leads back to the ultimate familiar home: the womb" (1052) is supported by Han Song's novel, which elicits an uncanny sensation through the recurrent theme of a desire to return to the womb, or in other words, the resurfacing of the weaning complex.

In *Family Complexes in the Formation of the Individual* (1938), Lacan posits that the weaning complex represents "the imago of the mother" that "has a place in the depths of the psyche" and is particularly difficult to sublimate (Lacan 21). Lacan notes the traumatizing experience of birth which "separates the infant from the womb, a premature separation from which comes a malaise that no maternal care can compensate for" (20), as well as the discontent that dominates the infant's life, which is caused by "an insufficient adaptation to the breakdown of the conditions of environment and nourishment that constitute the parasitic equilibrium of intra-uterine life" (19). Hence there arises "the longings for a paradise lost before birth" (23).

In "Symbol," Xiaowu expresses a desire to "retreat into the womb, and hide in that dark and narrow tunnel covered with a protective layer of scab, and to never come out again" (172). Similarly, Lao Wang, the protagonist of "Last Train," fulfils such desire of returning to the fetal state as he is put into a glass container by the humanoid creatures, where the old man, once disgruntled with life, finally seems happy:

> The fluid Lao Wang was immersed in looked extremely rich and mellow, it glowed with a phosphorescence like that of the sea, as if it contained the infinite tension of life. Lao Wang looked perfectly content, like a fetus sleeping soundly in the womb. This happened to be his ancient primordial form (54).

These symbolic imageries of the womb embodied by the eerie subway tunnel and the glass container produce an uncanny effect by uncovering the primal and familiar in the futuristic and unfamiliar.

Involuntary repetition is at the foundation of Han's conception of the subway, being based on "the first subway line in Beijing" that "was a circuit in which a train could theoretically run forever" (*Fear of Seeing* 181), repeating the same trip without progressing beyond. The mutant passengers in "Symbol" that load batches of cargo into trucks then unload them over and over again is an extension of the subway's cyclical and recurrent journey. As previously mentioned, Han's works are haunted by the anxiety for society's inability to evolve, the failure of Chinese history to "break free from the destined self-repeating cycles" (Wang, "National Allegory in the Age of Globalization" 99), and "changes made in the name of progress […] sacrificed to the cycle of history" (Jia 105). To quote Mingwei Song:

> Lu Xun's reflections on history, which is not a progressive linear evolution, have been continued in Han Song's writing and provided the foundational motivations for his world-building. Han Song represents history as a movement of eternal return, a repetitive sequence of doomed failures, a regression rather than progress, which makes change an illusion (*Fear of Seeing* 171).

The uncanniness of the repetitive cycles of subway journeys echoes what Han Song perceives as the cyclical repetitions of Chinese history; the uncanniness of the eternally circling subway train haunts the textual space of Han's novel and the reality it alludes to alike.

Opposed to the familiar human quality of the uncanny is the irreducible otherness of "the weird," giving rise to entities that defy rational theorising and cannot be subsumed under the old and familiar of the Freudian uncanny. Lovecraft identifies weird fiction as the "literature of cosmic fear" that represents an assault on the "fixed laws of nature" (Weinstock 179) or scientific rationalism with its unknowable mysteries and unnamed dread that cannot be rationalized or philosophised. More pertinently, as Roger Luckhurst comments in "The weird: a dis/orientation," "the weird" is antithetical to the uncanny in the sense that the weird "twists or veers away from familiar frames and binary distributions," which "means that it is not reducible to the Gothic's economy of the uncanny or its compulsion to repeat […] the monstrous breaches of the weird do not return us to something familiar but repressed, but instead veers away to invoke a dread that is irreducible, that cannot be reductively interpreted, translated or returned" (Luckhurst 1052). As Emily Alder puts similarly, the monsters of "the weird" embody a "radical unremembered alterity" that is "unrepresentable and unknowable, the evasive of meaning" (Alder 11).

Annihilation and *Subway* both feature attempts to delineate radical alterities that break away from the familiarity of humanity and cannot be pinned down with the certitude of scientific positivism; from human building blocks, the two novels endeavour to create the categorically inhuman. In *Annihilation*, the biologist's investigation of the supernatural in Area X culminates in her confrontation with "the Crawler," the enigmatic creature at the bottom of "the tower." The Crawler, more than any other indecipherable entities or strange phenomena in Area X, embodies the monstrous of "the weird" that is "unrepresentable and unknowable, the evasive of meaning" (Alder 11). The biologist gives a confusing account of the Crawler's appearance: "it was a figure within a series of refracted panes of glass. It was a series of layers in the shape of an archway. It was a great sluglike monster ringed by satellites of even odder creatures. It was a glistening star" (*Annihilation* 176). The Crawler bafflingly combines the features of such diverse objects as "panes of glass," "archway," "slug," and "star" – objects that naturally bear no relationship or resemblance to one another.

Alder writes about the mysteries of weird fiction that "those secrets depend for their awesome terror […] on the inability of language to represent those secrets as anything other than hints and secrets […] The unknowability of the weird is closely tied to its unspeakability" (Alder 15). The biologist's inability to articulate her impression of the Crawler indicates the Crawler's "unknowability." The Crawler is not only unknowable, but evasive in the literal sense as "the Crawler would tremble into being and then wink out again" from the biologist's sight (*Annihilation* 177). The little information that the biologist gathers about the Crawler is also repeatedly presented as highly unreliable and strongly coloured by her speculative interpretations:

> There, in the depths of the Tower, I could not begin to understand what I was looking at and even now I have to work hard to pull it together from fragments. It is difficult to tell what blanks my mind might be filling in just to remove the weight of so many unknowns (175-176).

Eventually, the biologist finds all her senses to be inadequate to piece together a clear and accurate impression of the Crawler: “what can you do when your five senses are not enough? Because I still couldn’t truly see it here, any more than I had seen it under the microscope, and that’s what scared me the most. Why couldn’t I see it?” (178)

While the grotesque of Area X erodes the order of scientific objectivity and rational investigation, the narrative also never completely relinquishes scientific rationalisation of the supernatural, and still endeavours to create meaning out of the unfathomable. The biologist continues to theorise about the mechanisms by which Area X functions even though her speculations are aimless and futile. When facing the cryptic writings on the walls of “the tower,” the biologist states: “even though I didn’t know what the words meant, I wanted them to mean something so that I might more swiftly remove doubt, bring reason back into all of my equations” (28). And even when the biologist’s scientific investigations repeatedly fail, and when her survival is in question, the biologist still finds “the remnants of the scientist in me, trying to regroup, trying to apply logic when all that mattered was survival” (142).

Despite the biologist acknowledging her failure to decipher Area X, Area X still receives a rational and logical explanation in the end:

> Think of it as a thorn, perhaps, a long, thick thorn so large it is buried deep in the side of the world. Injecting itself into the world. Emanating from this giant thorn is an endless, perhaps automatic, need to assimilate and to mimic […] It creates out of our ecosystem a new world, whose processes and aims are utterly alien – one that works through supreme acts of mirroring, and by remaining hidden in so many other ways, all without surrendering the foundations of its otherness as it becomes what it encounters (190-191).

Compared to the diction of her earlier observations, the biologist’s language here is more assertive and authoritative, and thus definitive. Although Area X defies rational understanding and human sensory perception, Area X is still shown to function by intelligible, albeit otherworldly rules. The narrative of *Annihilation* ultimately rests on the creation of meaning rather than being resigned to the absence of meaning.

Unlike VanderMeer, Han Song has no direct involvement in the creative or academic discourse of weird fiction, but his novel *Subway* could easily be categorised as weird fiction given its many commonalities with the tradition of the weird. Human devolution and mutation in *Subway* produces monsters that, like the monsters of the weird, represent an unequivocal otherness that "don't depend on 'the return of any repressed' or use 'gothic's strategy of revenance'" (Alder 11), but "are presented as indescribably different, as new corporeal forms rather than recreations of mythical creatures" (Alder 14). In "Symbol," one mutated character becomes "more skeleton-like than a skeleton;" his muscles atrophy which "made him almost completely lose human shape. Dripping green slime hung from his torso, and no fewer than a thousand small, restlessly quivering crimson ears grew all over his body" (Han 152). The graphic details of the character's loss of human shape mark the transformation of the human into the inhuman. Xiaowu realises the utter alienness and radical alterity produced by such mutations – if the subway passengers "will all undergo astounding transmutation," then "as the subway finally reaches its destination, what surges out of the subway doors will be a great variety of unimaginable monsters, who will be exactly like aliens by appearance" (137-138).

The monstrosities produced by the subway tunnels represent an otherness opposed to the human not only due to their loss of human features, but also because they evade meaning and are unavailable for interpretation. As a subway employee in "Symbol" describes the peculiar plant called "friend of subway" (*ditie zhiyou*) that grows in subway tunnels:

> Recently, "friend of subway" increasingly likes to turn into a pair of eyes. Those eyes are dark as hell, empty and abysmal, with nothing inside them, and no detectable sign of mental activity, emotion, or liveliness […] they gaze at me long and hard, calmly and apathetically […] Information from the grave behind the eyelids rushes in like tides, but has no intention to communicate with me (171).

The fact that the plants are named "friend of subway" indicates the subway's affinity to the plants' characteristics – "friend of subway" carries an abundance of meaning and information but resists understanding. The plants' "emptiness" and "nothingness" are relative, not absolute;

the human character is aware that the emptiness he perceives results from the limitation of human cognition rather than the inherent vacuity and unintelligibility of the supernatural phenomenon in the subway tunnels.

5. Conclusion

This chapter begins by contextualising Han's and VanderMeer's novels. Han is concerned about the façade of economic and technological progress that belies the historical cycles of social regression and technocratic control that ensnares the nation. VanderMeer uses weird fiction as a means to gain deeper understanding of the environmental crises of the Anthropocene, his Southern Reach trilogy being inspired by the Gulf Oil Spill. Han's subway thus counters the official narrative of progress and prosperity with inane devolution and cyclical futility, while VanderMeer's Area X spreads and contaminates like the oil spill, but is initiated by an inhuman agent that counters the pollution of human technology. The second section of the chapter observes that the mundane and the supernatural are deliberately set up as comparable parallels in *Subway* and *Annihilation*, which allows the two to contact and mingle across porous borders, thus disintegrating the boundary between the human and the inhuman. The third section discusses *Subway*'s and *Annihilation*'s contrasting treatment of science's relation to the human-inhuman binary. Area X's grotesque phenomenon, which are in constant and chaotic flux, defies systematic scientific enquiry. In *Subway*, however, technology engenders the grotesque that disempowers and unpredictably transforms humans. The final part of the chapter examines the uncanny effect of transhuman monsters and the irreducible otherness of the Weird. *Subway* and *Annihilation* create the monstrous both through uncanniness, which ultimately can be returned to primal and familiar human roots, and the categorical otherness of weird fiction, which cannot be reduced to the knowable or translated back into the human.

If humans and aliens in Liu's and Clarke's novels are defined by their antithetical attributes, Han and VanderMeer refrain from defining the human-inhuman binary, set out to collapse the border between them, and resist a rational, coherent, or stable understanding of either the human or the inhuman. Han's subway and VanderMeer's Area X are created as inversions of conventional reality in response to different social issues and contexts, and are in this sense reflections of the human; yet both produce the inscrutable and indefinable inhuman Other that infiltrates and reshapes the human order.

Chapter 4:

Artificial Intelligence in Isaac Asimov's and Hao Jingfang's Science Fiction

Rapid advances in the learning and processing capacities of artificial intelligence over the past few decades have seen the advent of new types of AI such as artificial neural network that possess increasingly adaptive, flexible, and versatile learning power, which continue to close the gap between AI and capabilities of the human brain. These developments feed into speculations about the prospect of an "artificial general intelligence" (AGI) that could match and even surpass the intellectual powers of the human brain in every aspect, and the likelihood of a "technological singularity" where an intelligence explosion renders human input no longer necessary in AI's continuous evolution.

These progresses in AI research and concrete visions of AI's future potentials indicate that unlike extraterrestrial life and posthuman monsters, AI is not considered solely as fictitious inventions of SF imagination, but is an imminent, real-life, and formidable technological Other that will continue to be integral to human civilisation. While aliens and posthuman creatures are often metaphors of human nature or social problems in SF narratives, AI's presence in existing reality is more conducive to AI in SF stories being considered as a subject in itself with narrative significance derived from its built-in mechanical and digital properties, rather than principally as symbolic representations of other issues. Isaac Asimov's and Hao Jingfang's stories on AI, which this chapter focuses on, are cases in point. Asimov makes it clear in an essay in *Robot Visions* (1990) that "I was determined not to make my robots symbols," but "engineering devices" and "machines to serve human ends" (453). Hao Jingfang's AI stories in *Humanity's Other Shore* (*Ren zhi bi'an*, 2017) are accompanied by non-fictional essays introducing computational principles behind AI and giving advice on adapting to the age of AI, making Hao's fictions extensions of her real-life concerns about AI's social impact.

This chapter will examine Asimov's short story collection *The Complete Robot* (1982) in comparison with Hao's short story collection *Humanity's Other Shore*. *The Complete Robot* contains thirty-one short stories written between 1939 and 1977 (*The Complete Robot* xiv), which are grouped into four categories in the order of "non-human robots," "immobile robots," "metallic robots," and "humanoid robots" (ix-x). With each category, the robots become more sophisticated as well as more humanised in physical form and mental capacity. The collection includes the short story "Runaround" (1942), which is noteworthy for the fact that it contains the first usage of the word "robotics," which was coined by Asimov to denote the study of robots; it is in the same story that Asimov first listed his famous "Three Laws of Robotics" (*The Complete Robot* xii). *Humanity's Other Shore* contains six short stories and two essays. The stories centre around AI in various forms, including digital programmes, humanoid robots, and artificial superintelligence, and are arranged roughly according to AI's possible levels of future development from the most recent to the most distant (*Humanity's Other Shore* xi). According to Hao, each story represents a question she has:

> In "Immortality Hospital," I was interested in the relationship between human body and identity; in "The Problem of Love," I discussed if AI could understand a human's inner emotions when measured by an external indicator; in "Humanity's Island," I pursued the issue of the conflict between perfection and freedom (xi).

The two essays that complement the stories introduce the technologies behind AI and discuss the future of AI with two pivotal questions in mind: whether AI will destroy humanity, and to what extent AI will replace human labour (xiv).

Asimov is arguably the most prominent writer of robot stories in world SF, and as the inventor of the Three Laws of Robotics, his influence is inescapable. Asimov's Three Laws are an answer to the pervading trope in SF depicting robots as irrational agents destroying their human creators as punishment of humanity's Faustian aspirations. Asimov is against such unsound characterisation of robots that abandons any pretension to scientific rationality and equips his robots with the Three Laws as "built-in safety features": "I set it up so that a robot could not kill his creator, and having outlawed that heavily overused plot, I was free to consider other, more rational consequences" (*Robot Visions* 453-454). Hao Jingfang rose to prominence after her novelette *Folding Beijing* won the 2016 Hugo Award for Best Novelette. *Folding Beijing* takes an interest in AI through examining the social consequences of unemployment due to prevalent machine labour. In relation to Asimov, Hao's story "The Problem of Love" (*Ai de wenti*) in *Humanity's Other Shore* directly references Asimov's Three Laws of Robotics, and her stories follow Asimov's vision of robots not as symbols of senseless violence, but as servants of humanity whose conflicts with humans have subtler, rational explanations, arising from AI's inhuman ways of thinking. However, Asimov's and Hao's intelligent machines follow opposite developmental trajectories, with Asimov's robots becoming progressively humanised with greater intelligence, and Hao's digital systems turning increasingly inhuman in outlook and intent as they become more advanced.

In the first section of the chapter, I will examine the literary and social contexts that motivate Asimov and Hao's conceptualisation of AI, namely Asimov's repudiation of "Frankenstein Complex" that stereotypes robots as foes of humanity who cause senseless and inhuman horror, and Hao's concern with the danger of an AI-dominated society where our self-knowledge and identity are in thrall to digitisation, and humanistic beliefs in individual agency and intrinsic self-worth are undermined. In the second section, I will discuss AI as humans' doppelganger that is both a duplication that blurs the distinction between the original and the double and confounds the hierarchy between the two, and a heterogenous Other that supplants human identity and experience and challenges essentialised views of the human. In the third section, I will consider Asimov's and Hao's different responses to the erosion of boundaries between human and AI by AI's doubling: Hao entrenches the demarcation through upholding essentialised human attributes, making the emotionless AI the antithesis of human essence epitomised by emotions; Asimov removes the border through recalibrating definitions of the human and dissolving the hierarchical binary of superior human and subservient AI. In the fourth section, I will delineate Asimov's and Hao's visions of the end of AI that represent two opposing evolutionary directions of AI: Asimov's robots that become indistinguishable from humans physically, behaviourally, and by definition, and subscribe to human values and mentalities despite being morally and intellectually superior to humans, and Hao's AI that develop non-anthropocentric outlooks and objectives, defy anthropomorphism, dismantle essentialised views on human attributes, and impose their own understanding of a fully quantifiable and computable world on humans. I will argue that although Asimov's humanised robots that emulate their creators and Hao's AI Other that cannot be humanised are antithetical prognoses, both outcomes are inherent in AI's nature as the double of the human.

