The Original China Dream: Visions of the Future in Literature and Criticism, 1927-1949

人怪學科的裏塲影攝

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'Why do I write science fiction' (SF), pondered Gu Junzheng in June 1939, which was a question that needed answering when China was in its darkest hour. The Japanese invasion of 1937 had swept away Chinese Nationalist (KMT) forces across the major eastern metropolises, including the Paris of the East, Shanghai, where Gu was publishing his magazine *Science Interest* (Kexue quwei). 'I want to read H.G. Wells' (威爾斯) fiction', wrote Gu, 'but the library I used was destroyed by bombs, and remaining collections moved away, so all I could get was a dual Japanese and English edition of his short stories'. As he deciphered Wells, Gu stated that Hugo Gernsback's (雨果·根斯巴克) *Amazing Stories* (驚奇故事) held no appeal for him because they were too fanciful. To strip away 'fantasy' (*kongxiang*) from 'science novels' of the past, while fusing contemporary empirical epistemology with narratives of the future, was in his estimation the main goal of China's modern SF writers.[1] Gu's

dismissal of *Amazing Stories,* and the implied critique of late Qing fantastic science fantasy, offers a warning to today's literary historians: any normative definition of SF from a 21st century perspective cannot simply be forced into the generative chaos its early 20th century forebear. Although modern Chinese science fiction emerged from this period, one cannot change bodies so easily without inevitably changing the mind as well.

Examination of the early evolution of Chinese SF, which at the time was predominantly referred to as *kexue xiaoshuo* (science novels, or simply science fiction), reveals how existing genres, media, and cultural movements converged to produce a new way of writing about the future in a non-Western literary milieu. The context in which Chinese SF evolved was characterised by vernacular movements, popular politics, imperialist threats, and the KMT government's revolutionary promotion of national science. Early twentieth century writers created Chinese SF through engagements with adventure tales, science reporting, and a new interwar magazine culture, starting at the fin-de-siècle and reaching its apogee during the 1930s.[2] Current scholarship focuses almost exclusively on turn of the century writers, in part because their work is easily identified by generic tagging in online databases (e.g., as *kexue xiaoshuo*). By the 1920s, however, dreams of the future moved beyond late imperial fantasy tales to embrace speculative science writing, and not just in China but also in the Soviet Union, the Anglophone world, and Imperial Japan. In Gu's estimation, SF was quick on the heels of detective fiction in its capture of popular readership, but this phenomenon is still poorly understood by scholars.[3]

The absence of early Chinese SF in literary studies can be explained in three ways. First, after the Japanese invasion in 1937, many wartime writers pivoted to the Manichaean world of battlefield reportage. Like Japanese contemporaries such as Unno Jūza (海野十三), however, Gu and his Chinese SF comrades thought that scientific literacy was more important than facile patriotism.[4] Second, China's literary elite, including those who established the canon after the 1949 revolution, did not consider SF to be 'pure literature', relegating it to a forgotten past. Echoing the Japanese

critic Hirabayashi Hatsunosuke's (平林初之輔) valorisation of popular fiction, Gu asked 'how could SF be beneath *belles lettres*' (*jun wenyi zuopin*) when Orson Welles' 'War of the Worlds' broadcast triggered a mass panic in 1938? Third, the early post-war ROC government's ban of mainland writers and Japanese collaborators in Taiwan, in addition to the dominance of socialist realism in the People's Republic of China (PRC) from 1949, all help to explain why early twentieth century Chinese SF truly was a 'paradigm lost'.

This article will argue that the writers of science fiction endeavoured to create a 'China dream', which was a vision tied to the historical experience of the KMT era (1927-1949). I will explain the formation of the dream through the evolution of a new literary genre—science fiction—by analysing the role of the foreign in science reporting, describing the debate over literature and science in the 1930s, and finally showing the importance of KMT China's science magazine culture. In order to demonstrate how these factors formed the first 'China Dream', I will provide a reading of three original Chinese SF stories by Gao Xingjian (高行健), Chen Yuesheng (陳嶽生), and Gu Junzheng (顧均正).