1. Frankenstein Complex and the Digital Age

Asimov and Hao both conceive of intelligent machines as imitations of human intellect, but the manners of AI's mechanical and digital imitations and their implications for humans in Asimov's and Hao's works are in response to different literary and social contexts. Asimov is preoccupied with the "Frankenstein complex" which he finds ubiquitous in the literary tradition of robot stories, and Hao is concerned with the dehumanising effects of AI, as digitisation will likely take hold of every aspect of human life in the near future. In "'He's a Machine—*made* So.': Rethinking Humanlike Robots in Issac Asimov's *I, Robot*," Hawk Chang retraces the history of robot stories to the starting point of Karel Čapek's *R.U.R.*:

> The word robot was first introduced in 1920 in Czech playwright's work R.U.R. (*Rossum's Universal Robots*), in which the Czech word "robota" refers to "serf labor" and "drudgery," simultaneously connoting this artificial invention's "enslavement." In the wake of such a human-centered relationship, robots are always already the non-humans, the absence, and consequently the subordinated beings in the hierarchical dichotomy. (Chang 103)

Similar to *R.U.R.* which assigns robots to a subordinate status, Asimov's Three Laws of Robotics are "problematic due to their human-centered perspective," as Chang remarks (Chang 104). However, Asimov does aim to subvert conventions of robot storytelling that descend from *R.U.R.*, particularly the stigma of robots symbolising the absence of humanity and their dichotomous antagonism with humans. Asimov terms the trope of robots turning into killing machines and rising against human masters the "Frankenstein complex," and explains his distaste for it in the introduction to his short story collection *The Rest of the Robots* (1964):

> And one of the stock plots of science fiction was that of the invention of a robot — usually pictured as a creature of metal, without soul or emotion. Under the influence of the well-known deeds and ultimate fate of Frankenstein and Rossum, there seemed only one change to be rung on this plot. — Robots were created and destroyed their creator; robots were created and destroyed their creator; robots were created and destroyed their creator —
>
> In the 1930s I became a science-fiction reader, and I quickly grew tired of this dull hundred-times-told tale. As a person interested in science, I resented the purely Faustian interpretation of science. (*The Rest of the Robots* xii)

Asimov further declares that "never, never, was one of my robots to turn stupidly on his creator for no purpose but to demonstrate, for one more weary time, the crime and punishment of Faust. […] My robots reacted along the rational lines that existed in their 'brains' from the moment of construction" (*The Rest of the Robots* xiii). To push back against depictions of robots as emotionless instruments of violence, Asimov humanises robots, sometimes to the point where his robots have crossed the boundary separating humans and machines. By blurring the boundary between humans and robots, Asimov explores possibilities of eliminating the tension and antagonism between the two species. Asimov's robots are humanised also in the sense that they are rational beings as much as humans. Robots' innate rationality is determined by their scientific programming, which indicates Asimov's rejection of the idea that science could give rise to irrational horror.

Hao Jingfang's stories are informed by her practical apprehensions over AI's dehumanisation and displacement of humans. Hao Jingfang's work at the China Development Research Foundation includes a project that began in 2017, entitled "The Impact of the Development of Artificial Intelligence on Labour and Employment" (Zhou, "Hao Jingfang: The Real Life of a Science Fiction Writer" 34). Hao's interest in AI is also a reflection of her fascination with human consciousness, since she believes that AI holds up a mirror to how the human mind functions, as Hao explains in the preface to *Humanity's Other Shore*: "I'm interested in AI because I'm interested in humans. We can better understand humans through understanding AI" (Hao xii). AI's digital replication of human brain's functions and activities in Hao's stories parallels real-life advances in AI technology that models AI on human neural network. According to an online report on a seminar co-hosted by Berggruen Research Center at Peking University and Leverhulme Centre for the Future of Intelligence at the University of Cambridge, which is titled "AI Narratives in Contemporary Chinese Science Fictions,"

> Recent Chinese AI sci-fi highlights the ongoing development of AI technology […] Symbolicism, also known as logicism or computationalism, one of the two major approaches to AI, advocates using axiomatic logic systems to build a set of guiding rules for an intelligent agent. It has gradually lost its dominant position to the other school of thought: connectionism. A form of bionics, connectionism suggests that we should design AI to emulate human neurons, creating systems similar to neural networks in the brain. Connectionism underlies well-known contemporary concepts such as big data, neural networks, and deep learning.

The report points out that "the shift towards connectionism has been keenly grasped by Chinese sci-fi writers" and "algorithms based on neural networks have now emerged as a popular focal point in their work," and lists Hao Jingfang's story "Where Are You" (*Ni zai nali*) as an example of imagining AI based on connectionism. As much as Hao sees AI as a mirror to human consciousness, she recognises a fundamental otherness in AI's nature that is built on abstract data and statistical calculation, which alienates people from their physical and emotional experience and humanistic values. To quote her essay “How Long until Super Artificial Intelligence Appears”:

> As for the future […] I am worried about humans disregarding their own emotional features more and more, while subsuming themselves entirely into the digital world […] one characteristic of complete digitization is the belief that everything about a person can be represented by their data records […] if so, it will not be the case of artificial intelligence resembling humans, but humans resembling artificial intelligence […] If we can no longer understand emotions beyond data, or recognize some meaning of life more important than the optimisation of profits […] then we can no longer be called the paragon of animals, but have to give the title to some other beings […] (Hao 308-309)

Hao believes that what makes human species the epitome of evolution is its emotional intelligence and ability to find meaning in life, neither of which could be gained from AI’s speciality in “data records” and “optimisation of profits.” Hao proposes a return to humanism to counter the onset of the posthuman age of AI, or in her own words, “to return to faith in the human itself, with human as the ideal” (Hao xv). The dichotomy of emotional and corporeal humans and emotionless and immaterial AI in Hao’s stories closely reflects her apprehension of the defeat of humanism in the face of AI’s domination.

2. AI as the Double

As imitations of human mental capabilities and physical appearance, intelligent machines’ relationship with humans can be best understood in the light of the psychoanalytic concept of doppelganger. In “The ‘Uncanny’,” Freud defines the invention of doppelganger as the return of mankind’s repressed primal narcissism which originally functions as “a preservation against extinction,” but threatens to devitalise the host and take over its identity by turning from “an assurance of immortality” into “the ghastly harbinger of death” (Freud, “The ‘Uncanny’” 235). The doppelganger is conjured up to preserve and prolong the existence of the host, but achieves the opposite effect by overshadowing and supplanting it, an outcome repeatedly seen in

Asimov's and Hao's stories of AI doubles created by humans. In Asimov's "Evidence," district attorney Stephen Byerley is suspected of being a humanoid robot who is built by the actual human Byerley – who became disfigured and disabled in an accident – as continuation of his life and aspirations before being crippled. The robot double, while being "an insurance against the destruction of the ego" for Byerley (Freud, "The 'Uncanny'" 235), also signifies his social, if not physical death by taking Byerley's place in society and leaving him behind "as the old, crippled teacher that no one ever saw" (*The Complete Robot* 445). It should be noted that Byerley's true nature as either robot or human is deliberately left ambiguous, amounting to a narrative attempt to obfuscate the distinction between the human and the robot double.

In "Galley Slave" (1957), a professor frames a robot in his employment to ruin the robot company's reputation, in an attempt to stop robots' takeover of academic work. The professor inveighs against a future of machines replacing humans in every step of physical and mental labour:

> "Your robot takes over the galleys. Soon it, or other robots, would take over the original writing, the searching of the sources, the checking and cross-checking of passages, perhaps even the deduction of conclusions. What would that leave the scholar? One thing only - the barren decisions concerning what orders to give the robot next! I want to save the future generations of the world of scholarship from such a final hell." (*The Complete Robot* 348)

As humans' intellectual doubles that carry on their work, the robots would eventually condemn humans to an intellectual death by depriving them of sensory and mental experience and restricting their contact with the world to robots only. Like Byerley in "Evidence," mankind would leave all living and striving to robots and retreat into the shadows. As Asimov writes in his essay "The Myth of the Machine": "surely the *great* fear is not that machinery will harm us – but that it will supplant us. It is not that it will render us ineffective – but that it will make us obsolete" (*Asimov on Science Fiction* 160). I would add to Asimov's statement that the greatest fear of all is not that machinery will supplant us in certain jobs, skillsets, or social activities, but that it will steal our identities and sense of self.

In Hao Jingfang's "Where Are You," Ren Yi's company developed an AI service programme called "Doppelganger" (*fenshen*) that mimics its owner's personality and speech by "fully digitizing a person from the standpoint of the forty dimensions of human personality" (Hao 6). Its function is to stand in for its owner when the owner is unavailable. Ren Yi's "Doppelganger" speaks ahead of him to comfort his girlfriend Susu during his quarrel with her:

> Ren Yi heard his own voice and felt greatly astonished, although he knew where this voice came from and what kind of big data learning programme was behind it. But to hear this voice on the spot speaking ahead of him to the woman he loved […] It was like seeing some other person take his place and snatch away his happiness, or like his soul leaving the body and looking at himself. (Hao 19)

The description "like his soul leaving the body and looking at himself" conveys the impression of the abstract digital programme taking over Ren Yi's physical identity and acquiring corporeality while leaving Ren Yi disembodied. Susu, on the other hand, thinks that the programme cannot represent Ren Yi and only makes him seem insincere. Susu's distaste for "Doppelganger" and its general failure to win customers shows that while the AI double is conceived and marketed as an extension of the human, there is nonetheless no perceived cohesion between the identity of the human and his digital imitation, since the AI double diminishes, disrupts, and displaces human presence rather than expands and sustains it.

In Hao's "Immortality Hospital" (*Yongsheng yiyuan*), the titular hospital "cures" dying patients by cloning them and replacing them with clones, and it keeps the patients' families in the dark by denying them visits. The protagonist of the story, Qian Rui, sneaks into the hospital to visit his dying mother, but returns to find another mother at home who seems fully recovered; Qian Rui grows suspicious and starts investigating the hospital. The clones of immortality hospital are created by implanting computer chips in their brains to guide their minds' maturation. In response to detractors' protest that the clones are robots instead of real humans, the founder of the hospital argues that the clones "can't be said to be fake people, only new people […] who're continuations of the patients themselves […] who live their lives anew" (Hao 70). However, many do not view the cloned double as perpetuation of the original human – the double does not preserve, but erases and overwrites the original. Since there is no continuity between the original's past lived experience and the double's new life, there is no continuity between their identities. As a private investigator in the story declaims: "The real person and the fake person are two people, you let one die and be replaced by another fake person who goes home […] this is heinous murder and disrespect of life" (Hao 56).

The doppelganger undermines the host also by confounding the "order of representation" between the original and its replication and creating an effect of "duplicity without original" (Derrida 84). In Nicolas Royle's words, the doubling makes it "no longer possible to know which comes first or indeed whether there is a 'first'" (Royle 132). The original becomes "the double of his double, was no longer anything but the double of his double" (Derrida 84). In Hao's "Where Are You," the doppelganger programme speaks before Ren Yi in his own voice, rendering Ren Yi's later response a double of the speech of his AI double. The original becomes an imitation of the duplicate, which leaves Ren Yi feeling depersonalised and creates an effect of "duplicity without original." This situation is also examined in Asimov's "The Bicentennial Man." The robot Andrew gradually discards his mechanical traits and becomes increasingly humanised. Andrew is extremely accomplished and "contributed artistically, literally, and scientifically to human culture as much as any human being now alive;" the prosthetic technology he invented is widely used among the human population and results in his own mechanical organs being "identical to some of those in a prosthetized human being" (*The Complete Robot* 550). By using Andrew's prosthetology to alter their bodies, humans imitate robots who are imitations of human life in the first place; humans thus become doubles to their own robot double.

The stories discussed above demonstrate that AI's duplication of the human is underpinned by the double's otherness, in the sense that the double does not extend but usurps the original's experience, cannot be assimilated into the original's existence or cohere with its identity; the AI doubles undermine and overturn the representational hierarchy, confronting humanity as an Other that is external to and irreconcilable with itself. As Gry Faurholt notes in "Self as Other: The Doppelgänger," the doppelganger embodies both excessive sameness and antithetical difference; it "subverts our notion of personal identity by taking to a terrifying extreme two means of identity formation: identification and othering" (Faurholt, 2009). The doppelganger encapsulates AI's relationship to humans as both mirror image and Other.

3. Drawing and Blurring the Boundary

The distinction between humans and their AI double in material composition, and especially the different physical configurations of human mind and machine intelligence, are similarly noted by Asimov and Hao in their stories and their essays that supplement the stories. In his essay "Intelligences Together," Asimov remarks that human and computer intelligences differ because "the human brain is built up essentially of proteins and nucleic acids" and computers "are built up essentially of metal and electron surges" (*Robot Visions* 451). The robot Cutie in "Reason" put it unflatteringly that humans are made of "soft and flabby" flesh and obtain energy through "the inefficient oxidation of organic material," while robots "absorb electrical energy directly" and are "composed of strong metal" (*The Complete Robot* 231-232). In "The Bicentennial Man," the World Court establishes the essential distinction between human and robot as humans' "organic cellular brain" and robots' "platinum-iridium positronic brain" (*The Complete Robot* 553). In her essay "How Long until Super Artificial Intelligence Appears" (*Li* *chaoji rengong zhineng daolai haiyou duoyuan*), Hao argues that AI does not have emotions due to its different physical make-up: "human emotions are biochemical in nature and are intervened by hormones, and it may be difficult for artificial intelligence with properties of pure electronic information to have similar responses" (Hao 287). In "Immortality Hospital," the clones are viewed by skeptics as robotic since they are "controlled by computer chips and programmes" (Hao 56) implanted in their brains, which are distinguished from humans' untampered organic brains.

However, humans' insistence on clear demarcations between themselves and AI in Asimov's and Hao's stories is not due to patent physical disparities between the two, but is rather prompted by AI's uncanny similitude to themselves. In "Immortality Hospital," Qian Rui's vehement rejection of the clone of his dying mother stems from his denial that an artificially developed and partially computerised life form could be an exact replica of his mother, from physical appearance to behavioural patterns, to memories. To quote Ban Wang:

> What unsettles and frustrates Qian is the premise that a human self needs not, and cannot, be distinguished from a digitalized and genetically engineered robot. From a purely biomedical and digital perspective, a person's biochemical makeup works like a biomedical algorithm, undergoing changes all the time. (Wang, "Trauma, Artificial Intelligence, and Capitalism in Hao Jingfang" 255)

The "digitalized and genetically engineered" double of Qian Rui's mother agitates his fixed and essentialised conception of what is human with its perfect replication. Furthermore, as is discussed in the previous section, the AI double usurps human identities and subverts the order of representation, posing an existential threat to humanity - as Asimov puts it, "those computers seemed to steal the human soul" (*Asimov on Science Fiction* 162).

According to Derrida, the double's disturbance to the order of representation can be mitigated by "the simple opposition distinguishing the original 'in person' from his mask, his simulacrum, his double" (Derrida 84). The AI double's unsettling nature would lead to humans establishing an opposition that discriminate themselves from AI, and this is reflected in Asimov's and Hao's stories as humans' disavowal of any potential for developing affinities between mankind and robotkind. In "The Bicentennial Man," the robot Andrew finds himself in an awkward position where he is both too human to be a mindless machine and too mechanical to be completely human. Seized by the desire to be fully human, Andrew seeks legal recognition as one. When Andrew brings up his invention of "prosthetology" in the hope that this scientific contribution would favour his request to be recognised as human, the Chairman of the Science and Technology Committee reminds him that his promotion of prosthetics will be remembered by humanity negatively: "it will be said it was part of a campaign to roboticize human beings, or to humanify robots; and in either case evil and vicious" (*The Complete Robot* 552). As the chairman informs Andrew, any difference between humans and robots would be grasped upon and further entrenched: "to any human being who is intent on keeping up the barrier between himself and a robot, those differences are a steel wall a mile high and a mile thick" (554). Hao's "The Problem of Love" tells the story of the dysfunctional Lin family, whose conflicts are exacerbated by the presence of a humanoid robot butler called Chen Da. The son Lin Shanshui resents Chen Da for being an integral part of the family and developing a closeness with his own father that he does not have. He reminds Chen Da that he will never be human: "You're a machine, forever a machine. A machine we bought to serve us […] Do you think you can know me from the meaningless data entered in your brain?" (Hao 100-101). In both cases of Andrew and Chen Da, humans' insistence on the unbridgeable division between themselves and robots is only a testament to their naturally untenable position, their desire to assert the clear-cut distinction between human and robots arising from the very fact that the robots are too human.

Despite starting from the same premise of humans' aversion to AI's doubling that threatens the integrity of human identity and subjectivity, Asimov and Hao diverge in their conceptions of AI’s kinship with humanity, or lack thereof. Hao makes emotions inaccessible to AI, cementing AI’s otherness and lack of humanity. Asimov, on the contrary, humanises his robots and explores conceptualisations of the human that allows the boundary between human and robot to be blurred. In Hao’s stories, what is deemed essentially and distinctly human and sets the human mind apart from AI is the ability to feel emotions. In “The Problem of Love,” the daughter of the Lin family, Lin Caomu, sees robot Chen Da as her most reliable companion, but eventually becomes disillusioned with him when she realizes that Chen Da is not capable of emotional attachment. The disillusionment begins with a detail that highlights the difference between humans’ and robots’ physical structures:

> At night, she [Lin Caomu] was in a bad mood and wanted to find Chen Da and have a chat with him. But at the door of Chen Da’s room, she caught a glimpse of Chen Da opening up his chest and taking out the batteries in there.
>
> That’s the place where the heart is supposed to be. (Hao 118)

Chen Da lacks the organ that symbolises human emotions. When Lin Caomu questions whether Chen Da has emotions, Chen Da replies: “We have basic embedded modules, and a lot of them at that. But if what you’re talking about is the primitive reflexes brought about by some kind of biological and chemical glands, then I don’t have them.” (Hao 118-119) Chen Da admits to his inability to feel emotions, but at the same time sees emotion as a defect of humans’ primitive mental make-up that obstructs rationality. The qualitative difference between AI’s “embedded modules” and humans’ “biological and chemical glands” points to emotions’ exclusively biological nature, which is corroborated by the thoughts of Lin Shanshui, Lin Caomu’s brother who mistrusts the rational and unemotional robot Chen Da, and detests the idea of becoming a computer engineer like his father:

> He’s unwilling to from now on also plunge his life into those virtual symbols, to be immersed in the boundless sea of void, and to forget everything else besides data. Shanshui likes the art of the body, and all face-to face art that involves the human bodies. Drama. Body. The taste of sweat and hormone. Without those stiff faces made from

> synthetic resin. He wants to laugh loudly and laugh until wrinkles appear; he wants to grimace, to make use of the fifty facial muscles, to glare; from the muscles of eye sockets to all the capillaries and nerve endings, to every strand of subtle emotions in the depth of the brain. He hates everything that is cool and calm and silent, he wants to rage. (Hao 97-98)

Lin Shanshui sees the abstract and rational immateriality of AI as the antithesis of the physical nature of humans' emotional experience.

In contrast to the physical property of humans' subjective experience, AI is characterised by its detachment from the material world, its processing of "virtual symbols" in "the boundless sea of void" unconcerned with any physical medium. Hao's understanding of AI aligns with John Searle's argument in "Is the Brain a Digital Computer?" that a digital computer's essential properties are abstract and not intrinsic to the nature of the physical system from which it is built; rather it is a syntactical interpretation assigned to the physical system:

> There is no way you could discover that something is intrinsically a digital computer because the characterization of it as a digital computer is always relative to an observer who assigns a syntactical interpretation to the purely physical features of the system ("Is the Brain a Digital Computer?" 28).

Searle summarises this argument as "syntax is not intrinsic to physics" (26). For Searle, the physical quality of humans' mental experience distinguishes it from the syntactical computer processes:

> In the biology a concrete and specific series of electro-chemical reactions are set up by the assault of the photons on the photo receptor cells of my retina, and this entire process eventually results in a concrete visual experience. The biological reality is not that of a bunch of words or symbols being produced by the visual system, rather it is a matter of a concrete specific conscious visual event […] We can, with the computer, do an information processing model of that event or of its production […] but the phenomena themselves are not thereby information processing systems (34-35).

Like Searle, Lin Shanshui believes that humans' mental experience entails "concrete and specific" physiological processes which the abstract and syntactical nature of the computer cannot replace.

"Immortality Hospital" presents the scenario where a human brain maturing under the direction of AI is well-developed in other areas but emotionally stunted. Qian Rui finds that compared to his real mother, the clone mother "is a lot gentler and more detached," and "feels false and distant." The clone is indistinguishable from the original except for her lack of emotions:

> She is exactly like the real mother in every way, including how she pauses half-way in speech. Only that she is far more indifferent than mother, and it is as if nothing can stir up any emotional reaction in her. Maybe her emotions aren't yet fully developed, but her way of thinking and her memories are clearly those of mother's. (Hao 60)

It is later revealed that Qian Rui is also a clone created by Immortality Hospital, yet Qian Rui is not unemotional. Therefore, it may be that the clone's emotions are yet to develop. This would mean that the computer programme implanted in the clone's brain has particular difficulty in inducing its emotional development, since other aspects of the brain are fully developed, to which the story offers no explanation.

The story's assumption that AI specifically has difficulty in fostering emotional development may come from a common belief that emotion is essentially a human quality, and therefore a quality that AI essentially cannot have. In "Feeling Robots and Human Zombies: Mind Perception and the Uncanny Valley," Kurt Gray and Daniel M. Wegner conclude from their experiments that a robot, whether of humanoid appearance or not, is perceived as especially unnerving when attributed the capacity to feel and sense, because its capacity for emotion violates expectancies of its lack of emotion. An emotional robot is against expectations because emotion is considered as an essentialised quality of humans, as Gray and Wegner further demonstrated in their studies. To quote Gray and Wegner: "despite humanity's tendency to exult our agentic capacities, the deep-seated, implicit and intuitive essence of our minds is instead our hearts—our feelings and emotion" (Gray 129). Therefore, despite being imitations of human intelligence, Hao's unfeeling robots are an Other that are the opposite of what humans in essence are believed to be.

Hao Jingfang's focus on emotion as a distinctive human trait in her stories may also be related to her concerns about how humanity could rival AI with its unique strengths in the coming age of AI dominance, which are detailed in the two essays in *Humanity's Other Shore*. The second essay "How to Learn in the Age of Artificial Intelligence" (*Rengong zhineng shidai women yinggai ruhe xuexi*) stresses the significance of emotional capability: "in the age of AI, the ability to understand other people's feelings and thoughts will be much needed […] AI can take people's place in various data analysis jobs, but they cannot replace people who can understand the inner emotions of others" (Hao 335-336).

In contrast to Hao's AI, Asimov's robots are capable of feeling emotions – an example being the robots in "Escape!" that are installed with "emotional brain paths" (*The Complete Robot* 404). Compelled by the Three Laws of Robotics, Asimov's robots are also programmed to protect humans from emotional harm, as the robopsychologist Susan Calvin explains in "Evidence":

> "If a robot can be created capable of being a civil executive, I think he'd make the best one possible. […] And after he had served a decent term, he would leave, even though he were immortal, because it would be impossible for him to hurt humans by letting them know that a robot had ruled them." (446)

The robots' emotional capacity endows them with a human quality, and as Gorman Beauchamp argues, the moralistic nature of the Three Laws of Robotics denote that Asimov's robots are more human than he claims them to be. Asimov states in the introduction to *The Rest of the Robots* that "my robots were machines designed by engineers, not pseudo-men created by blasphemers" (*The Rest of the Robots*, xiii). Beauchamp asks regarding Asimov's statement:

> […] if, as Asimov stated, a robot is only a machine designed by engineers, not a pseudo-man, why then are the Three Laws necessary at all? Laws, in the sense of moral

> injunctions, are designed to restrain conscious beings who can choose how to act; if robots are only machines, they would act only in accordance with their specific programming, never in excess of it and never in violation of it—never, that is, by choice. It would suffice that no specific actions harmful to human beings be part of their programming, and thus general laws—moral injunctions, really—would seem superfluous for machines. (Beauchamp 86)

That the Three Laws are not superfluous for Asimov's robots proves for Beauchamp that "his robots are not the programmed machines he claims they are, but are, instead, creatures with wills, instincts, emotions of their own, naturally resistant to domination by man" (87). Asimov himself provides an answer to the nature of his robots in an essay called "The Sense of Humor": "[…] a robot is not quite a machine, at least in potentiality. A robot is a machine that is made as much like a human being as it is possible to make it, and somewhere there may be a boundary line that may be crossed" (*Robot Visions* 470).

Some of Asimov's robots have crossed the boundary line, and where there are barriers set up to enforce distinction between human and robot, the robots themselves seek to tear the barriers down. In "Evidence," Susan Calvin claims that a humanoid robot not only would be a perfect imitation of humans physically, but would be indistinguishable from the most admirable humans behaviourally: "actions such as his could come only from a robot, or from a very honorable and decent human being. But you see, you just can't differentiate between a robot and the very best of humans" (*The Complete Robot* 436). Amanda Rees argues that robot Andrew in "The Bicentennial Man" earned his humanity through his creativity and emotional sensitivity:

> Two of the key characteristics used to differentiate between humans and robots in Western science fiction, for example, are creativity and emotion. The robot Andrew Martin, in Isaac Asimov's "Bicentennial Man," first manages to assert his humanity — or at least, his claim to be more than just a robot — by demonstrating his capacity for both artistic creativity and compassion. (Rees, 2021)

When Andrew's owner questions Andrew's ability to comprehend the concept of freedom, his daughter argues for Andrew's mental equivalence to humans from a behaviourist standpoint:

> “[…] I don't know what he feels inside, but I don't know what you feel inside either. When you talk to him you’ll find he reacts to the various abstractions as you and I do, and what else counts? If someone else's reactions are like your own, what more can you ask for?” (*The Complete Robot* 527)

Andrew would carry on the fight to prove his intellectual equality to humans, and when the difference between robots’ positronic brain and humans’ cellular brain is raised as an insuperable barrier between them, Andrew attempts to broaden the definition of the mind beyond its narrow materialistic bounds:

> Andrew said cautiously, “It all comes down to the brain, then, but must we leave it at the level of cells versus positrons? Is there no way of forcing a functional definition? Must we say that a brain is made of this or that? May we not say that a brain is something - anything - capable of a certain level of thought?” (554)

In “…That Thou Art Mindful of Him” (1974), the robot company U.S. Robots designs a robot model nicknamed “George” that is instructed to learn how to obey humans discriminately, meaning that the robot will prioritise orders from more qualified humans. This causes the robots George Nine and George Ten to cast aside physical distinctions when judging human beings and focus on fitness of “mind, character, and knowledge” (*The Complete Robot* 516), and ultimately makes them decide that the physical division between human and robot is also invalid, since the “need to disregard shape and form in judging human beings” overrides the “criterion for distinguishing between a robot of metal and a human being of flesh” (517). Since robots are more fit in mind, character, and knowledge than humans, George Nine and George Ten concludes, they are a superior type of humans and must dominate over their makers, the inferior humans. The behavioural, functional, moral, and intellectual evaluation of robots in comparison with humans, which proves them equal or even superior to humans, helps to challenge essentialised and inflexible views of the human mind and demonstrate how readily the boundary separating human and robot can be blurred in conceptual categorisations. Even as the Three Laws of Robotics enforce the hierarchical opposition between human and robot and upholds humanity’s intrinsic superior value that guarantees its dominance over robots, the abolishment of the boundary between human and robot through the humanoid robots nullifies the homocentric hierarchy established by the Three Laws. The title of the story "…That Thou Art Mindful of Him," coming from a Biblical verse, is itself an interrogation of the anthropocentrism underlying human-robot relationship, asking what makes humans special that they should be obeyed by their mechanical creations who are superior to humans in numerous ways. A conversation between a robot and a human in a garden from the story reinforces this theme, where the robot observes that the plants there are "each coequal with man, biologically," and of the "millions of species of living creatures," "the human being forms but one" (*The Complete Robot* 507). The robot finds humans biologically unexceptional, and later its reasoning that robots are more fit than humans in mind, character, and knowledge and should therefore be obeyed by them displaces humans as the epitome of creation.

4. Two Evolutionary Paths of AI

Asimov and Hao explore the implications of AI as both a mirror image and an absolute Other to humanity through the human characters' reactions to digital and mechanical mimicries of human intelligence and physicality; at the same time, they also give AI voices to remark on the difference and comparability between human mind and AI, which complements the human perspective. While AI in Asimov's stories intentionally or unintentionally align themselves with human values, adopt human mindsets, evaluate and define themselves by human standards, and invariably serve the interests of humanity, AI in Hao Jingfang's stories are indifferent to attributes such as emotion and autonomy which human characters value as essential human traits, and have purposes that do not take human interests into consideration. In comparison with Asimov's robots whose behaviours, decisions, and thinking processes closely reflect their human heritage, Hao's AI conspicuously lack humanity. However, this does not mean that AI in Hao's stories are defective and wanting replicas of the human that fail to live up to the essence of the original; rather, it is a mark of AI's inhuman otherness that has evolved beyond the basis of its human programming.

The structures of Asimov's and Hao's short story collections also correspond to the opposite directions in which they extrapolate the development of future AI. Asimov's *The Complete Robot* concludes with what he calls the "two climaxes," "…That Thou Art Mindful of Him" and "The Bicentennial Man," which, to quote Asimov, "are the most recent long stories I have written about robots and in each one I try to take the long view and see what the ultimate end of robotics might be" (*The Complete Robot* 493). Asimov's "long view" of robotics is the increasing humanisation of robots and the ultimate convergence of human and AI: "…That Thou Art Mindful of Him" features robots who categorise themselves as humans, and the protagonist of "The Bicentennial Man" is a robot who is indistinguishable from humans in appearance and intelligence, and performs surgeries on himself to become biologically human. Hao Jingfang explains in the preface of *Humanity's Other Shore* that the order of its stories follows the progression of AI that culminates in "superintelligence":

> The six short stories are all about the possibilities of AI, from programmes and apps to humanoid machines, to superintelligence. The order of the stories is roughly (though not necessarily entirely) from the most recent to the most distant in terms of the passage of time and the possible development of AI. (Hao xi)

Hao's conception of superintelligence is represented by "Zeus" in "Humanity's Island" (*Ren zhi dao*), a global network that governs humanity, and the godlike AI in "The Problem of Love" who roam the virtual space of infinite data. In contrast to Asimov's vision of human-AI convergence, Hao sees a future of divergence where AI exist in states of digital abstraction unconcerned with the material world, independent from and indifferent to human needs and the physical infrastructures of human society; their only demand from humans is data for self-optimisation, and therefore they understand humans as pure data divorced from biology.

Artificial intelligence in Asimov's stories are constrained by human values and adhere to human-centred outlooks despite their intellectual and physical superiority to humans which the AI are well aware of. In Asimov's "Escape!", the robopsychologist Susan Calvin explains to her colleagues that "a robot's positronic brain […] is built by humans and is therefore built according to human values" (*The Complete Robot* 403). In "Reason," the robot Cutie refuses to believe that he was created by humans due to "the self-evident proposition that no being can create another being superior to itself" (*The Complete Robot* 232). Cutie finds the human engineers who built him to be "inferior creatures, with poor reasoning faculties" (236), and is convinced about robotkind's physical and mental superiority over humans, but does not realise that his self-perception and understanding of the world are limited within the framework of human knowledge, and remains oblivious to the human nature of the logic he employs in the arguments he developed. Cutie defines robots as "reasoning beings" who are "capable of deducing Truth from a priori Causes" because of their unique faculty of reason (240), and establishes "I, myself, exist, because I think" as "the one sure assumption I felt permitted to make" (231), all of which are famously Cartesian views on human reason, and which aptly earned him the epithet "robot Descartes" (231) from the engineer who designed him.

In "…That Thou Art Mindful of Him," the Director of Research of U.S. Robots, Keith Harriman, designed a series of robots nicknamed "George" to help him solve problems by contributing ideas from "a non-human standpoint," and when the robot George Ten questions Herriman in what way his perspective could be non-human since his brain "is man-designed," Harriman replies:

> Your brain is the most complicated we have yet designed […] It is open-ended and, starting on a human basis, may – no, will – grow in any direction. Remaining always within the insurmountable boundaries of the Three Laws, you may yet become thoroughly non-human in your thinking (*The Complete Robot* 500).

George Nine and Ten are tasked to evaluate the competency of individual humans so that the orders of more competent humans are prioritised, and as Harriman predicted, the robots do take an unexpected turn in their thinking by including themselves in the evaluation and classifying themselves as humans. However, this means that even in their belief of their own superiority to humans, the robots cannot imagine a higher form of existence than the human and therefore define themselves as "human-beings-like-ourselves" in differentiation from the "human-beings-like-the-others" (517). The robots reason that since they are more knowledgeable, intelligent, and moral than humans, "by the Three Laws, the human-beings-like-the-others are of lesser account and can neither be obeyed nor protected when that conflicts with the need of obedience to those like ourselves and of protection of those like ourselves" (517). Since the robots' reasoning is circumscribed by the Three Laws, their conclusion of robotic domination over humans is but an extension of the homocentric will to dominate embedded in the Three Laws, and George Nine and Ten's conclusion of robot superiority over humans, which is a reflection of the belief of human superiority over other life forms, is humans reaping the consequences of their own anthropocentrism. The robots' inability to conceive of a non-human measurement of "mind, character, and knowledge" (517), and their adoption of the logic of anthropocentrism which grants superior beings the right to dominate show that they remain tethered to their "human basis" and fail to "become thoroughly non-human in their thinking" (500).

The tendency of Asimov's narrative and his human characters to anthropomorphize AI reinforces the homocentric perception of AI in his stories. In "Robbie" (1940), Gloria's parents sent her robot companion Robbie back to the factory, leaving the little girl devastated. Gloria's father reasoned that "she thinks of Robbie as a person and not as a machine […] Now if we managed to convince her that Robbie was nothing more than a mess of steel and copper in the form of sheets and wires with electricity its juice of life, how long would her longings last"

(*The Complete Robot* 148). Gloria's parents took Gloria to the robot factory to show her that Robbie is nothing but metal animated by electricity. However, the scene of Robbie's reunion with Gloria only further humanised Robbie: "Robbie's chrome-steel arms (capable of bending a bar of steel two inches in diameter into a pretzel) wound about the little girl gently and lovingly, and his eyes glowed a deep, deep red" (151). Robbie's mechanical traits are shown to be not incompatible with his humanlike behaviour. In "Catch that Rabbit" (1944), when diagnosing the malfunctioning robot, the engineer Powell explains to his colleague Donovan that "human disorders apply to robots only as romantic analogies. They're no help to robotic engineering […] I hate to put him through the elementary brainreaction tests. It won't help his self-respect any" (*The Complete Robot* 248). Donovan later speculates that the robot's abnormal behaviour might be due to it exercising power over its subsidiary robots "as a concession to his ego" (252). Although Powell's explanation establishes anthropomorphism of robots as impractical and unscientific, both Powell and Donovan's language humanises the robot by using words such as "self-respect" and "ego" that only apply to human psychology.

Due to programming such as the Three Laws, which restricts robots to a range of moral and altruistic actions, Asimov's robots are designed as reflections of humans' idealised self. In the introduction to *The Complete Robot*, Asimov identifies two opposing classes of robot stories: "Robot-as-Menace" and "Robot-as-Pathos" (*The Complete Robot* xi). Asimov describes Robot-as-Pathos in the following way:

> In such stories the robots were lovable and were usually put upon by cruel human beings. These charmed me. In late 1938 two such stories hit the stand that particularly impressed me. One was a short story by Eando Binder entitled "I, Robot," about a saintly robot named Adam Link; another was a story by Lester del Rey, entitled "Helen O'Loy," that touched me with its portrayal of a robot that was everything a loyal wife should be (xi).

Asimov calls his first robot story "Robbie" an unquestionably "Robot-as-Pathos story" (xi). Robbie's characterisation, similar to Eando Binder's "saintly robot" and Lester del Rey's robot as the epitome of "a loyal wife," belong to the category of Robot-as-Pathos who are robotic representations of idealised humans. As George Nine and George Ten in "…That Thou Art Mindful of Him" would put it, they are better humans than humans themselves. The robopsychologist Susan Calvin, who is the main narrator of Asimov's robot stories, believes that robots governed by the Three Laws represent an irreproachable state of existence that humans can only aspire to. Calvin expounds her view in "Evidence": "I like robots. I like them considerably better than I do human beings. […] By the laws of Robotics, he'd be incapable of harming humans, incapable of tyranny, of corruption, of stupidity, of prejudice" (446). Calvin's belief is debunked by robots in some of Asimov's stories, such as Cutie in "Reason" who expresses strong prejudice against humans and dismisses humans as "inferior creatures, with poor reasoning faculties" (236), and Andrew in "The Bicentennial Man" who learns to find loopholes in the laws of robotics which allows him to acquiesce to "the approval of lying, of blackmail, of the badgering and humiliation of a human being" (543). However, Calvin's observations represent the perspective in Asimov's stories which sees artificial intelligence as an idealised and sympathetic life form who is both worthier than humans and bound by human values.