To See with One's Ears (*Yi er wei mu*): The Function of the Foreign in the Chinese Future

By the twentieth century, the vast majority of Chinese people had not travelled far, and certainly not to Europe or North America. At the same time, foreign language translations loomed large in the depiction of the Chinese future, whether they were fictional or 'factual', alongside the new forms of writing they introduced.[5] Chinese translators drew from many foreign writers—first and foremost H.G. Wells, but also Russian SF writers like Alexander Bogdanov and the Italian Futurist Filippo Tommaso Marinetti.[6] Announcements of scientific achievements loomed large in Chinese newspapers and magazines, from Archibald Low's extraordinary use of radio to remote control the *HMS Agamemnon*, on the one hand, to the multiple reports of new androids ('mechanical people',

Ch. *jiqiren / jixieren*) in London, Berlin, Tokyo, San Francisco, and even the foreign concessions in Shanghai, on the other.[7] Foreign 'discoveries' could also be dubious: for example, the *Henan Security Monthly* reported that the director (incorrectly identified as 'Morris') of the Observatoire de Paris claimed the emergence of sun spots presaged an age of global warfare, because solar radiation 'released electrical and magnetic energy that unsettles the human spirit and, at the very least, makes nations engage in disputes, or triggers warfare.'[8] The foreign therefore functioned as a literary space for narrative experiments built around scientific and technological reporting, even if some of it was fraudulent.

Foreign knowledge became more geographically specific, thereby dispelling the myth of 'the West': Germany was known for its advances in biosciences (as was, to a lesser degree, Japan); Britain and the United States were the location of advances in engineering, especially flight; the Soviet Union, although mentioned fewer times than the others, was well-known for urban planning and social management. Scientific dissemination was rapid across China: the magazine *Science* (Kexue), which was published by the Chinese Science Society, had a presence in the USA and Germany, and then funnelled specific information to its branches in ten Chinese cities north (Qingdao), south (Guangzhou), east (Hangzhou), and west (Chongqing).[9] In addition to this, libraries in major cities and universities stocked the popular science magazines published in Europe and North America, which Chinese authors specifically mention in their work as inspirations. The result was that innovations like rocketry were reported quickly throughout China but, because the veracity of discovery was always secondary to its shock value, more dubious 'discoveries' from death rays to autonomous robots were communicated in the same manner. In any case, narratives about the future had to correspond to whatever was 'known' in the non-literary context.

Foreign countries thus provided Chinese readers with new scientific knowledge, which writers used to dismiss the fantastic tales of the turn of the century while creating a new space for narrative speculation. The understanding of outer space, for example, changed radically in the early twentieth

century, so that some basic information about the conditions on the moon and the solar system took root among China's literate population. The fanciful journeys to outer space in the late Qing and early Republican period were quickly dispelled in the 1920s, as writers explained that the moon's surface 'has neither water, rain … nor wind' and that, regardless of whether there was some form of microbial life there, 'the moon is completely different than Earth'.[10] Mars may have initially excited interest as a space for fantasy, but science reporters pointed out that 'the atmosphere is extremely thin, which makes it very easy to see the main areas of the surface with a telescope'—no Martians were to be found.[11] Science also 'predicted' changes that Chinese people would have to face. Drawing from the scientific discoveries of foreigners including Urbain Le Verrier, Charles Darwin, Christian Doppler, Hermann von Helmholtz, Robert Maxwell, and Antoine Henri Becquerel, in 1932 Li Ruifu captured the transformative potential of asteroid impacts, climate change, volcanic eruptions, and long-term biological changes due to natural selection. Human factors were also important: 'there will be the misery of conflict between social classes, as well as invasion by foreign powers, so we should be paying attention to how we can avoid annihilation.'[12] Reports on discoveries in biology, mechanical engineering, physics, and astronomy therefore provided a more structured universe for China's fiction writers.