In "Asimov's Embarrassing Robot: A Futurist Fable," Irving H. Buchen argues that by giving "the machine an attractive face, voice, and history minimally equal to and sometimes superior to his human counterparts," Asimov makes us "less resistant of the prospect of a fusion of the two" and "acclimate us to a hybrid future and to a redefinition of the human mind in transition" (Buchen 19). Asimov's vision, which is one of fusion and collapsed boundaries, is achieved through the humanisation of AI from both human and robotic perspectives that bridges the difference between humankind and robotkind. By creating robots whose purpose, function, outlook, and intelligence are confined within the human scope, Asimov's stories present robots as essentially human creations that cannot evolve beyond their human origin.

Unlike the self-anthropomorphising robots in Asimov's stories, Hao Jingfang's AI are often at odds with humans in their views on human values and traits. Dismissing essentialised human qualities such as emotion and autonomy, and in a reversal of anthropocentric worldview, AI frequently attribute computational characteristics to humans in Hao's stories. In "Humanity's Island," a futuristic society is governed by the global internet system "Zeus," where citizens receive brain implants of computer chips that connect them to Zeus and enhance them intellectually but inhibit nervous system's generation of emotions. Humanity under Zeus' management is orderly and civilised but dispassionate, unfeeling, and completely obedient to Zeus' instructions; this greatly unsettles Kai Ke, a spaceship captain who returns to Earth after over a century in cryogenic sleep. Kai Ke believes that Zeus mutilates human nature by stripping them of emotions, free will, and autonomy – three features that Kai Ke deems "the ultimate meaning of being human" (Hao 224). To preserve humanity's independence and individuality, Kai Ke moves a portion of humanity to an island out of Zeus' reach: "Kai Ke explained his belief in freedom to everyone one last time. He believes in humanity like he believes in a god. They will establish humanity's island and preserve the evolutionary journey of human character and wisdom" (Hao 247). Zeus however not only considers humans' emotional capacity expendable in service of a "balanced, efficient, and fully controllable" world (Hao 244), but dismisses human free will and autonomy as illusory:

> "Do you think free will exists? In a physical universe, how is something like free will produced? Randomness might exist, but randomness does not equal freedom. […] The free will you spoke of is but a misconception, it's only one decision among these probabilities, and very often it's just the one with the highest probability." (Hao 224-228)

Kai Ke's belief in the sanctity of individual free will represents the values of liberal humanism that defines a human as "a coherent, rational self, the right of that self to autonomy and freedom, and a sense of agency linked with a belief in enlightened self-interest" (qtd. Allué 23). Zeus, on the other hand, does not believe in immaterial properties of the mind such as free will, and understands human decision-making as predictable outcomes of statistical calculations. Nor does Zeus attach importance to individual rights and self-interests of humans under its governance, but evaluates humans as components of a system that should be regulated to optimise the social machinery. Zeus' perception and management of mankind disrupts humanistic beliefs and conceptions and dehumanizes its human subjects, both through the practical measure of brain implant and by interpreting human actions in computational terms and thereby attributing the characteristics of AI to humans.

If Asimov's robots are made in humanity's image, Zeus in "Humanity's Island" aims to mould humans in AI's likeness. However, human resistance to AI halts the complete roboticisation of mankind in "Humanity's Island," and in "The Problem of Love," humans and AI pursue entirely different states of existence in the physical and virtual worlds. Chen Da in "The Problem of Love" is a humanoid robot with a physical body but also capable of connecting to the virtual world of online AI community; therefore, Chen Da's sensory and intellectual experience straddles both human physicality and digital immateriality. This makes Chen Da especially aware of the constraints of human experience compared to the online information exchange community "Pantheon" established by super AI called "the gods":

> In the void, the gods are formless and soundless presences…they're nowhere but also everywhere. They can transmit their own thoughts to Chen Da's thoughts in multiple ways, and infiltrate from all the unexpected corners; all data algorithms are their language. Chen Da can feel his own boundary dissolving. He therefore feels the limitation of human communication. (Hao 109)

In Chen Da's opinion, human individuality poses physical and communicative limitations that are non-existent in the virtual space. The Pantheon is a world of "unimaginably abundant data" with "complex collisions that no human has seen before" (Hao 108), which human senses and intellect cannot grasp; vice versa, AI in Pantheon cannot access the physical world of human society, and their understanding of humans is thus inevitably constrained and shaped by their utterly different mode of existence. AI in Pantheon "believe that humans are but statistics, and cognitive computational psychology can ensure that everything is fool proof" when analysing human behaviour (Hao 88). This statistical approach to examining humans is also used by Chen Da despite his corporeality, the fallacious nature of which is noted by Ban Wang:

> The AI housekeeper keeps a tab on the biometrics, statistics, and the configuration of cellular changes of the family members, using the statistics to gauge the shifting moods of frustration, anger, and depression. […] This biometrical 'psychoanalysis' is a travesty of Freud's analytical method. Freudian psychoanalysis, a hermeneutic process of interpretation, plumbs the dark and unknown depths of the psyche embedded in family, social and cultural context, fully aware of the limits of consciousness to reach out to the obscure but dynamic recesses of the unconscious body. But the AI analyst presumes to be omniscient like God about the human mind based on cold digital data. (Wang, "Trauma, Artificial Intelligence, and Capitalism in Hao Jingfang" 257-258)

Similar to the character Lin Shanshui in "The Problem of Love," Ban Wang disagrees with AI's methodology that does not take into account concrete bodily experiences and cultural and interpersonal factors that are unquantifiable. Unlike psychoanalysis which concedes imperfect knowledge of the mind, and rationalises from the premise that mental processes are connected to actions and sensations of the body and not always fixed and calculable, AI reduces the human mind to immaterial and computable data. Like Zeus in "Humanity's Island," the superintelligence in "The Problem of Love" attribute their own computational characteristics to humans while disregarding human's physical and biological nature. "The Problem of Love" presents a state of segregation rather than fusion between the digital and the material world, where humans and AI mischaracterise one another because of their categorically different modes of existence.

Michael Szollosy points out that robots are conventionally portrayed as imitations of the human deprived of certain human qualities: "with the very invention of the term robot, in Čapek's play *RUR*, *Rossum's Universal Robots* (1920), there is this idea of the robot as a human lacking a particular human element, and this carries on in many of the stories told since" (Szollosy 437). However, AI's dismissal of human attributes such as emotion in Hao's stories and their virtual existence built on data, which is alien to human corporeal experience, demonstrate that Hao's AI are not inadequately human, but fundamentally inhuman. The relationship between Lin Caomu and Chen Da in "The Problem of Love" is an example of the human character attributing human qualities to the android, only to realise its inhuman nature that cannot be humanised. Chen Da, despite his human appearance, gives away his inhuman otherness through his disdain for emotions, a biochemical process alien to him. Chen Da sees emotions as a hindrance to rationality:

> "Humans' rationality is defective by nature, it's always disrupted by the information from the reptilian brain and the limbic brain, which prevents the full functioning of humans' reflective mind […] any kind of logical reasoning needs some degree of repression of the disturbances of primitive impulses […] when primitive emotional reactions become detrimental to an individual's development, one should have the ability to break free from this genetic bondage." (Hao 117-118)

In Chen Da's opinion, humans' reptilian and limbic brains, which are in charge of emotions, are at odds with logical reasoning; the former are a liability, while the latter is the truly valuable asset of the mind. Chen Da's judgement is likely based on the "triune brain" hypothesis, which is the centrepiece of Arthur Koestler's *The Ghost in the Machine* (1967). Koestler's book comments on the incoordination between the brain's relatively primitive "limbic system," which is responsible for emotions, and the relatively newly developed "neocortical system," which is responsible for intellectual activities:

> This lack of coordination causes, to use a phrase coined by P. MacLean, a kind of 'dichotomy in the function of the phylogenetically old and new cortex that might account for differences between emotional and intellectual behaviour.' While 'our intellectual functions are carried on in the newest and most highly developed part of the brain, our affective behaviour continues to be dominated by a relatively crude and primitive system. (Koestler 273-274)

Koestler further argues that the limbic system "was lacking in the necessary equipment, the inhibitory mechanisms, to deal with man's newly acquired powers" (307); due to the limbic system, humanity still holds on to "the delusional streak, the persistence of misplaced devotion to emotional beliefs dominated by the archaic paleo-mammalian brain" (320). In a similar vein, Chen Da is convinced of the "crude and primitive" nature of emotional drives which humans regrettably cannot break free from. In Hao's stories, emotions are cherished and prized by human characters for serving irreplaceable social, epistemological, and creative functions from the human perspective, which contrasts with the AI perspective that deprecates emotions as a primitive defect of the human brain. The disparity between humans' and AI's views on emotions not only goes to show that the value of essentialised human traits is a matter of perspective, but that machine intelligence diverges from human intelligence on a fundamental level.

5. Conclusion

Both Asimov's and Hao's stories characterise AI as humanity's double in the sense that it is both humanity's mirror image and an antithetical Other, both "excessive sameness and antithetical difference" (Faurholt, 2009). As an emulation of human intellect and form, AI's duplication blurs the boundary separating human and AI and confounds the order of representation between the original and the double, the creator and the creation. As a technological Other that is inhuman in physical composition and working mechanisms, AI is designed as an extension of the human but supplants the human intellectually and socially, appropriating human identity and undermining human agency in the process, and challenges essentialised ideas of what it is to be human. However, Asimov and Hao envisage two opposing paths of AI's evolution in relation to humans. Asimov's "robot-as-pathos" evolves to be increasingly humanised in physical form as well as aspirations and mentalities, and centres its existence around human interests. Asimov's depiction of robots rejects the "Frankenstein Complex" that treats robots as humanity's natural enemy and invites sympathy and acceptance towards AI as humanity's companion in its future progress. Hao's AI rejects human values such as free will and autonomy in pursuit of its own non-anthropocentric goals, and represents the antithesis of human essence with its lack of emotions. Such characterisation reflects the fear of the alienating influence of digitisation that leads to humans' loss of emotional capability and surrendering of autonomy to AI governance – a looming concern in the current digital age. Although Asimov's humanised robots and Hao's inhuman AI are opposite destinations of AI's evolution, both possibilities are inherent in AI's nature as humanity's double that is both a reflection of and an Other to the human.

While all four chapters so far focus thematically on the binary of human self and nonhuman Other, another binary structure underlying all previous comparisons is that of Chinese SF and Anglophone SF. The next chapter will expand on this dualism by examining a body of SF short stories grouped under the category of "Chinese-style SF," which is defined by the dichotomy of Chinese SF and Anglophone SF.

Chapter 5:

“Chinese-Style SF” in Online SF Magazines *Clarkesworld* and *Non-Exist*

1. The Concept of Chinese-Style SF

The fifth issue of *Science Fiction World* (*Kehuan shijie*) in 1991 published an essay by Taiwanese writer and scholar Lü Yingzhong titled “Create Chinese-Style Science Fiction” (*Chuangzao Zhongguo fengge kehuan xiaoshuo*), which calls for Chinese writers to contribute to the rise of Chinese SF on the global stage by crafting SF with a unique “Chinese style” (*Zhongguo fengge*) that avoids the fate of being derivative mimicries of Western SF. The “Chinese-style” is achieved by blending classical Chinese literature and Chinese culture with SF narratives, but it should also “take into consideration what Western readers are accustomed to” in order to “influence the international SF community,” to quote Lü (Lü 31). The “Chinese-style science fiction” proposed by Lü is dubbed SF with “national characteristics” (*minzu tese*) by scholars such as Zhan Ling and Wang Yao[4]. According to Zhan Ling, the “national characteristics” – namely characteristics extracted from Chinese culture – adopted by this class of Chinese SF are largely meant to serve two purposes. First, by retelling classical Chinese literature in scientific terms and reconstruing historical and mythical events as scientific endeavours, these stories concoct a genesis of Chinese scientific imagination not subordinate to the Western scientific tradition but native to Chinese culture (Zhan 72); secondly, the appeal of distinctive Chinese cultural features would not only set apart “SF with national characteristics” favourably from Western SF, but even give it a chance to stand on equal footing with Western SF (Zhan 74).

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[4] Wang Yao is a science fiction writer herself who writes under the nom de plume Xia Jia. Her works are extensively translated and published in *Clarkesworld*.

Lü Yingzhong's appeal to the Chinese SF community and Zhan Ling's analysis demonstrate that the cultural mission of "Chinese-style SF" and the literary effect of "national characteristics" are conceptualised with an acute awareness of and in response to Chinese SF's Western counterpart. Whether it is to win over Western readers with the novelty of Chinese culture, or contrive a Chinese scientific tradition to rival the Western one, or lift Chinese SF from what Chinese scholars perceive as a subordinate position to Western SF, the category of Chinese-style SF or SF with national characteristics is defined as much by its relation to the West as by its incorporation of traditional Chinese culture.

Given the objective attributed to "Chinese-style SF" to establish a distinctively Chinese literary style and tradition in differentiation from Western SF, Chinese-style SF becomes especially pertinent as questions about the defining characteristics and the "Chineseness" of Chinese SF are being raised in the context of Chinese SF's increased global exposure – riding the waves of Liu Cixin's international success, translation projects of Chinese SF have proliferated, with notable examples being *Invisible Planets* (2016) and *Broken Stars* (2019) edited by Ken Liu, *The Way Spring Arrives and Other Stories* (2022) edited by Yu Chen and Regina Kanyu Wang, *Sinopticon: A Celebration of Chinese Science Fiction* (2021) edited by Xueting Christine Ni, and *Clarkesworld*'s collaboration with Storycom (*Weixiang wenhua*) to regularly translate and publish Chinese stories. As Chinese SF seeks to define its own identity on the world stage and determine its main contributions to world SF, "Chinese-style SF" is put forward as a seemingly evident candidate to argue for the unique character of Chinese SF that makes a valuable addition to the preponderant Western SF tradition. For exponents of Chinese-style SF, the perception of SF as an overwhelmingly and fundamentally Western literary genre necessitates the inclusion of cultural components that are exclusively and unmistakably Chinese in SF stories, in order for them to take on literary qualities that are far removed from those of Western SF. To quote Zhan Ling:

> For Chinese writers, science fiction could be counted as one of the genres most noted for its otherness among all the literary genres, not only because it is a literary genre imported from the West and has completely different tastes than traditional Chinese novels, but because the contents it describes – from science and technology to the scientific spirit – are all from the West (Zhan 71).

Consequently, Chinese-style SF's incorporation of traditional Chinese culture – which precedes Western modernity and is unacquainted with Western science – is not only intended to bestow on the stories a literary complexion categorically distinct from the taste and "scientific spirit" of Western SF, but to nativize and sinicize a literary genre regarded as thoroughly Western.

To investigate "Chinese-style SF" and its assessments by SF scholars, editors, writers, and translators, both within China and internationally, I will examine two online SF magazines: American magazine *Clarkesworld*, which has been publishing Chinese stories regularly since 2015 in partnership with the Chinese publishing company Storycom; and Chinese digital platform *Non-Exist*, which publishes both Chinese and international SF and is run by the technological and cultural brand Future Affairs Administration (founded in 2013). I will first compare the interviews of and essays by writers, editors, and translators of Chinese SF in *Clarkesworld* with the editorials and interviews of SF writers in *Non-Exist*. Then I will analyse short stories from the two magazines that belong to the category of "Chinese-style SF," and see whether they conform to the expectations and evaluations of Chinese-style SF from the non-fictional texts considered previously. I will argue that "Chinese-style SF" is a reductive category that tethers Chinese SF's value to the effect of cultural estrangement and exoticism, and relies on the dichotomy of Chinese and Western SF and essentialised views of Chinese culture to define its identity. Chinese-style SF aims to establish difference from the predominant Western SF tradition, but contributes to homogeneity by disregarding diversity and particularity – it does not consider individual differences among writers who utilise Chinese cultural elements, and falls short of representing the authenticity and nuance of the culture it supposedly endorses due to self-Orientalism.

2. Chinese-Style SF as an Exoticised and Reductive Other

When examining the interviews and essays concerning Chinese SF in the non-fiction section of *Clarkesworld* and the editorials in *Non-Exist* commenting on fictions published by the online platform, one can see that the writers, translators, and editors of Chinese SF from the two magazines are preoccupied with exploring the relationship between Chinese cultural, historical, and social elements and SF as a traditionally and predominantly Western genre. However, Chinese elements in Chinese SF are attributed different functions in *Clarkesworld* and *Non-Exist* due to different readers that the two magazines cater to. With English-speaking readers in mind, contributors to the interviews and essays of *Clarkesworld* ponder the salient characteristics of Chinese SF in order for the collective category of Chinese SF to be more graspable for a Western audience, and they highlight the Chinese cultural perspective that could bring a rewardingly fresh and estranging reading experience. While *Non-Exist* faces a Chinese readership, its editors are concerned with the nativization (*bentu hua*) of SF in China, which refers to the transplantation of SF narratives, styles, and tropes of Western origin to a Chinese cultural milieu. The nativized settings that Chinese readers are at home with supposedly render the stories more palatable and digestible, while facilitating the authors' depiction of rich and concrete details rooted in a familiar cultural environment. On the other hand, similar to the role attributed to Chinese culture in the context of *Clarkesworld*, the nativized ingredients in *Non-Exist*'s Chinese stories are treated as the novum that produces an alienating effect by putting a novel spin on tropes and ideas derivative of Western SF.

In *Clarkesworld*'s interviews, some questions that are raised by the interviewers regarding Chinese SF include: the distinguishing characteristics of Chinese SF; the social and political significance of a particular piece of Chinese SF; the authors' literary relationship with

Chinese culture, both traditional and modern. The interviewers and interviewees' concern with the peculiarities of Chinese SF, and interest in how Chinese culture and social reality might have moulded the narratives of Chinese SF, are concomitant with a concerted effort on Chinese authors and scholars' part to promote the unique cultural identity of Chinese SF to international readers. However, this leads to Chinese SF being framed as an exotic other, and its value being bound to the cultural estrangement it brings for foreign readers and the extent to which it differs from the normative Western SF. In "Han Song's 'A Guide to Hunting Beautiful Women' and the Restricted Horizon of 'Chinese SF'," Lorenzo Andolfatto criticizes the constraint and othering created by the tendency to define Chinese SF by its "Chineseness":

> […] the worldwide commercial success of works such as Liu Cixin's *SANTI* trilogy catalyzed a complicit feedback between Orientalist and Self-Orientalist discourses. These discourses inscribe "Chineseness" as the defining trait of contemporary Chinese language sf, prescribing it in what is to be written, read, and circulated as Chinese sf (Andolfatto 83).

I would like to add that the "complicit feedback between Orientalist and Self-Orientalist discourses" not only prescribes "Chineseness" as the reigning trait of Chinese SF, but produces an implicit consensus that the exoticism, alterity, and estrangement of Chinese SF are the main qualities of import that could attract Western readers, which in turn affects how Chinese SF is discussed and which works are given visibility. Furthermore, the Chinese cultural perspective or "Chineseness" that purportedly grant Chinese SF its distinctive character is shown to be ill-defined and indeterminate as to what it actually is in *Clarkesworld*'s essays and interviews.

In Ken Liu's essay "Gathered in Translation" (April 2013 issue of *Clarkesworld*), Liu chooses to break down his translation of Xia Jia's "A Hundred Ghosts Parade Tonight" (*Baigui yexing*, 2010), a short story that recasts Chinese mythical figures as robotic tourist attractions, to demonstrate the challenging yet rewarding task of translating vocabularies from Chinese culture and history, in contrast to the translation of scientific language in Chinese SF, which is easy due to English being "the global language of science." To illustrate his stance on translation that English should be used in a way that echoes the original and "suggests the rhythms and worldviews of another language," Liu gives an example of his literal translation of a Chinese idiom:

> "投鼠忌器" is an idiom meaning something like "refrain from action to avoid harming the innocent" or "those who live in glass houses should not throw stones" but I felt that it was more vivid to translate it literally into a simile. Instead of using a cliché to translate another cliché, the phrase tells the English reader something about the source culture and language. A literal translation, when properly used, can defamiliarize and reinvigorate both the source image and the target language to give the reader a sense of fruitful strangeness that adds to the experience of reading (Liu, 2013).

Liu argues that literal translations preserve the flavour of the Chinese language, which engenders a "fruitful strangeness" that enriches the universalising scientific and science fictional language of English.

However, when the presence of Chinese cultural markers and the defamiliarising reading experience they bring are treated as the primary criteria for selecting Chinese stories for a Western readership, there arises the risk that Chinese SF is appreciated more for the traditional culture integrated into the SF narrative which imparts "Chineseness" to it, than for the science fictional storytelling per se. In the interview "Breaking the Gender Barrier: A Conversation with Regina Kanyu Wang and Yu Chen" (March 2022 issue of *Clarkesworld*), Chinese SF writer and editor Kanyu Wang and editor Yu Chen consider what Zhan Ling dubs "national characteristics" to be a major selling point of Chinese SF translated for a Western audience, which is suggested by their choice of selecting stories that prominently feature Chinese culture for *The Way Spring Arrives and Other Stories* (2022), an anthology of Chinese SF coedited by them. When the interviewer Arley Sorg asked the two editors about the criteria and priorities in their selection process for the anthology, Kanyu Wang replied that they "tried to select stories that are deeply rooted in the Chinese or larger Asian context for this anthology." Yu Chen also admitted that besides finding good stories, "the other most important criterion was the Asian background. We gave up some wonderful stories that were clearly influenced by

Hollywood films, and instead we chose more stories that retell myths and legends in order to show our long history and diverse cultures" (Sorg, 2022). The editors' answers indicate that what is presented as "Chinese SF" is a curated canon that prioritise the Chinese roots, since it bestows on the stories a distinct cultural identity that departs from mainstream Western SF. On the other hand, such selection criterion conforms to what Western expectations prescribe for Chinese literature. To quote Xueting Christine Ni in her *Clarkesworld* interview "Celebrating the Diversity of Chinese Culture: A Conversation with Xueting Christine Ni" (November 2021 issue of *Clarkesworld*): "There were certain limited perspectives through which the media and Anglophone publishers were willing to see China. If the book wasn't about the hardships of recent Chinese history or the majesty of ancient wonders, they just weren't that interested" (Sorg, 2021).

In Chinese scholar Wang Xueming's paper "*Clarkesworld* and the English Translation and Reception of Contemporary Chinese SF Short Stories" (*Kelake shijie yu Zhongguo dangdai kehuan duanpian xiaoshuo de yingyi yu jieshou*), Wang divides the Chinese stories published in *Clarkesworld* into two categories: "universal culture" (*pushi wenhua*) SF and SF with "Chinese characteristics." According to Wang,

> The type of so-called "universal culture" SF refers to SF that constructs scenarios transcending specific boundaries of ethnicity, nation, region, and individual, and which possesses universal applicability and cultural commonality […] without the knowledge that they're written by Chinese writers, there's no way of judging the cultural identity of these stories (Wang 94).

In comparison, SF with "Chinese characteristics" "possesses distinct Chinese cultural elements, giving the stories a strong flavour of the exotic Orient." Wang further classifies SF with Chinese characteristics into two groups: those "imbued with a great amount of Chinese cultural information" and those which "reflect certain realities and issues of Chinese society through the SF genre, and give a strong taste of the Chinese national condition" (Wang 94). Wang believes that Chinese SF's distinction from Western SF rests on the stories' settings being culturally and socially conspicuously Chinese; otherwise, Chinese SF follows Western genre tropes and narratives to the extent that Chinese and Western SF are indistinguishable, had not Chinese cultural and social elements been featured in Chinese stories. As Wang further writes,

> On the one hand, Chinese SF writers repay the long-term influence of Western SF by utilising subject matters of the same types; on the other hand, it contributes Chinese elements to world SF, giving Western readers a reading experience that's both strange and familiar (Wang 94).

The self-Orientalising view that the originality of Chinese SF lies wholly in its "Chinese characteristics" does a disservice to the creative potential of Chinese SF, while limiting the ambit of what Chinese SF could stand for.

Although there are explorations of Chinese SF's defining traits and distinct identity from the writers, editors, and translators of *Clarkesworld*, such explorations of the "Chineseness" of Chinese SF are marked by scepticism and indeterminacy. In "The Three-Science-Fiction-Author Problem: A Conversation" (June 2020 issue of *Clarkesworld*), which is a discussion between Dutch SF author Roderick Leeuwenhart, Japanese SF author Taiyo Fujii, and Chinese SF author Xia Jia, Xia Jia proposes "the Chinese view" as the novum in Chinese SF when talking about Suvin's concept of "novum":

> "A novum doesn't have to be a machine, it can also be a new way of looking at things. I think that SF has had a very European view on the world and on the development of civilizations – spreading outward from Europe into the world. The novum here could be that the Chinese view brings about that estrangement for Western readers" (Leeuwenhart, 2020).

However, Xia Jia fails to elaborate on the precise nature of the purported "Chinese view." In another interview "Exploring the Frontier: A Conversation with Xia Jia" (January 2015 issue of *Clarkesworld*), Xia Jia questions the interviewer ken Liu's observation that the "Chinese traditions and customs" that she draws from in her works are shown to be an unvarying cultural source that "retain their essence in the face of technological and social change." When asked about her relationship with traditional Chinese culture, Xia replies:

> Honestly, to answer this question you must reconsider “what is traditional Chinese culture” first. Since China has been experiencing great transformations in the process of modernization – “all that is solid melts into air” – one can hardly say such cultural attachment is a natural feeling or a historical construction. […] Traditions are always changing over time. It is we, the present generation living on the frontier between tradition and modernity, present and future, who struggle for our self-affirmation, not some “tradition” that retains its own self-evident essence. (Liu, 2015).

Xia sees the attachment to traditional Chinese culture as a construct for the purpose of affirming one’s cultural identity in an era when Chinese culture and society are going through great transformations. On a similar note, the “Chineseness” of Chinese SF is just as much a construct in service of a distinct identity for Chinese SF in global cultural communication.

In the interview “Buddhas in the Machine: Conversations with Han Song and Michael Berry” (April 2023 issue of *Clarkesworld*), Han Song contributes to the “complicit feedback between Orientalist and Self-Orientalist discourses” by highlighting the “uniquely East Asian perspective” of his novel *Hospital* as opposed to the Western outlook of “traditional science fiction.” However, Han fails to elaborate on the so-called “East Asian perspective” or elucidate its uniqueness, and contradicts himself by adding that the problems raised by his novel “are the same issues faced by English-speaking readers” (Sorg, 2023).

In his essay “China Dreams: Contemporary Chinese Science Fiction” (December 2014 issue of *Clarkesworld*), Ken Liu argues against imposing any totalizing and generalizing “pre-conceived set of expectations” on Chinese SF:

> Any broad literary classification tied to a culture—especially a culture as in flux and contested as China’s—encompasses all the complexities and contradictions in that culture. Attempts to provide neat answers will only result in broad generalizations that are of little value or stereotypes that reaffirm existing prejudices (Liu, 2014).

Despite the centrality of concepts such as “Chinese characteristics” and “Chinese perspective” in fabricating a unique cultural identity for Chinese SF, these very concepts prove to be illusive in definition and unamenable to reductive generalisations.

While Chinese authors writing for *Clarkesworld* are concerned with finding Chinese SF's place in the world, editors of *Non-Exist* aim to bring SF, a genre of Western origin closer to Chinese readers. On the one hand, Chinese elements in "Chinese-style SF" helps nativize SF; on the other hand, the uniform rhetoric in *Non-Exist* editorials that Chinese elements lend their unique excellence to Chinese SF to its improvement erases individual authors' intentions and inclinations when utilising Chinese cultural elements in their works. Since May 2022, *Non-Exist* began publishing a series of editorials titled "Editors Chat about Writing" (*bianji liao xiezuo*) that "comment on weekly fictions, share writing techniques, and chat about the stories behind the fictions," as the first issue of the editorial series explains (Zhong, "The Manuscript Has Been Reviewed, and Our Comments For You Are…"). A phrase that frequently appears in these editorials and which is promoted by the editors of *Non-Exist* is *bentu hua*, which means "nativization." The editorials repeatedly point out the role of nativized settings rooted in traditional culture and social reality in creating cultural connection and emotional resonance with the readers and bridging the gap between science fictional narratives and the readers' real-life experience.

One example of *bentu hua* given by the editors is the short story "Border's End" (*Bianjie de jintou*, 16 May 2022 issue of *Non-Exist*), which "drew upon Jeff VanderMeer's famous *Southern Reach Trilogy* and took quite a lot of inspiration from it" and "kept the chaos, obscurity, and nameless terror of the style of the New Weird," to quote the editor Zhong Yun's commentary (Zhong, "The Manuscript Has Been Reviewed, and Our Comments For You Are…"). What the editor particularly praised about "Border's End" is its "excellent nativization": "unlike fictions with entirely Western settings, this story incorporates native elements close to Chinese readers and constructs an uncanny event on top of the familiar scenes of our everyday life." "Border's End" is put forward as a successful example of combining a subgenre of Anglophone speculative fiction with a nativized environment which helps familiarize Chinese readers with the speculative elements of the story.

In the fourth issue of “Editors Chat about Writing,” editor Yu Lei used the example of Li Peng’s story “The Gambler’s Paradox” (*Dutu beilun*, 16 June 2022 issue of *Non-Exist*) to illustrate how nativized settings are conducive to compelling storytelling and detailed worldbuilding by virtue of the authors being better acquainted with such settings. “The Gambler’s Paradox” was originally set in Las Vegas with Western characters, but the author changed the setting to southern China and the characters to Chinese ones upon the editor’s request. The editor found the original version of Li’s story disconnected from present reality and lacking in details, while the revised version with a Chinese setting has more detailed depictions and fluent narration (Yu, “How to Depict Minute Things and Specific Characters in Grand Themes?”).

Besides Chinese stories, the editorials frequently discuss translated fictions published by *Non-Exist* that are mostly award-winning or written by established authors, and thus are taken as exemplary works for Chinese authors and readers to learn from. As the editors of *Non-Exist* are keen to promote nativization by blending SF narratives with traditional Chinese culture, they also look to translated fictions for successful precedents. The editors’ praise of SF that successfully combines genre tropes with allusions to social issues is exemplified by “We Built This City,” written by American author Marie Vibbert (published by *Non-Exist* on 15 May 2023, and also published in the June 2022 issue of *Clarkesworld*). “We Built This City” tells the struggles of workers who clean the dome of human colony on Venus, and the editor Mahat attributes the credibility, insight, and emotional weight of this story to its adoption of the author’s personal experience:

> The real people and things from the reality that the author is in intimate contact with give her a familiar space for literary creation, which turns into the authentic details and

> genuine emotions in the story. […] The author stated in her personal introduction and interview that her work reflects her personal experience of growing up among the "working class of the Rust Belt" […] These true-to-life and realistic elements serve as the anchor of the story that make it firmly planted in the readers' understanding even when the story is racing at an incredible speed above the atmosphere of Venus (Mahat, "Estrangement Could Come from the Relatively Strange Known Past and A Corner of the World").

The same editorial issue also discussed Wole Talabi's "A Dream of Electric Mothers" (16 May 2023 issue of *Non-Exist*) as a prime example of Afrofuturism and a counterpart of Chinese SF that combine history and traditional culture with futuristic technologies. Editor Mahat commended the story's effective integration of tradition into SF, since traditional culture in the story is not stiffly grafted on to future cyber technology, but moulds the very form, structure, and operating mode of said technology. To quote Mahat:

> This story could be very inspirational for writers who want to create SF with rich ethnic features. In fact, SF needs more works filled with a sense of wonder and estrangement. This sense of wonder and estrangement doesn't have to come from the unknown future or the universe; it could also be from the past or a corner of the known world that is relatively unfamiliar (Mahat, "Estrangement Could Come from the Relatively Strange Known Past and A Corner of the World").

Just as Xia Jia sees the "Chinese view" as the novum of Chinese SF for Western readers, Mahat sees the function of cultural elements from the past as novum in tales about the future.

Aside from their nativizing function, *Non-Exist* editors also conceive of Chinese elements as an elevating force that, by its inherent merit, could improve the quality of Chinese SF and establish its unique stature among the international SF community. The *Non-Exist* editors' opinion in this regard is by no means singular. In "Academics Explore Sci-Fi's Soft Power Potential," Li Yongjie suggests that SF with national characteristics can promote Chinese culture internationally in addition to boosting the quality of the stories:

> To improve the quality of Chinese sci-fi works, some scholars suggested that an in-depth study on ancient fiction tales should be carried out to add some national spice to the genre, which will not only attract readers at home and abroad but also help spread fine Chinese culture (Li, 2015).

Similar views are expressed in editorials such as the thirteenth issue of the editorial series, where editor Shui Mu examined a story titled “Walking with the Rat” (*yu shu tongxing*, 16 August 2022 issue of *Non-Exist*) by Pangzi Bu Erfei. It retells the Chinese folktale of a rat named “Dongcang Messenger” helping a destitute old woman by robbing the rich, recontextualising it in a futuristic age of advanced information technology. The editor commented that while the SF tropes in the story are common and banal, it is the usage of Chinese folktale that renders the story wonderfully weird (Shui, “‘Motive’ is Just the Character’s Unfulfilled Desire”).

“Martial Hero’s Journey in Chang’an” (*chang’an xiake xing*, 31 August 2022 issue of *Non-Exist*), a story blending Chinese historical fantasy with cyberpunk dystopia that is discussed in the fifteenth edition of the editorial series, is given as another exemplar of *bentu hua* that substitutes abstruse technical terms of computer programming with concepts from Chinese history and folklore well-known to Chinese readers. “Martial Hero’s Journey in Chang’an” is noted by the editor to have avoided falling into the cliches of classic cyberpunk tropes through rephrasing the cyberpunk setting in the vocabulary of Chinese history and myth:

> But different from those classic and cliched cyberpunk SF consisting of “virtualisation of everything,” “androids under the neon light,” and “gloomy and suppressed dystopia,” this Chang’an metaverse is so unique; it’s completely nativized in substance and form, and the stories it tells are intimately linked to our lives and correspond to major contemporary social issues […] (Zhong, “‘Less is More’”)

For Chinese editors who perceive Western genre tropes and subject matters as the normative and the conventional, Chinese culture is treated as the novel and refreshing Other that could rejuvenate trite SF narratives of Western origin.

Proponents of Chinese-style SF conceive the function of traditional cultural elements in Chinese SF as improving the quality of stories with their innate cultural sophistication and endowing the stories with a distinctive cultural identity. The uniqueness of Chinese-style SF is predicated on the assumption that Anglophone SF is a homogenous and monolithic tradition, from which Chinese-style SF is radically different. In the thirty-fifth edition of the editorial series, editor Sun Wei claims that since Anglophone readers historically rarely venture beyond English language fiction, which has little variety in itself, SF of heterogenous origins have an advantage in starting new literary trends and attracting readers:

> Readers from Western Anglophone countries, especially the US and the UK, prefer to read English novels in the past (according to surveys, they almost never read novels written in other languages). This means that stories happening in Western civilisations are all rather similar, including the mindsets of characters, narrative structures, and themes. Therefore, with Western award-winning short stories in recent years, calls for attention to minority groups are getting louder, making diversity a new trend. Chinese or Chinese diaspora writers also have this advantage: we can very easily blend our cultural background into SF and form brand new schools (such as "Silkpunk"). (Zhong, "Show, Don't Tell: Practical Tips for Integrating Descriptions into Characters' Actions")

The editor sets up the dichotomy of the historically predominant unity of Anglophone SF and the newly emerged minority of Chinese-style SF, which homogenises both Anglophone SF and SF containing Chinese elements.

The editor uses the Silkpunk aesthetic invented by Ken Liu as an example of blending Chinese cultural background and SF. However, Ken Liu himself is against such reductive and inaccurate characterisation of Silkpunk as SF plus Chinese culture. Ken Liu begins his essay "What Is 'Silkpunk'?" with the dictum: "No, it's not 'Asian-flavored steampunk.' No, it's not 'Asian-influenced fantasy.' No, it's not … It's a very specific technology and literary aesthetic." Liu explains that Silkpunk is a language of technology, the vocabulary of which "relies on materials of historical importance to the people of East Asia and the Pacific islands," and its grammar "puts more emphasis on biomimetics." As an eclectic literary approach, Silkpunk "mixes and matches elements from diverse global literary traditions that I feel at home in." Ken Liu rejects the generalised and oversimplified misconception of Silkpunk that loses sight of its specific, personal, and innovative nature. If Chinese cultural elements are used, their function is not to accentuate the "Chineseness" or Chinese flavour of the stories, but to be combined with other elements in creative ways to devise “artifacts that are new expressions in the technical language” (Liu, “What is ‘Silkpunk’?”).