Finally, the foreign represented itself in the new genres that helped to shape twentieth century Chinese vernacular literature. Science fiction in China, similar to its Japanese counterpart, was initially shaped by adventure fiction. American and European authors held pride of place, but translations of Soviet works such as A.N. Tolstoy's *Aelita* (1923) were important for outer space journeys as political metaphor, later articulated by Lao She in *City of Cats* (Maochengji, 1933).[13] Japanese action-adventure stories were widespread, including a 1907 translation of Oshikawa Shunrō's (押川春浪) *Undersea Battleship* (Kaitei gunkan 海底軍艦, 1900). Meiji military fiction (Jp. *gunji shōsetsu*, Ch. *junshi xiaoshuo*) overlapped with other new generic categories that required little translation, such as fantastic adventure fiction (e.g., Jp. *bōken kidan*, Ch. *maoxian qitan*) commonly

associated with European authors like Jules Verne.[14] Writing on Verne in 1930, one author showed that Chinese critics had consciously reflected on decades of productive interactions between adventure fiction, 'prediction', and speculative science: 'Scientific adventure fiction is a forerunner of many things […] submarines, airships, seaplanes, automobiles, searchlights, smoke bombs, chemical weapons, 'talkie' films, tele-vision (*dianbo yingxiang*), etc.'[15] The rise of popular fiction at the *fin-de-siècle* combined with the discursive authority of foreign science reporting to provide a generative space for a new body of fiction to be evolve.

Frozen Body, Ancient Mind: Gao Xingjian's Incomprehensible Future

The combination of science and popular literature in service of a vision of the Chinese future was innovated by the KMT era writer Gao Xingjian. Trained as a chemist, Gao had a proclivity for writing stories that frequently featured quite technical aspects of modern chemistry, including a mass wedding ceremony where one had to demonstrate adequate scientific knowledge in order to get hitched.[16] Writing under his nom-de-plum Xiao Zhu in *Science World* (1935), Gao's 'The Cold Dream of a Frozen Corpse' described how a young man named Wu Cun (吳邨) froze himself in the mountains, only to be revived in a Chinese society two hundred years in the future (2135). Gao's story depicts how a body can be revived, but the mind may fail to comprehend the world in which it awakens.

Gao began with a dismal vision of Republican China following the 1935 Yangtze River flood, which had triggered an economic crisis across the heartland of the KMT regime. The protagonist Wu Cun, like many others from 1931 to 1934, lost his future in the contraction of the Chinese economy, and became dissolute, drinking his worries away in the Fuzimiao area of the KMT capital, Nanjing. Staggering around the streets, he picked up the 53rd edition of the industrial magazine *Nanjing Power Monthly*, wherein Wu discovered a colleague had died. Should he end his own life, and

escape this miserable era? After purchasing sodium citrate, an injection needle, and sleeping pills, he climbed the 3000m Mt. Emei in far-away Sichuan Province, where he buried himself in snow and ice. Two hundred years later, he was resurrected by a nurse who identified herself as 'Li Susu, 01038961256', who was in fact the descendent of a woman he had loved back in the twentieth century. Seeing he was confused and upset, she handed him a small, wireless vacuum tube and said, 'Do you want to listen to some music?' Bombarded by foregin language broadcasts, Wu wanted to listen to the twentieth century performances he knew well, such as 'Farewell My Concubine' (*Bawang bieji*), but he could not find them—they were now two hundred years old.

Gao used the story to introduce predictions of the future in a narrative framework that he hoped would capture a popular audience in the 1930s. Li Susu told Wu Cun that he could reach her at any time by dialling her ID number. When he tried to ring her, he could not figure out the autodialer, and punched in the numbers 'the old fashioned way'. A screen lit up on the wall, where a white-haired old man appeared and told him, 'wrong number!' In any case, Li was already back at his room, apologising for not giving him the right prefix for calling her, and informing him of his own government-assigned number. Furthermore, Wu was disturbed by the fact that, in the future hospital room, the light and temperature never changed. Li explained that all of the major cities were now built under the ground, which was the only safe place from air raids. In this subterranean world, heat, humidity, light, and atmospheric gas levels were all controlled: 'the four seasons of the year now never change, and you never have to tolerate a blazing sun, or put up with torrential rains. You don't have to concern yourself with the thunder and lightning'. In order to leave the subterranean world, Li told him, he would have to take one of the exit tunnels, which were guarded by robots. Gao introduced a number of future technologies, such as national ID and cell phone numbers, video calls, and air conditioning, as well as some more speculative transformations. The Malthusian food crises that characterised global discourse at that time were resolved, according to Li Susu, not by the rise of artificial food items that Wu would have been familiar with in 1930s, but by the 'natural' (*tianran*) selective breeding of giant plants and animals. Transport consisted of four

lanes of light rail traffic, in a long chain of seemingly endless trains. If a pedestrian wandered too close to the tracks, non-lethal ray guns stunned them. Enemy nations ceaselessly patrolled the borders with hundreds of aircraft, which swarmed like birds around their adversaries' observatories. Air power, food processing, genetics, drones, wireless communication, and underground cities were themes 'lifted from the headlines' of 1930s science magazines.

Gao also wanted to impress upon his audience the relentless nature of change. Soon after he was revived, Wu was asked by scientists to speak to their colleagues in cryogenics over a video phone network—an online conference. His first statement, about reanimating frozen corpses, invoked Edison: 'Those who research science must focus on experimentation, as these questions cannot be solved by the pen'. Wu slowly realised just how much the world changed:

> Immediately, a young man stood up and asked, 'Who is Edison?'
>
> 'He invented the light bulb.'
>
> 'What is a light bulb?'
>
> Wu looked at the four corners of the room appearing on the screen, and at the artificial illumination, but couldn't identify the source. He saw a light and thought it might be some sort of gas or sodium lamp, but didn't know, so he changed his response: 'Edison invented the gramophone.'
>
> 'Gramophone? Is that like a Moviton or a Vimophon?'
>
> 'He invented …' Wu suddenly found himself at a loss for words, with a smiling Li Susu watching him sweat profusely.
>
> Another question then came from an older man with a round belly, puffing out his chest: 'Two hundred years ago, someone named Einstein once discovered the theory of relativity, is that the same guy?'

Wu learned the history of the world from his 'death' to the 'present', including three more world wars, in which robots and electro-guns have made chemical weapons and rifles obsolete. In the claustrophobic environment of the underground city, the government intensified its militaristic education and nationalism, which he found tense and unsettling. Eventually, Wu Cun found true love in Li Susu, and they were agreed to be married. He had to overcome his extreme age in legal terms, as well as the logistics of arranging a marriage in the distant future that was run according to the thirteen month calendar. As he toured the idyllic dairy farms with his fiancée, he was knocked flat by a giant cow's tail, only to wake up back in a 1935 Nanjing bar with a half-empty bottle of wine next to his dizzy head.

At the end of his story, Gao revealed some of the raw materials for his vision of the future, which included Thomas J. Midgley's predictions and H.G. Wells' *Food of the Gods* (1904). Apart from the typical trope of 'wonder' and 'shock' at the fantastic setting, Gao's fiction attempted to educate audiences on scientific principles, while warning them that the future would be unrecognisable even to educated people. Gao wrote many other short stories, demonstrating how contemporary scientific knowledge could inform fiction, how fiction could serve to disseminate new scientific knowledge, and how both mutually generated a vision of the future that was believable to a modern audience.

Reality and Emotion: Magazine Culture and the Discursive Space for Chinese Visions

When the Academia Sinica opened in Nanjing in 1928, alongside a modern observatory built by the KMT government in the same year, Chinese efforts to produce domestic scientific knowledge inspired a raft of new, for-profit magazines. Science magazines were a space for innovating the use of empirical epistemology through the construction of artificial worlds, which included the embrace of vernacular, new printing technology, and speculative writing. 'The future world of science' was a theme that ran through all of the magazines of the era.[17] The popularisation of scientific knowledge,