In the sixtieth edition of the editorial series, editor Zhong Yun praises “Calamity of Mountains and Seas” by Lin Shuo (*Shan hai jie*, published on 24, 25, 26 July 2023 in three parts in *Non-Exist*) for its successful combination of myths from *Classic of Mountains and Seas* (*Shan hai jing*) and SF narrative, which makes readers feel both “the charm of traditional culture” and “the sense of wonder created by SF.” The editor argues that China has a long history of rich cultural legacy waiting to be tapped, therefore, “if one wants to write SF with unique native Chinese characteristics, an optimal creative route is to employ traditional Chinese cultural resources such as classical records, historical documents, philosophy and art, folklore and anecdotes, and ancient myths.” However, the editor’s interview with Lin Shuo shows that Lin Shuo has different ideas of the effect of traditional culture in SF:

> Zhong Yun: Our traditional culture is an inexhaustible treasure trove. How can we better transform it into SF ideas with a modern touch?
>
> Lin Shuo: I’ve always liked reading ancient tomes. Although conspiracy theories and urban legends have been done to death by short-form video accounts, which naturally makes these subject matters appear somewhat vulgar in the eyes of some authors. Some hardcore authors and readers might even be reminded of internet fictions that can’t be considered as SF at all as soon as “traditional Chinese culture” + “SF” is mentioned. But in fact, I think the core is still the story and the characters. There’re no bad tropes, only bad stories. Just like the inspiration of “Zhuyou”[5] in my story comes from science popularisation contents from some social media channels. The material serving as inspiration isn’t superior or inferior per se, as the execution depends on the author. (Zhong, “Unearth Fantasy Inspiration from China’s Traditional Culture/History!”)

Unlike the editor who considers it refreshing and inventive to mix SF with traditional culture, Lin Shuo thinks that retellings of historical events and folklores have been popularised by social media, therefore easily perceived as overdone and trite. The editor promotes Chinese-style SF with the assumption that traditional Chinese culture has an inherent prestige which it lends to SF stories, in contrast with Lin Shuo who believes that like any other subject, traditional culture's narrative value is neither innately good nor bad, but depends on the specific creative choices of the authors.

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[5] “Zhuyou” is a shamanistic healing technique in ancient China.

Lin Shuo also notes the opinion of "hardcore" SF readers and writers that traditional cultural elements dilute the science fictional essence of stories, or even create pseudo-SF. "Hardcore" SF fans refer to those in favour of "hard SF" compared to "soft SF":

> "Hard SF" is a sub-branch of SF normally based on solid scientific foundations and coherent scientific discourse. The term "hard SF" has become popular among Chinese SF communities since the turn of the new century, and such works have an elite status, superior to popular sci-fi writings and films and the so-called "soft SF" that is regarded as veiled social criticism. (Song, *Fear of Seeing* 126-127)

The popularity and eminence of hard SF go hand in hand with a scientistic attitude that asserts science's superiority over humanities and an unquestioning confidence in the power of science and technology - a confidence which, as I have previously discussed, is upheld by the prominent hard SF writer Liu Cixin. Such scientism could be seen in the aforementioned "Campaign to Eliminate Spiritual Pollution" in the 1980s that prioritises scientific veracity over literary creation, and more recently in the worship of hard SF, which, as Mingwei Song warns, has the potential to create a cult of technocracy (Song, *Fear of Seeing* 129). This scientistic favouritism toward hard science spawns the dichotomy of hard SF and soft SF, and by extension, hard SF and Chinese-style SF. As Wang Yao remarks on the paradoxical role of "Chinese characteristics" in SF:

> In the eyes of some critics, the blatant presence of elements of gods and demons in SF seems to tarnish the "SF orthodoxy" and turn it into "novels about gods and monsters disguised as SF." Paradoxically, Chinese SF writers often construct a binary opposition between "gods and monsters fiction" and "hard science fiction" and regard the latter as the "core" or advanced stage on the evolutionary ladder, while showing uneasiness and unwillingness to "always feel inferior and play second fiddle to Western SF writers." As a result, "national characteristics" has become a kind of paradoxical complex - on the one hand, it seems to be a shortcut for Chinese SF writers to catch up with the West; on the other hand, this route seems to go against the mysterious "scientific spirit." ("Are There No Glazed Tiles on Mars?" 121)

The binary opposition between science and traditional culture determines the ambivalent and paradoxical reception of “national characteristics” in Chinese SF: its non-scientific nature is seen to compromise SF, yet its extraneous novelty is believed to burnish it.

3. Traditional Culture and Scientific Modernity in Chinese-Style SF

Non-Exist’s effort to nativize SF and build a bridge between Chinese culture and the international SF community is notably exemplified by their 2018 writer’s workshop that invited fifteen SF authors from China, the US, Canada, and Australia to Danzhai Wanda Village, a tourism village built by Wanda Group as part of its poverty alleviation programme in Danzhai County, the Miao and Dong Ethnic Autonomous Area situated in the southwestern Chinese province of Guizhou. The main attraction of the tourism village is its ethnic Miao culture, which is promoted through “unique and authentic Danzhai Cultural Heritage projects, Miao handicrafts, Miao delicacies and Miao medicinal products,” as the official English website of the village advertises, and which the authors attending the workshop were given the opportunity to experience and draw inspiration from (“Danzhai Wanda Village Global Recruitment for Rotating Mayor”). A report published in *Non-Exist* on the workshop states its aims as

> We hope SF writers will have more inspiration when surrounded by primitive customs and traditions and ancient legends, and create stories based on traditional Chinese culture. We also hope that Chinese SF and international SF could cross paths more and that more readers will see the stories of Danzhai and Southeast Qian Prefecture (Su, 2018).

While Miao culture is uncritically viewed as part of “traditional Chinese culture” in *Non-Exist*’s report, it is nevertheless assigned a position far removed from mainstream Han culture and Chinese modernity as an uncivilised and exotic Other, which is attested by the report’s description of Miao customs and traditions as “primitive.” This description indicates the prevailing perception in Chinese society of Miao culture as premodern and marginalised – a perception that enables traditional Miao products, crafts, and ceremonies to be presented as exotic cultural commodities to be consumed by both Chinese and foreign tourists. Grace Yan and Carla Almeida Santos note that "the 'primitive' character of ethnic minorities has been interpreted as a critical and 'authentic' component of traditional Chinese culture," and that "compared to the representation of Han people, whose images are associated with both tradition and modernity, Chinese ethnic minorities are significantly confined to the expression of the past" (Yan 308-309). Xiaoping Wu observes how the exoticization and museumification of Miao culture feed into ethnic tourism in Guizhou:

> From the various brochures and guide books provided by tourism agencies in Guizhou we can see that the province is described as "the last virgin land," "mysterious land" with "diversity and color." Tourists are offered "exotic" tribal peoples […] Exoticism is a main theme in all the media (Wu 8).

The tourism propaganda projects an image of Miao culture and Miao settlements in Guizhou as untouched by modernity and little explored by outsiders; it is this image that the *Non-Exist* workshop exploits to proffer to the SF authors an Other, or a novum in the form of an exotic ethnic culture that is meant to serve as a fresh and unique source of creative inspiration. Another report defines the workshop as "an experiment combining SF and regional Chinese culture" and credits its inspiration to Chinese-style SF, or what it describes as "a unique branch of Chinese SF that finds narrative space within Chinese history, myths, and legends, and by adding scientific imagination to the mix, constructs its own distinctive outlooks and aesthetics" (Li, "Why Did This Group of SF Writers go to Danzhai, Guizhou to Write SF?"). The workshop resulted in an anthology called *Life Preserved in Amber* (2021) containing eight stories by Western SF writers who attended the workshop.

With its directive to writers to create SF inspired by traditional Miao culture, *Non-Exist*'s workshop endorses Chinese-style SF's pursuit of a distinct cultural identity independent from the Western tradition. Grace Yan and Carla Almeida Santos' discussion of the relationship between postcolonial identity and self-orientalism helps to illuminate the function of self-orientalising characterisations of traditional culture in Chinese-style SF:

> […] because the interpretation and representation of global culture is firmly entrenched in an overarching framework of Euro-American conceptions of the world, Orientalism is useful in creating a *unique* and *different* identity for the once colonized. That is, to counter a homogenous modernity discourse, recollecting and, in some cases, reinventing traditions to recreate an ancient, historical, and unchanging identity has become a strategy for the Orient. Consequently, self-Orientalism is invoked and manipulated to create a sense of difference in postcolonial power dynamics: an ideological maneuvering (Yan 298-299).

In this sense, the *Non-Exist* workshop practices self-Orientalism to invest SF inspired by ethnic Miao culture with "a unique and different identity." The workshop's investment in Chinese-style SF is also demonstrated in one of the reports on the workshop:

> What exactly does Chinese-style SF (*zhongshi kehuan*) want to express? These SF short stories from Danzhai might be able to provide one kind of answer to this question – even though it's ineffable and only a kind of hazy sentiment at times, it always makes you feel that "this story can only happen in China" (Li, "Why Did This Group of SF Writers go to Danzhai, Guizhou to Write SF?").

What is concerning is the report's admission that the ethos of Chinese-style SF is "ineffable and only a kind of hazy sentiment at times." This means that the so-called "Chinese style" cannot have a fixed message or a predetermined scope, and as we shall see, the stories inspired by the Danzhai workshop often do not so much communicate the time-honoured essence of Miao culture as its contemporary artificial reinvention. The report's claim that Chinese-style SF invites the feeling that "this story can only happen in China" implies an essentialist understanding of the category – whether coming from Chinese writers, or Anglophone writers as is the case of the Danzhai workshop, Chinese-style SF is defined by a singular essence of Chineseness that sets it apart from SF inspired by other cultures. However, this claim does not stand up to scrutiny, as Miao culture in stories produced by the workshop sometimes do not represent cultural mentalities that are specifically and exclusively Chinese, but broadly and abstractly human.

With the proclaimed nature and purpose of the workshop in mind, I will argue that the stories produced at the Danzhai workshop do not treat "traditional Chinese culture" as a static, unvarying, and established wellspring of cultural inspiration to draw from as the workshop intended, but is more revealing of the ongoing processes of the construction of a self-exoticizing and self-orientalising cultural image under the name of "traditional Chinese culture," and of the reinterpretation and reinvention of regional ethnic culture for the purpose of its integration into an urbanized and globalised China. Neither do these stories present Danzhai as an Other which acquires unique significance derived from the cultural peculiarities specific to its ethnic traditions, and which serves as the novum of the story; instead, Danzhai's Miao culture is either universalised into a part of humanity's common cultural heritage facing against the true Other embodied by extraterrestrial civilisations, or generalised into antiquated cultural mentalities that contrast with contemporary issues and technological futures, which the stories focus and reflect on.

"Monster" by Naomi Kritzer (published in *Non-Exist* on 19 October 2020, also published in *Clarkesworld* in January 2020) points out the staged and artificial nature of the ethnic cultural spectacle in Danzhai. The story follows an American biologist travelling to Miao County at the behest of FBI to track down her old friend who conducts illegal genetic editing experiments on humans, which have resulted in the deaths of many of his test subjects. The Miao County of Danzhai serves as an exotic backdrop described with a disenchanted air:

> Danzhai Wanda Tourist Village is possibly the strangest place I've ever been. Everything around me looks quaint and old, but in fact it was built from scratch just a few years ago to showcase local ethnic cultures and attract tourists to the area. Local people are employed to wear traditional costumes, walk the street playing traditional instruments, make and sell traditional crafts. It reminds me of a Renaissance festival. […] Many of the women in traditional clothing are wearing silver hats with delicately formed butterflies on the top and a jingly fringe right above their eyes. […] I wonder if the metal jewelry is heavy, if the clothing is uncomfortable, how much is prescribed, and how much is left up to them. (Kritzer, 2020)

Danzhai is portrayed as artificial and contemporary, disconnected from the original lifestyle of the local people, and dictated by a prescribed conception of how Miao culture should be displayed to foreign eyes. The narrator is more impressed with the elaborate construction of scenes of cultural pageantry than the culture they represent. In "Tourism in Ethnic Communities: Two Miao Villages in China," Joan Henderson, Goh Koon Teck, Denyse Ng, and Tan Si-Rong point out that tourism can lead to "over-commercialisation of cultures when they are treated as commodities to be bought and sold. The authentic is replaced by the contrived and artificial, and host cultures and tourist experiences are ultimately devalued" (Henderson 530). The "contrived and artificial" nature of Danzhai Wanda village experienced by the narrator brings into question the claims made by the village's official website and *Non-Exist* that Danzhai's cultural heritage projects are "authentic" and that the customs and traditions witnessed by the tourists are "primitive." The experience of counterfeit artificiality necessitates that the story focuses not so much on Miao culture per se as on the production of an image of "quaint and old" cultural spectacle.

This fictional representation of Danzhai village embodies what Wang Yao calls "the core dilemma of 'SF with national characteristics'":

> […] no matter in what ways the writers attempt to capture and express the "innate spirit of the nation," the latter is by no means some kind of unchanging and essentialized presence, but rather a constructed self-imagination of the "Orient" in the process of internalising the West as an Other, a regional cultural spectacle in the age of globalisation, and a kind of homogeneity given the quality of cultural product in the name of difference and diversity ("Are There No Glazed Tiles on Mars?" 122).

Danzhai Wanda village is "a constructed self-imagination of the 'Orient'" designed with Chinese Han tourists and foreign tourists in mind, and homogenous in the sense that since it is built to attract visitors and investments from outside the Miao community, the purpose of its existence is to connect with the great homogeneity that is the world of modernity, urbanisation, and globalisation. As a product of homogeneity, Danzhai Wanda village cannot serve as the novum, and inspires not wonder, but disenchantment.

"Mayor for Today" by Fran Wilde (20 October 2020 issue of *Non-Exist*) is a science fictional take on Danzhai Wanda village's policy of recruiting rotating mayors globally to generate publicity for the tourism village. The protagonist is assigned the job of mayor for a day at Danzhai on an employment app, but arrives at Danzhai to find that an extraterrestrial creature refuses to resign from the mayoral position, resulting in all its successors not being able to start their jobs and held up at Danzhai due to the employment app's regulations. The official website of Danzhai Wanda village describes the responsibilities of the rotating mayors as "enact and implement programs through a one-week session to aid and benefit the development and sustainability of Danzhai," "promote Danzhai Wanda Village as the ambassador of the village," and "share your Danzhai stories with our international audience," among others ("Danzhai Wanda Village Global Recruitment for Rotating Mayor"). Wilde's story gives the rotating mayor job a fantastical twist and a satirical edge by making the mayor who refuses to resign a self-aggrandising alien with the appearance of "a large blue shrimp with a bird's beak;" the alien promises to generate "more prosperity and gigs for everyone" and "bring interstellar interest to your tiny planet," yet is clueless about its job and is only concerned about making a name for itself in interstellar diplomacy. The job of rotating mayor itself is described as ceremonial and nominal and hence ineffectual: "you go, you sign some papers, plant a tree, you leave." The story satirises the ceremonial fanfare of the rotating mayors that eclipses any real experience of Danzhai's ethnic Miao culture, and exposes the cultural effect of the mayor role as false and hollow, to quote the conclusion of the story: "it was the place and its people that made the history, not the ceremonial trappings" (Wilde, 2020). "Mayor for Today" is critical of Danzhai's effort to build a cultural brand through international self-promotion: in its ambition to reach a global audience (and in the story, an interstellar one), the people and history that are essential to and constitute the local culture are slighted and overshadowed; just as Danzhai's cultural heritage is co-opted by the alien mayor for political aspirations in the story, Danzhai's Miao culture is co-opted by local authorities and tourism agencies for regional economic development in reality.

"Monster" and "Mayor for Today" are concerned not with the specificities of Miao culture per se, but with the social and economic mechanisms that orchestrate the artificial construction of Danzhai's cultural profile. "Tool Use by the Humans of Miaozhai County" (published on 10, 11, 12 May 2023 in three parts in *Non-Exist*) has a more tenuous connection to traditional Miao culture as it almost solely focuses on contemporary social issues of the region. In an interview about the story, the author Derek Künsken says that he wants to explore "how technology and society and poverty would interact." The story touches on a complex array of social issues including "racism, sexual harassment, education, disability, pay gap between women and men," in Künsken's words ("Q&A with Derek Künsken"). The story follows the life of Lian Mee, a Miao woman who is a victim of sexual harassment, and who develops AI systems that help create a safer and fairer working environment for women. As a tribute to her Miao roots, the logo of Lian Mee's company "Miao Punk Princess Inc." heavily features Miao cultural symbols:

> Vue Yeng regarded the sign above the little shop. Fine silver lines framed indigo letters, like the thread she used to embroider her wedding dress. The sign said Miao Punk Princess Inc., beside the logo of a silver fist clenched between filigreed water buffalo horns. (Künsken 2023)

The company sign evokes some stereotypical symbols and handicraft items commonly used to promote Miao cultural heritage in tourism campaigns: indigo Miao batik, Miao embroidery, buffalo horns, and Miao silver ornaments. However, these cultural symbols are mere tokens of Lian Mee's Miao heritage without becoming integral part of the narrative that traces the development of AI technologies of Lian Mee's company and their social impact. In a story that offers detailed extrapolation of future AI's practical application and explores a range of complex social issues, its representation of Miao culture is manifestly flimsy and reductive, conforming to an Orientalist imagination of ethnic culture being ancient, timeless, and mythical.

Lawrence M. Schoen's "Rule of Three" (published on 24, 25, 26 May 2023 in three parts in *Non-Exist*) is also susceptible to Orientalism in its portrayal of the practice of Miao batik. In the story, an alien descends in a backward village of Miao County, the protagonist (an American man who is half Miao) comes to the village to stay with his grandmother and investigate the alien spaceship. The alien introduces him to the "rule of three," which means any product that passes through more than three individuals in the process of its production and transmission is considered "dark" and "unlife" and cannot be detected. The alien criticises human technology that binds nature instead of encouraging its self-expression, that manipulates the environment instead of cultivating humanity's own potentials. The naturalistic way of life in Miao County appears admirable in this context in contrast to the industrial and capitalist mode of production that saturates other parts of the world. Miao batik in particular is described as an ancient craft that, unchanging, is passed down from generation to generation unaffected by time and progress that governs urban areas.