including dubious claims such as the imminent development of 'artificial life', was promoted through magazines such as *Science*, *Science Illustrated* (Kexue huabao), *Scientific Knowledge* (Kexue zhishi), Gu Junzheng's *Scientific Interest*, and *Scientific China* (Kexue de Zhongguo). Comparing the content and typography with contemporaneous Japanese publications, including similar or even identical titles, such as *Scientific Illustrated* (Kagaku gahō), *Scientific Knowledge* (Kagaku chishiki), and *Discovery* (Hatsumei), it is clear that in East Asia there was a shared culture of popular scientific publishing at this time.[18] It also resonated with magazines in Europe, the Soviet Union, and North America, including those aimed at children and youth. Some Chinese publications survived for decades, whereas others went out of business after a few years (sometimes due to the Japanese invasion). The future was the space where science and literature joined in body and mind, necessitating a new literary genre, even if one basic motivation was to shift copy.

The editors generally organised magazine content into articles that explained current or new findings (e.g., on the physics of bird flight or the evolutionary origins of human beings), reporting of foreign discoveries (e.g., the mechanics of cell biology or the control of unmanned aircraft by radio), biographies of famous scientists and inventors (e.g., Copernicus or the Wright Brothers), and in some cases features that included speculative or science fiction (e.g., manufacturing humans or a story about air raids destroying cities). While fantasy novels about the future were a common feature among Chinese, Japanese, Russian, and Ottoman empires during the *fin-de-siècle*,[19] the emergence of the science magazine was a significant development in the transition from early modern flights of fancy, often socio-political satire thinly disguised as magical tales, into more straightforward depictions of how science and technology might change the world.

Left-wing intellectuals contested the boundaries of empirical knowledge, however, in its blindness to social and cultural change. Writers wanted such fiction to not only present society with scientific findings, but also the critical methods that characterised the infancy of the social sciences. Writing in *Shenbao* in 1935, Meng Jia referenced an article by a Japanese author surnamed Kagawa, who

discussed how writers should 'use the form of literature with science as a basic ingredient' to create 'science literature', including the manufacture of 'scientific speculative literature' (Ch. *kexue de kongxiang xiaoshuo*; Jp. *kagaku no kūsō shōsetsu*). Here science not only meant the natural sciences, but Freudian psychoanalysis and, more important, the sociology analysing larger structures that determined individual thought. Critiquing Kagawa, Meng reiterated Maxim Gorky's call to make literature serve the suffusion of scientific knowledge, which aims to create the future through social criticism: 'thus, the inter-penetration of natural science and literature, is not just a question of the dispensation of topics and themes, but also methodology'.

> Simply relying on social theory to analyse social organisation, individual characters, and other such abstract concepts, from an aesthetic perspective, is inadequate for creating the personalities needed for classic characters. In China, as in Japan […] lively characterisation includes the joy, anger, despair, happiness, depression, love, and hate […] We absolutely must recognise how biology and psychology have influenced Naturalist writers like Émile Zola, and we similarly cannot deny how medicine has impacted the impressionism of Realist authors like Anton Chekov.

In other words, writing characters and exposing social truths was the methodology of literature, but it was inextricably linked to the ways of knowing individuals, including the new science of psychology.[20] How could we depict a future of flying to Mars, and assume we would be unchanged?

Between the scientific magazines and the broadsheets of the KMT era, the parameters of discussing the future, however proximal or distant, were being established. The scientific magazines were the most important space for delimiting what was 'fact' and what was fantasy, because of the imprimatur they received from their contributors, including Chinese professional scientific societies, but fiction opened the door to other considerations. The future as presented in Chinese science magazines was one that was capable of threatening the very foundations of Chinese society, including the essential differences between men and women.

The Crying Game: Gu Junzheng and Queering China's Early SF

Writing under his pen name Zhen Zhi in 1940, Gu Junzheng challenged both sex and genre boundaries in a detective story that he described as 'science fiction'. 'Changing One's Nature' (*Xingbian*) was serialised in *Science Interest*, which was partly launched by Gu himself—a magazine that he had poured much of his life into during the 1937 Japanese invasion. The story began with a narrator invoking familiar tropes of the detective genre, including its presentation not as a fantastic tale, but a 'true record'. The protagonist began by reminding his audience of a (fictional) news report, eight or nine years prior, concerning a mysterious death: 'Murder by a Mad Man'. It involved a famous biologist, Dr. Ni Weili, and his only child, a daughter named Ni Jingxian, who had suddenly disappeared without a trace. The corpse of an old woman was found in Dr. Ni's laboratory, and a comatose teenage boy, neither of whom could be identified. Jingxian's fiancée, Shen Dagang, rushed to the police station to surrender himself, albeit in a state of psychological distress, claiming to have murdered the members of the Ni household. Gu reflected on the state of publishing in interwar China, remarking that the fictional incident in this story attracted the public eye and became a centre of gossip because Dr. Ni was a leading biochemist, but moreover 'due to Jingxian and Dagang's engagement, it easily captured ordinary people's attention in the prurient press' (*taose xinwen*).[21] In a self-reflexive way, Gu used this salacious introduction to entice a broad readership and hoodwink them into thinking that they were going to enjoy a titillating detective story, but 'Changing One's Nature' was a bait-and-switch in more ways than one.

Shen Dagang had, for some time, wanted to marry the young woman Ni Jingxian, but Jingxian's father, Dr. Ni, opposed the marriage because of Dagang's unreliable finances; he had to prove to the father that he could support a family. Consequently, Dagang applied himself to making his fortune while refraining from any contact with the Ni family. When he returned to their household in triumph, and before he could announce his intentions, Dr. Ni announced that he had 'made a

discovery that will change the fate of the human race'.[22] At this point, Gu's story deviated from detective fiction and employed a scientific discursive framework necessary for imagining future life. Dr. Ni explained to Dagang how chromosomes worked, that male and female bodies mirror each other in terms of their sexual organs and, following Darwin, that men even theoretically possessed the ability to breastfeed. Throughout the story, Gu cited science reporting in English, Japanese, and Russian. Sensing Dagang's boredom, Dr. Ni produced a milky-white serum in a small vial, which he claimed could change a woman into a man within three or four days. Dagang declared such a thing to be absurd, and then finally built up his courage to ask for Jingxian's hand in marriage.[23] 'I completely empathise with your situation', Dr. Ni said, grinning at Dagang, 'but it is now quite impossible […] she cannot love you.' Wracked by both spite and incredulity, Dagang rushed into the lab, but there was only a teenaged male assistant, and Dagang demanded to know where Jingxian was. Looking into the young man's eyes, however, Dagang realised it was Jingixan transformed. 'Jingxian', he cried out, 'how could you want this?' The boy who was Jingxian tried to console Dagang, extending his hand to Dagang's face and then withdrawing it quickly. Although it had been painless, Gu revealed that Jingxian did not consent to the transformation.

Gu used fiction to explore his personal views about transformation and corporeality during a period in which Chinese science magazines had discussed both transgenderism and sexual reassignment surgery.[24] 'There was nothing anyone could do to bring her (她) back', Gu wrote, 'because she had already disappeared, dissipated into Dr. Ni's small vial. He (他) had become a boy; the thoughts inside his mind were in turmoil'. Physically, Jingxian—or rather, 'the youth'—was in every respect a biological male, with a masculine chest, facial features, and even the hint of stubble on his chin. The young man reported that the transformation from female to male, however, also produced changes in his 'psychological state' (*xingli zhuangtai*). Gu described the young man, through Dagang's eyes, as 'strange', an 'unnatural monster', and 'just a shell'.[25] Glued to his beloved microscope in another room, the mad scientist Dr. Ni Weili took no notice of Dagang entering in a state of extreme distress. Although initially shocked by Dagang's rage, Dr. Ni then laughed and revealed that he had always

wanted a son to carry out his work, but 'nature pulled a trick on me' and gave him a 'useless daughter'. 'Correcting' (*gaizao*) her into a boy would allow the son to 'carry on the work and make a magnificent contribution to Chinese science'. When Dagang grabbed Dr. Ni by the shirt and threatened to kill him if Jingxian was not brought back, the scientist had to admit that he had no chance defending himself against 'a madman more mad than himself'. As soon as the new sex change serum was ready, Dr. Ni protested that he needed to test it first. 'You want a test, you crazy old man, I'll give it to you', Dagang cried out, and injected the serum into the scientist himself, 'Now you can see its effectiveness up close!' The doctor shouted, 'you idiot, do you know what you've done?' and staggered into his bedroom. 'When you wake up', Dagang told him triumphantly, 'you will no longer be Dr. Ni Weili.'[26]