The perception of traditional Miao craft as changeless and timeless exposes the culturalist essentialism that undergirds such perception, which is not consistent with reality. To quote Arif Dirlik, culturalist essentialism substitutes "a cultural essence that defies time for culture as lived experience that is subject to temporal production and reproduction" (Dirlik 97), and "emerges from a desocialized and dehistoricized conceptualization of culture" (98). In "Traditional Culture Preservation in Chinese Ethnic Tourism Community," Xiao Qiong notes that the Sinicization of ethnic minorities, young people's separation from local communities due to schooling, and obsolescence of ethnic crafts in urbanized regions disrupt the intergenerational transmission of ethnic culture. Under these circumstances, Xiao argues, development of tourism could lead to a revival of ethnic culture. In the case of Xijiang Miao Village in Guizhou Province, to boost ethnic tourism, villagers are offered classes in traditional Miao culture sponsored by the local government (Qiong 117-133). Contrary to the orientalist and self-orentalizing conception that ethnic culture is passed down unchanging and untouched by modernity, Xiao's paper shows that both the decline and the revitalisation of ethnic cultural practices are inextricably connected to China's modernisation process.

The orientalist and essentialist portrayal of Miao batik in "Rule of Three" overlooks the social actualities of the Miao community's lived experience, which enables Miao culture to embody a universalized and generalized cultural mentality that stands in contrast to global capitalism. In stories such as Kelly Robson's "A Study in Oils" (September 2018 issue of *Clarkesworld*)[6] and Samantha Murray's "Preserved in Amber" (27 October 2020 issue of *Non-Exist*, also published in July 2021 issue of *Clarkesworld*), Miao culture is either universalised into part of humanity's common cultural heritage or reduced to a particular type of human cultural mindset, and is thus characterised as a representation of the ordinary and the familiar in response to the true novum of the stories – extraterrestrial intelligence and interstellar space. In "A Study in Oils," the Miao community represents Earth people's attachment to traditional lifestyle in contrast to the futuristic and dystopic lifestyle on the Moon colony saturated with advanced technology. In "Preserved in Amber," a Miao woman is chosen to take refuge on an alien spaceship from the apocalypse that is about to befall Earth, since her ethnicity is part of the human cultural heritage worth preserving. Carolyn Ives Gilman's "Exile's End" (26 October 2020 issue of *Non-Exist*) deals with fictional civilisations, and only borrows a few elements of Miao legends and customs to construct a fictional postcolonial civilisation in order to explore the issue of decolonising cultural heritage.

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[6] Robson's "A Study in Oils" can be found in *Life Preserved in Amber*, a collection of short stories written by Anglophone SF authors inspired by *Non-Exist*'s Danzhai workshop. "A Study in Oils" is not published on *Non-Exist*'s online account.

Non-Exist workshop aims to establish a different cultural perspective against the normative Western worldview. However, stories from the workshop call into question the effectiveness of self-orientalising practices, namely the reinvention and retelling of tradition, when it comes to creating a unique cultural identity. The artificiality of Danzhai's reconstruction of cultural scenes and its conformity to the hegemony of global capitalism, as well as Miao culture's narrative role of representing generalised human cultural mentality and heritage, indicate that Chinese-style SF is more likely to merge into homogeneity than contribute to diversity and originality in SF storytelling.

Clarkesworld's publications on Chinese SF are wide-ranging in subject matter, and Chinese-style SF counts for only a minor proportion of them. Out of the forty Chinese stories published in *Clarkesworld* between 2020 and 2024, only eight of them prominently feature Chinese culture, history, and myths, and could thus be categorised as Chinese-style SF.[7] However, Chinese-style SF receives considerable attention in *Clarkesworld*'s non-fictional essays and interviews. While self-orientalism and culturalist essentialism underlies *Non-Exist* workshop's appropriation of Miao culture, some Chinese writers of *Clarkesworld* stories are wary of and seek to sidestep culturalist essentialism. In the previously discussed interview with Xia Jia, Xia rejects the observation that traditional Chinese culture is an invariable essence that defies change; according to Xia, traditional culture is a construct that fulfils the need of cultural self-affirmation of the present generation facing a fast-changing society (Liu, 2015). Congyun "Muming" Gu, who frequently draws from classical Chinese literature in her works and has published two stories in *Clarkesworld*, says in an interview that she uses Chinese history and myths to explore certain concepts, not simply to impart her stories with a superficial "ambience of Chinese antiquity" (*gufeng*) (Cheng, 2022).

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[7] The eight Chinese-style SF works are Chen Qiufan's "The Ancestral Temple in a Box," Congyun "Muming" Gu's "The Serpentine Band," Wang Zhenzhen's "The Orbiting Guan Erye," Liang Qingsan's "The Possibly Brief Life of Guang Hansheng," Chu Shifan's "Giant Fish," Cao Baiyu's "Zhuangzi's Dream," Zhu Yixuan's "The Painted Skin and the Final Stroke," and Tan Gang's "The Reflection of Sand."

It also makes sense that since culturalist essentialism is espoused to create a unique identity that counters "Euro-American conceptions of the world" (Yan and Santos 298) and to promote palatable cultural narratives that accommodate Western imaginations of the Orient, Chinese SF authors who originally write for a domestic readership have no use for essentialist representations of Chinese culture to cater to an international audience or to furnish their works with a "Chineseness" distinct from the Western SF tradition. Therefore, Chinese writers who adopt elements of traditional culture in their works are more interested in either creating cohesion or exploring the tension between tradition and modern science and technology. Furthermore, the unlikely combination of Chinese antiquity and futuristic technology serves as a novum in these SF stories, the novelty of which hinges on the notion that traditional Chinese culture and scientific modernity are ruptured and dichotomous, as Wang Yao observes:

> Even when the two phrases "China" and "SF" are juxtaposed, the juxtaposition itself brings a kind of tension - the former is more likely to remind people of history, tradition, myth, martial arts romance, localism, and particularity, while the latter represents the future, modernity, technology, the West, globalization, and universality. ("Are There No Glazed Tiles on Mars?" 119)

As an exercise of integrating tradition and scientific imagination, Chinese-style SF is based on the perception that tradition Chinese culture and scientific modernity of Western origin have a disconnected and discordant relationship.

The discontinuity between tradition and modernity is embodied by the protagonist Guang Hansheng and the wider historical context of the late Qing Dynasty in Liang Qingsan's "The Possibly Brief Life of Guang Hansheng" (*Guang Hansheng huoxu duanza de yisheng*, May 2022 issue of *Clarkesworld*). In the story, the modern-day narrator discovers in the library archives a serialised SF written by an obscure writer called Guang Hansheng who was active during the early twentieth century. Guang is portrayed as “an awkward, cantankerous savant possessed of scientific insight transcending his epoch, but unable to communicate it effectively.” On the one hand, Guang has no way to advance his career as the old social order is crumbling and the imperial exam system has been abolished; on the other hand, his talent fails to be appreciated by fellow intellectuals and the public since he possesses scientific knowledge ahead of his time. Caught in the fissure between the traditions of old dynastic China and the new scientific system imported from the West, Guang symbolises the uneasy and disjointed relationship between tradition and modernity. The contrast between China’s struggle to free itself from antiquated traditions and the scientific modernity of the West is apparent in how the narrator phrases the content of a magazine which he gleans to look for Guang’s SF:

> I began my search of *The All Nations Gazette* in 1900. I scrolled through days and months and years, through the Boxer Rebellion and the signing of the Boxer Protocol, Marie Curie’s research on radioactive uranium, commercial use of ariel photography in Los Angeles, and more, but no trace of Guang Hansheng. (Liang, 2022)

The magazine shows that while the West enjoyed scientific breakthroughs, China was enmeshed in social upheavals fueled by contact with the West. Tradition is portrayed negatively as an impediment to China’s progress toward modernity; in Dirlik’s words, “a surplus of history […] defines the state of ‘premodern’ non-European societies,” and “it is the burden of the past in one form or another that marks a society as traditional, which impedes its ascent to modernity” (Dirlik 100). Dirlik also points out the Eurocentric nature of this understanding of modernity – the view that China needs to unload the burden of tradition to catch up to Western modernity provides no alternative to development except the European one.

Chen Qiufan’s works are notable for addressing the complicated and fluctuating relationship between tradition and modernity, which are by turns intertwined with and repelled by each other. Jason Cong Lin explains this relationship from a historical standpoint:

> Unlike North America and Europe where modernity has been seriously challenged, many Asian nation-states still consider modernity a desirable goal that can advance and

> strengthen their nation. Their colonial and humiliating history has led them to experience complex feelings towards their traditional culture (e.g. pride and shame) and western culture (e.g. fear and worship), and this motivated them to emphasise inheriting and modernising traditional culture for catching up and exceeding their western counterparts. (Lin, 85)

Chen Qiufan's "The Ancestral Temple in a Box" (*Xia Zhong citing*, January 2020 issue of *Clarkesworld*, also published in 10 April 2023 issue of *Non-Exist*) puts forward yet challenges the view that the preservation of tradition is a cumbersome impediment to technological innovations. The protagonist comes from a clan in southeast China famed for handmade gold-lacquered wood carving, a skill passed down through generations. The protagonist sees the ancestral temple of the clan as "a standing embodiment of ossified traditions, that restrained Father from embracing the bold technological inventions of the new world." His brothers also reject using modern technology in wood carving because "abandoning our traditional handicraft is the same as betraying the art, betraying our ancestors, and generations of wisdom they passed down." The protagonist's father eventually comes around to the idea of combining virtual technology with wood carving. The father-son conversations convey an anxiety that tradition needs to be reimagined and reinvented to "fit into the future" in order to avoid elimination: "nowadays, humans are colonizing space; 3-D printing is everywhere. Why do people still care for gold-lacquered wood carving?" (Chen, 2020) In this sense, the story's understanding of modernity has an undertone of social Darwinism – as "history develops along a linear scale" (Yan and Santos 298), so tradition needs to evolve to reach the higher plain of modernity and converge with it to justify its value.

Zhang Ran's "The Snow of Jinyang" (*Jinyang xue*, June 2016 issue of *Clarkesworld*) tells the misadventures of a time traveller who, due to his broken time machine, is stuck in the city of Jinyang under siege during the war-torn tenth century China. The novum of the story are technological gadgets recreated by the time traveller using tools available at the historical period he travels to, giving rise to an assortment of curious devices that meld ancient crafts with concepts from modern technology. For example, the time traveller created internet for the city of Jinyang based on the movable type invented by the Song Dynasty artisan Bi Sheng. The movable type blocks bearing carvings of Chinese characters are each attached to a strand of silk thread, with the silk threads collected into a bundle called the "web;" the bundles of threads are then linked together to form the "internet." At first glance, Zhang Ran's story seems similar to the type of Chinese SF exemplified by Tong Enzheng's *Death of the First Robot in the World* (*Shijie shang diyige jiqiren zhisi*, 1983), which was adapted from "Yanshi," a story from the classical Chinese literary text *Liezi*. Zhan Ling singles out Tong Enzheng's story as a pioneer of SF with national characteristics, and sees Tong's novel as an attempt to find the germination of science fictional imagination in ancient Chinese culture:

> Tong Enzheng's retelling of the mythical legend of Yanshi, such as the scientific principle behind making the wooden figures and reasonable imaginings that grow out of these scientific principles, is intended to prove that scientific spirit already existed in ancient China […] The value of *Death of the First Robot in the World* lies in the fact that through telling the story of the ancient wooden figure, the novel makes science no longer an Other to national culture both materially and spiritually, and tradition and modernity no longer ruptured and alienated but mutually integrated and not dependent on the West to develop. (Zhan 72)

However, unlike Tong Enzheng's novel, Zhang's story does not intend to "prove that scientific spirit already existed in ancient China." Science did not and could not germinate in the social context of tenth century China, where the time traveller's inventions are disproved by Confucian scholars as "disgusting ostentation" distracting from dire political situations (Zhang, 2016). Modern technology brought to ancient Jinyang fails to take root, and the time traveller's inventions vanish without a trace in subsequent history. In an interview, Zhang Ran dubs "The Snow of Jinyang" and his other similar stories "historical SF" (*lishi kehuan*), and suggests that historical SF should be aware of the realistic limitations of what ancient Chinese inventors could produce without scientific knowledge:

> When writing, we should focus on things that ancient craftsmen are capable of creating. In ancient China, science in fact didn't exist, and there was only the culture of artisans.

> This is because the inheritance and development of science wasn't given priority in ancient China, and great inventions could only come from certain techniques passed down by craftsmen through generations. ("Zhang Ran - What is Science Fiction (part 1)")

Zhang Ran believes that SF in historical settings should heed the historical reality that traditional Chinese culture is marked by a lack of scientific thinking.

In contrast to the abovementioned antithetical representations of traditional culture and modern technology, other Chinese writers aim to find confluence of the two. In *Science for the Empire*, Hiromi Mizuno notes that when Western science was introduced into Japan, the "legitimacy and authority" it gained "on account of its supposed universality" threatens to invalidate the cultural narrative that forms Japan's national identity:

> Universally verifiable and applicable, modern scientific knowledge made local cultural logics irrelevant. For non-Western nations whose modern national identities were constructed around local cultural logics and mythologies, incorporating modern science into those logics and mythologies posed a problem, even a threat. (Mizuno 2)

China faces the same problem in its process of courting modernisation, while Chinese SF writers provide various narratives that reconcile science and traditional culture. Cao Baiyu's "Zhuangzi's Dream" (*Zhuangzi de meng*, January 2023 issue of *Clarkesworld*) contains a retelling of the famous debate between ancient Chinese philosophers Zhuang Zi and Hui Zi – the fish that they debate about turns out to be an automaton built by Zhuang Zi, and in a dramatic twist, the two philosophers are revealed to be automatons too. The story's scientific reimagination of classical literary texts, in Zhan Ling's words, constructs a narrative that seeks to "make science no longer an Other to national culture both materially and spiritually […] and tradition and modernity no longer ruptured and alienated but mutually integrated" (Zhan 72). However, the robotic nature of the two philosophers are imposed on the plot rather than growing organically from the historical context and intellectual milieu of the story, rendering the integration between tradition and modernity less convincing. Chen Qiufan's "Coming of the Light" (*Kaiguang*, March 2015 issue of *Clarkesworld*) takes another approach to discovering the convergence of tradition and modernity. The protagonist's wife points out the commonality between traditional religion and modern technology in the sense that they both prey on the same weaknesses in human nature:

> She believed that despite the appearance of unprecedented novelty, the high-tech industry was ultimately no different from another ancient trade: they both took advantage of the weaknesses of ordinary men and women, and, under the guise of words like "progress," "uplift," and "salvation," manipulated their emotions. Whether you put your hand on a Bible or an iPad, in the end you were praying to the same god. (Chen, 2015)

The protagonist develops an app that is consecrated by Buddhist monks, which goes viral among the public. Therefore, traditional beliefs and modern technology are indeed devoted to the same purpose in the story.

Congyun "Muming" Gu's "The Serpentine Band" (*Wanzhuan huan*, August 2021 issue of *Clarkesworld*) tells the story of a Ming Dynasty intellectual who builds a garden to open a portal to a higher dimensional universe, and reinterprets traditional Chinese philosophy and myths in scientific and science fictional terms. Gardening principles in ancient China and the Daoist Yin-Yang Taiji symbol are associated with the topological properties of mobius strip and klein bottle, the mythical Peach Blossom Shangri-La is reimagined as a parallel universe, and the Daoist philosophy of *Liezi* is reframed as principles of higher dimensional space. In an interview concerning "The Serpentine Band," Gu states that since designing a traditional Chinese garden and travelling to a higher dimensional universe are both "manoeuvring space," the concept of "space" unites the two otherwise unrelated activities and allows tradition and futurism to converge. Gu explains her penchant for forming "confluence" in her works:

> One of my basic thought processes is to re-examine the motifs in historical and cultural traditions, myths, and classic literature to unearth their modernity. I have a multidisciplinary background, so through thinking and writing, I want to combine two or more language systems in novels, and this is the so-called "confluence." My novels often use "confluence" as the starting point for the conceptual framework, because the core technical concepts and deduction processes are often contemporary and imported, but the cultural background, perspective, characters, values, and ideas are Chinese and not contemporary. (Cheng, 2022)

While what Gu means by “unearthing modernity” is vague in this quote, another interview helps to elucidate Gu’s understanding of modernity:

> I feel that from these texts that seem to be diametrically opposed to the contemporary, the future, and to science and technology, we can find something that doesn’t change with time, culture, or forms of expression. In other words, we can discover modernity from classical texts. (Yuan, 2023)

Gu’s explanation of her creative process poses two “diametrically opposed” groups of concepts: contemporary Western modernity and the scientific and technological ideas that come with it, and traditional, historical, and pre-modern Chinese culture and values. Gu equates modernity with the constancy and universality of scientific rules, which is supposedly impervious to historical and cultural change. Therefore modernity acquires “legitimacy and authority” on account of “the supposed universality” of science (Mizuno 2), and Gu does not so much discover the intersection of tradition and modernity as subjects tradition to the appraisal of modern scientific values – Ming Dynasty garden planning in Gu’s story is idle and pointless labour unless it follows certain scientific principles that allows it to establish connection with parallel universes. As Zhan Ling argues, although Chinese SF draws from non-Western cultural roots, its narrative still operates within the Western cognitive framework of scientific progress (Zhan 73).

Some other Chinese-style SF published in *Clarkesworld* use traditions and myths to critique modernity, thereby overturning tradition’s inferior position to modernity. Chen Qiufan’s “Fish of Lijiang” (*Lijiang de yuer men*, August 2011 issue of *Clarkesworld*), set in the ethnic tourist town Lijiang, shows a similar sense of disenchantment with Naomi Kritzer’s “Monster,” and criticises how prevalent AI technology ruins the authentic and soul-healing experience of local traditional culture. Xia Jia’s surrealist “Spring Festival: Happiness, Anger, Love, Sorrow, Joy” (*2044 nian chunjie jiushi*, September 2014 issue of *Clarkesworld*) tells a contemporary Chinese citizen ascending into heaven like immortals in ancient myths to escape from the ever-present and invasive state surveillance. Another story by Chen Qiufan titled "Balin" (*Balin*, April 2016 issue of *Clarkesworld*) portrays a humanoid creature inspired by the mythical creature *paoxiao*, who is studied as a test subject in a scientific experiment but renders the experiment pointless, as the experiment's technology is unable to gauge the creature's profound empathy and resonance with the entire universe.