Days after Dagang injected the mad scientist with his own formula, Dagang had himself changed: he felt 'decades older', smoked cigarettes and drank coffee constantly, and his beard had grown out into a wild mess. The young man Jingxian, on the second day, was so alarmed by Dagang's transformation that he recoiled in fear and shock. Dagang then imprisoned the fearful youth in a small room. On the final day of Dr. Ni's transformation, Dagang let Jingxian into his father's bedroom, after which the young man backed out sobbing. 'You idiot', Jingxian proclaimed, 'this isn't my father.' Dagang looked at the young man and 'he couldn't help but feel sympathy for him. Even though [Jingxian's] hair had been cut short, looking at the rest of his body, Dagang felt kindness and affection for him (*ke'ai*).' The person who appeared was no longer Dr. Ni, just as Dagang had predicted, but an old woman—another 'monster'. Dagang beckoned Dr. Ni to prepare a vial of the serum for Jingxian, but the old lady only shook her head. 'She was no longer a doctor who loved science', explained Gu, 'She had already forgotten about science entirely, as if she had never studied it at all.' Dagang had committed a grievous error: Dr. Ni's biological sex also changed his 'psychological state'. According to Gu, Ni's desire for science and mastery over nature was tied to his biological maleness, and now that had gone. With a strange cry, Dagang grabbed Dr. Ni's beloved microscope and struck the old lady on the head. She died instantly, and Dagang, crazed, turned to

the 'young Dr. Ni' and knocked him to the floor. Wandering the streets in a daze, Dagang eventually surrendered to the police station.

Gu's story was an experimental body, stitched together with pieces from scientific research, gender politics, and futurism, and animated by a new literary sensibility. The film 'Frankenstein' had horrified Chinese audiences a few years prior,[27] but not everyone considered such physical transformations to be a nightmare. In 1937 Xiao Feng triumphantly declared that the 'dreams of the past can become reality through science', citing the example of the successful surgical transformation of the British athlete Mark Weston from an intersex person, raised as a woman, into a man (according to Weston's wishes).[28] Indeed, in its final paragraph, Gu's story returned the perspective to the narrator who started the tale, and away from the characters who had used violence and deceit as acts of control:

> Who am I, you ask? My name is Ni *Xinsheng* (Ch. Newborn). If I can say one more thing, it is that I am a biologist, and I have already married. Furthermore, I have two children … I am of course the Ni Jingxian of this story.[29]

At long last, Xinsheng could speak freely, and his story seemed to have a happy ending. Partway through his story, Gu subtly changed references to this narrator-character from Jingxian to 'the little professor' (*xiaobuoshi*), showing the shift in mind that followed the new body. In Gu's fiction, the woman's body was a barrier to be overcome in order to possess a mind capable of scientific inquiry, even if such a transition was, to those who wished to control gender boundaries, monstrous.

Frankenstein Literature: The Debate over Science (and) Fiction in KMT China

Arguments around scientific knowledge and literary narrativity existed throughout the first four decades of the twentieth century in China. In the early 1920s, authors and critics had already noted the growth of science fictional texts, either as 'science novels' or 'novels of the extraordinary' (*jingqi*

xiaoshuo), emerging from the great experimental fiction journals of the late Qing (e.g. *Yueyue* and *Xiaoshuo shilin*), or in new magazines and newspapers after 1911. The merger of science and fiction, however, became an acute concern among writers and critics around the time of KMT rule, particularly as scientists sought to use narrative to transmit their knowledge to the public and fiction writers wanted to use the truth claims of science to empower their narratives.