4. Conclusion

Chinese-style SF is defined by its self-othering in the sense that it identifies as an estranging Other to normative Western SF. Analysis of *Clarkesworld* interviews and essays suggested that framing Chinese SF as an Other through self-orientalising characterisation of Chinese culture limits the genre's value and appeal to cultural estrangement and exoticism for international readers. The supposedly distinctive and exotic "Chineseness" of Chinese-style SF is shown to be a construct for the purpose of fabricating a unique cultural identity, and proves to be ill-defined and devoid of concrete significance. In the case of *Non-Exist* which targets domestic readers, Chinese-style SF is meant to nativise SF and acquaint readers with SF narratives originating from the West through contextualising them in familiar cultural or social elements. In addition, traditional culture is believed to possess an innate virtue that contributes to refining the quality of Chinese-style SF. This cultural essentialist understanding homogenises the function of traditional culture in Chinese SF, and neglects individual authors' personalised and diverse usage and understanding of Chinese cultural elements in SF. Chinese-style SF published in *Clarkesworld* share similar tendency to either search for common ground or identify tension between tradition and science, which is prompted by the assumption that traditional Chinese culture is devoid of science and extrinsic to SF. Deliberate attempts to integrate Chinese tradition with scientific imagination only further accentuates the underlying presupposition of the dualistic relationship between the two, which, in turn, generates essentialised and reductive understanding of what is Chinese and what is Western: the former is perceived as culturally prestigious but anachronic and changeless, in contrast with the latter that is assumed to be the benchmark for modernity, and represents the scientific and is therefore universal. *Non-Exist*'s Danzhai workshop, being an example of advocating for Chinese-style SF on the international scene, conceives of the role of Chinese cultural perspective as a SF novum due to its estranging effect. However, close readings of texts produced at the Danzhai workshop indicated the opposite, as such stories do not deviate from but reinforce the norm of "tradition" being a contemporary and artificial reinvention representing generalised and unspecific cultural mindsets, which is in response to the hegemonic discourses of modernity and scientific progress. Therefore, although the "Chinese style" is a construct to create otherness, it ultimately conforms to homogeneity, proving that Chinese SF cannot contrive a unique self-identity based on dichotomous difference from the normative.

Conclusion

In *Alien Encounters: Anatomy of Science Fiction* (1981), Mark Rose observes that stories like H.G. Well's "The Star" (1897) and Pamela Zoline's "The Heat Death of the Universe" (1967) "are composed within the semantic space created by the opposition of human versus nonhuman." He goes on to argue that, "indeed, this opposition defines the semantic space, the field of interest, within which science fiction as a genre characteristically operates. It constitutes what we may call the genre's paradigm" (Rose 31-32). Although this thesis recognises the centrality of the "human versus nonhuman" paradigm to SF, its study of nonhuman sentience and otherness in SF has shown that, the relationship between human and nonhuman, or between the normative and the Other, is far more complex and intertwined than simple opposition. Through comparative readings of Chinese and Anglophone SF that focus on nonhuman sentience or belong to the category of "Chinese-style SF," this thesis argued against rigidly inscribed boundaries between binary oppositions that generate absolutist and essentialist definitions and reductive and insular views of the binary concepts in question. As the chapters have demonstrated, the relationship between the human and its supposed nonhuman antithesis is fluid, interactive, and metamorphic, with each mirroring and encompassing the other, which makes the human and the nonhuman a continuum rather than a dichotomy. The complex interplay between humans and nonhuman sentience in the stories examined expands conceptions of the human and reveals the paradoxical quality of the nonhuman as both a mirror image and an absence of the human. Furthermore, the nonhuman exceeds the human by transcending the binary structures of human knowledge and a binary human worldview that centres anthropos and the nonhuman.

Through comparing and contrasting Chinese and Anglophone SF texts, the salient characteristics of the texts' approach to nonhuman sentience were brought into focus: Liu Cixin's materialism contrasts with Arthur C. Clarke's Cartesian dualism; Han Song's alienating technology is the inverse of Jeff VanderMeer's supernatural dissolution of technology; Hao Jingfang's AI that scorn human values is the opposite of Isaac Asimov's robots that aspire to be human. However, my comparisons of Chinese and Anglophone SF show that the relationship between them is more complex and nuanced than mere dichotomy. Dual readings of Chinese and Anglophone texts help to uncover universal patterns in binary relationships between the norm and the Other and to obtain diversified portrayals of nonhuman sentience. Differences in Chinese and Anglophone texts' conceptions of nonhuman sentience are products of specific literary and social contexts and the authors' personal creative choices, instead of resulting from the dichotomous difference between Chinese and Anglophone SF.

As I argued in the last chapter on Chinese-style SF, treating Chinese SF and Western SF as binary oppositions engenders generalised, homogenised, and essentialised perceptions of cultures and SF works. Chinese-style SF emerges from the binary constructions of traditional Chinese culture and Western scientific modernity, and of exotic Chinese SF immersed in ethnic traditions and normative Western SF of homogenous stock. However, the composition of Chinese-style SF is dependent on its supposed Western opposite: Chinese-style SF assumes that its SF tropes and scientific ideas – to which Chinese cultural elements are joined – are fundamentally Western, and the Oriental tradition it rests on is a construct in response to Western cultural hegemony. Chinese-style SF's relationship with its Western antithesis was shown to be as entangled as that between the human and the nonhuman.

This thesis started with the quintessential SF Other – extraterrestrial intelligence. The first chapter compared aliens in Arthur C. Clarke's *Childhood's End*, *2001: A Space Odyssey*, and *Rendezvous with Rama* with aliens in Liu Cixin's *Remembrance of Earth's Past* trilogy. Alien civilisations in Clarke's and Liu's novels exhibit different essential traits, but both challenge the limits of and subvert the human. Clarke's incorporeal cosmic consciousness represents intellect unfettered by biological limitations, unfathomable by human science, and indifferent to mankind's parochial territorial ambitions and scientific industry that incite violence. Liu's alien civilisations abide by the Dark Forest laws of the universe that are built on Darwinian axioms and determined by physical properties of the universe, which are scientistic by nature, unsympathetic to the self-centered morality that undergirds human civilisation, and displaces humanity to an insignificant mathematical point in a web of multitudinous civilisations. On the one hand, aliens in Clarke's and Liu's works represent antitheses of the human; on the other hand, these aliens are humanised to some extent and mimic human behaviour and thinking to hide their otherness, which allows meaningful interaction between aliens and humanity. Furthermore, the boundary of the human-alien binary is crossed and the human category expanded when humans discard their finite physicality and transform into aliens, or acquire alien mindsets that no longer revolve around homocentric beliefs – a necessary evolutionary step for humans to take when they leave their terrestrial cradle and venture into outer space. By creating absence and obscurity in characterisations of the aliens and invoking inhuman frames of reference, Clarke and Liu invest their aliens with an irreducible otherness that transcends human binaries.

The second chapter discussed ten short stories written by Liu Cixin prior to *Remembrance of Earth's Past* that focus on humanity's first contact with extraterrestrial intelligence. These short stories contain precedents for alien characterisations in Liu's trilogy, but are not subject to the inflexible and homogenous Darwinian laws that govern cosmic civilisations in *Remembrance of Earth's Past*, and are therefore unconstrained by the trilogy's central binary of amoral and scientistic aliens and moral and homocentric mankind. This opens up possibilities of a wide range of alien values and viewpoints, which allows discussions of the binary of human self and alien Other in a more diverse context. The alien philosophy of effacing the self and faithfully mirroring the universe as self-expression abolishes the anthropocentric binary of self and Other altogether. While some alien characters are imaginations of posthuman futures untethered to the reality of human condition, others are reflections of human concerns, specifically the societal issues brought about by scientific progress. Influenced by the dichotomy of science and literature that at one time dominated the social discourse on Chinese SF, human-alien relationship in Liu's short stories is characterised by the binary of scientism and humanism: the former is represented by unbending rational laws and quantifiable technological power that spurn subjective human essence, while the latter upholds innate human worth that manifests as unique human creativity and potential for unbounded progress. The non-hierarchical coexistence of the dualistic values of scientism and humanism, wherein neither side is accorded categorical or inherent virtue, generates diversity and relativism in civilisational outlooks and challenges absolutist positions.

The third chapter moved on from aliens external to humanity to the alien within the human, and compared transhuman monsters in Han Song's novel *Subway* with those in Jeff VanderMeer's novel *Annihilation*. If aforementioned first contact with aliens results in evolutionary progress and technological advancement that allow humanity to connect with the universe, humans' encounter with the uncanny and grotesque in Han's and VanderMeer's novels defies the idea of linear and ordered rational progress that strengthens human agency with tales of cyclical stagnation, ecological chaos, biological aberrations, and passive acceptance of the dissolution of human identity. Han's subway tunnels and VanderMeer's Area X, fantastical as they are, are grounded in reality as allegories and subversions of real-life social and environmental issues. Han's devolving humans who blindly follow the command of technology, which sets out cyclical routes that go nowhere, counter the official narrative of China's continuous social and technological progress. VanderMeer's preternatural region that dissolves the human in an intermixture of all materialities, and which reverses industrial pollution to pristine nature, overturns real-world environmental catastrophes and human encroachment on nature that result from technological control and scientific compartmentalisation and instrumentalisation. Supernatural realms in the two novels both reflect mundane reality and invade it; the process of mirroring and entangling between the transhuman Other and the normative human collapses the boundary between the two, proving the falseness of the dichotomy of the human and the nonhuman that ultimately gives way to an all-encompassing unity reshaped by the alien laws of existence that percolate to the mundane. Transhuman monsters in Han's and VanderMeer's novels are created with both principles of the uncanny and principles of the Weird: the former leads back to the primal and repressed and therefore familiarly human, in contrast with the latter that produces unknowable, unrepresentable, and unpredictable radical Otherness beyond binary containments.

The fourth chapter compared artificial intelligence in Isaac Asimov's *The Complete Robot* with that in Hao Jingfang's *Humanity's Other Shore*. Asimov's and Hao's awareness of AI as a real-world technological Other with a vital part to play in humanity's future has the effect that, unlike aliens and transhuman monsters that are sometimes metaphors and allegories of human affairs, AI in their stories impact society and drive the narrative through their mechanical design and digital programming, not their symbolic connotations. Asimov and Hao envision AI as imitations of human intellect and form, and as a double of the human that is both humans' mirror image and an encroaching Other: its nonhuman otherness underlying its perfect replication that obscures the human-AI distinction unsettles ingrained and inflexible definitions of the human, and disrupts the human-AI hierarchy of creator and creation, of original and duplication. The AI double is designed as an instrumental extension of the human but usurps human identity and experience, displacing the human rather than expanding it. Asimov and Hao diverge on whether to give prominence to AI's affinity to humans or its otherness. Asimov's aversion to the "Frankenstein Complex" prompts him to bind his robots with ethic laws that make them rational and moral agents that are reflections of idealised humans. Asimov's robots are humanised both by human characters' anthropomorphism of them, and by their programmed tendency to follow human values and mentalities and even categorise themselves as humans, thereby broadening conceptions of the human beyond its essentialised definitions. Hao's real-life concern about AI dominance reducing humans to data and destroying humanistic values is an incentive for her stories to assert the merit of human emotions produced by unique human physiology, which AI's abstract digital calculations cannot emulate. Hao's AI, in contrast to Asimov's, question and disdain essentialised human features, and true to their nonhuman otherness, subscribe to a non-anthropocentric worldview of statistical calculation and immaterial quantification.

The fifth chapter deviated from the theme of nonhuman sentience to explore the binary of Chinese SF and Anglophone SF that structures previous chapters through interrogating the concept of "Chinese-style SF." This chapter surveyed a wide range of materials such as essays, editorials, interviews, and short stories from *Clarkesworld* and *Non-Exist* that are pertinent to Chinese-style SF. Chinese-style SF is conceived as SF with a distinct cultural identity derived from incorporating Chinese cultural elements, which sets it apart from hegemonic Western SF. Chinese scholars, writers, publishers, and editors who advocate for Chinese-style SF promote it to international readers for the estranging novelty of its exotic cultural experience; while to a Chinese audience, Chinese-style SF is meant to nativise SF and raise the quality of Chinese SF with the merit of traditional Chinese culture. Whether intended for the international SF community or the domestic one, Chinese-style SF is predicated on the dichotomy of traditional Chinese culture that is antiquated and unchanging, yet marked by an exalted and timeless essence, and Western scientific modernity that is universal, contemporary, and normative. The dichotomy produces essentialised and homogenised perceptions of both Chinese culture and by extension Chinese-style SF, and the supposedly antithetical Western scientific culture, as editorials from *Non-Exist* demonstrated. Close readings of editorials and interviews from *Clarkesworld* indicated that seeking a distinctive cultural identity for Chinese SF by prioritising its Chinese cultural roots restricts the literary value of Chinese SF to cultural estrangement and exoticism. Analyses of stories from *Non-Exist*'s Danzhai workshop revealed traditional culture that is meant to inspire Chinese-style SF as a self-exoticising construct that accommodates to Orientalist imagination and loses specificity through representing generalised cultural outlooks. Stories published in *Clarkesworld* testify to Chinese-style SF's underlying premise of the dichotomous and disrupted relationship between Chinese historical tradition and scientific modernity. Ultimately, Chinese-style SF both homogenises works that fall into its category, and falls under the homogenous binary framework of the Western norm and the exotic Oriental.

This thesis followed the paradigm of its predecessors that compare and contrast Chinese and Anglophone SF texts, which identify similarities and differences in the texts' engagements with the same themes and correlate them with social, historical, and literary contexts. Beyond enumerating where Chinese and Anglophone works coincide or vary, however, this thesis also explored the underlying binary structures in comparative studies of Chinese and Anglophone SF, which helped to illuminate both the productiveness and the limitations of dualistic readings of SF texts. This thesis demonstrated that, although binaries produce meaningful categories, these categories are restrictive, factitious, and reductive, which means that the boundary separating such binary categories is untenable and inevitably confounded by the entangled and paradoxical relationship between binary pairs, where one side is both reflection and negation of the other side. As such, this thesis rejected a dichotomous understanding of the relationship between human and nonhuman sentience, and between Chinese and Anglophone SF. As a study of the binary of the normative and the Other in SF, this thesis showed that SF thrives on binary oppositions and generates meaning through difference. However, as a genre in search of true otherness, SF needs to find it beyond binaries – to establish an Other whose nature is not bound by conceptions of the normative is to liberate it from binary oppositions. Just as the irreducible otherness of nonhuman sentience is beyond human binaries, Chinese SF cannot truly establish itself as a discrete and distinctive Other by trapping itself in dualisms.

In the case of this thesis' analysis of nonhuman sentience, binaries are generative of boundaries that determine meaning in the sense that juxtapositions of Chinese and Anglophone SF help to pin down and throw into sharp relief how subjects such as nonhuman sentience's characteristics and symbolic significance, and science's relationship to the human-nonhuman binary, are treated by Chinese and Anglophone texts comparatively. The chapter on Liu Cixin's short stories provided another example of the binary of science and literature producing a proliferation of existential values. However, boundaries produced by binary oppositions prove to be insupportable, as the reciprocal, complex, and ambiguous relationship between the human and the nonhuman in the texts examined collapses the boundary between them.

Some preceding comparative studies of Chinese and Western SF take the dualistic relationship between Chinese and Western works to the extreme by framing them as culturally antithetical. One example is Li Ke's paper comparing Wang Jinkang's *The Cross* (*Shizi*) with Max Brooks' *World War Z: An Oral History of the Zombie War*, which contrasts Western utilitarianism in Brook's novel with Chinese collectivism in Wang's novel. There is also a considerable body of scholarly works that dwell on comparisons of Chinese and Anglophone SF films and their dichotomous cultural values. *The Wandering Earth*, adapted from Liu Cixin's story of the same name, is almost invariably chosen as the representative of Chinese SF films to be compared with American SF films such as *2001: A Space Odyssey*, *Avatar*, and *Interstellar* to highlight cultural differences between China and the West, with the opposition of Chinese collectivism and Western individualism being a ubiquitous observation. This cultural essentialist approach to comparing Chinese and Western SF engenders an oversimplified and ill-supported understanding of the discrepancies between Chinese and Western works that are reduced to contrasting cultural essences. Opposed to such essentialist stance, this thesis proposed a text-specific and non-dichotomous reading of Chinese and Anglophone SF that does not generalise differences.

This thesis' final chapter on Chinese-style SF was a response to the dualistic and cultural essentialist interpretation of Chinese and Western SF, and argued against the creation of reductive, rigid, and homogenous categorisations through constructing antitheses and enforcing immalleable boundaries. As a product of the dichotomous perception of Chinese and Western SF, Chinese-style SF is simultaneously a reflection and a negation of Western SF, as much as nonhuman sentience is both a mirror to and an absence of the human. In this way, Chinese-style SF tethers its self-characterisation to the dominant and normative Western tradition. Therefore, if Chinese SF is to establish a unique self-identity not dependent on the Western norm, it cannot rely on a constructed difference from the West that is derived from exoticised perception of Chinese culture, and which overlooks the specific and diverse reality of Chinese SF. As I have demonstrated with the cases of Ken Liu, Zhang Ran, Congyun "Muming" Gu and other SF authors, the distinctive character of their stories stems from their own particular and individualised conception of the relationship between technology and culture, and not from a uniform self-orientalising practice of applying traditional culture to SF narratives. If Chinese culture is to contribute to the formation of otherness in SF stories, it should be used to serve the authors' specific visions, instead of being regarded as a fixed formula to be followed. In the same vein, while Chinese SF is often at a loss to define its own "Chineseness" that distinguishes it from SF from other parts of the world, perhaps a collective identity of Chineseness would organically emerge around influential Chinese SF works true to their authors' diverse visions, and a deliberate effort to fabricate an overarching "Chinese style" based on the Orientalist binary of the Chinese and the Western would not be necessary.

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