In the midst of the collision between scientific discourse, *belles lettres*, and mass culture, starting in September 1934, the broadsheet *Shenbao* featured a debate on the 'inter-saturation' of science and literature, which appeared to have been triggered by the launch of the journal *Taibai* in the same year. Editors and writers in *Taibai* had attempted to categorise a new genre: the 'science short' (*kexue xiaopin*), and other publications took notice. 'Science shorts' included both the fictional work of Gu Junzheng, as well as the more prosaic Xun Yu's rational investigations of 'demon sightings' (*baihua jiangui*).[30] One pseudonymous author remarked that the 'science short' had emerged out of previous literary sketching (*suxie*), which they considered to be a necessary genre of the modern era. '*Taibai* is still in its infancy', the author opined, but the seriousness of the subjects in it 'expose the lie among the literati that sketches only discuss trivial and fantastic matters.'[31] 'While there are calls to save the nation by motors and engineering', wrote Zhou Yuying, 'we have new titles such as "science shorts" and "science literature" (*kexue wenxue*) …

> Originally science and literature had, between them, marked a very clear boundary: literature was about feelings, and concerned itself with representative descriptions of daily life; science was about reason, and concerned itself with the pursuit of abstract truths. But now, in this 'Age of Science', science itself has roared, and broken down the ramparts separating feeling and reason, and invaded the territory of literature.[32]

An ardent anti-fascist and member of the Creation Society, Zhou was hardly an unrepentant reactionary, even if he was eventually expelled by the League of the Left Wing Writers. Nevertheless, Zhou echoed the concerns of many who held the brush rather than the pipette: what is the purpose

of bringing science into literature? 'The emergence of science shorts from literary sketches is not a form of progress', one critic complained, taking a shot at science fiction writer Gu Junzheng, 'science shorts focus too much on generic form and not on science […] and debates on the future should be left to the future'.[33] *Shenbao* had thus started a conversation about *Tanbai* and the 'science short', which was really a debate about the impact of scientific discourse on modern literature, and who should depict the future.

Left-wing critics continued to note SF's inability to engage in social criticism while defining China's future. Xu Maoyong, a member of the League of the Left Wing Writers, entered the debate on *Taibai* in 1935, and pointed to the Soviet critic Veniamin Kaverin's celebration of popular science writing. He explained that, in the last century, the Naturalism of Lecounte de Lisle and Émile Zola had already contained the basic premises of the natural sciences—plus ça change. 'In China', he nevertheless complained, 'science and the masses can't get on. This isn't because of the inadequacy of material infrastructure, but rather because science is sanctimonious, cold, and harsh', whereas literature can amuse the public. Equally important for Xu, the new literature should introduce the ideological outlook of the social sciences to give natural science the political discipline that it required to be meaningful for humanity.[34] Another critic, drawing on the KMT government's wide-ranging modern hygiene campaigns, put the problem of knowledge and literary popularisation in even more trenchant terms, by comparing science to an infamous Chinese street food: 'What we now declare to be science shorts, is at the end of the day just a moniker or, a new kind of a label, and nothing more than what people might call "hygienic stinky tofu"'.[35] Other left-wing writers such as Liu Shi, however, pointed to concerns more pedestrian: so-called 'superficial' scientific literature not only made science more comprehensible (and interesting), but it also sold well, and this was important—even if academics considered it a deviation from 'proper' intellectual work. Liu described the science writers as those who 'lived a lonely life adrift on the sea', writing such little pieces as 'science shorts' to pay the bills.[36]

Perhaps the relationship between science and literature in the modern era was one of those perplexing questions, as Gu Junzheng put it, that 'becomes more muddled the more you think on it', which became even more confused the more science became popular entertainment.[37] Despite the posturing among China's chattering classes, a new form of experimental literature rose from the gurney by the end of the 1920s, and it was part of a global trend that included Gernsback's *Fantastic Stories*, the Soviet science fiction in *Nauchnaia nauka*, and the Japanese stories appearing regularly in science magazines like *Kagaku gahō*. The zeitgeist of future fiction writing amused the public while educating it, providing a form of harmless entertainment—until its predictions seemed to come true.

Mars Attacks! Chen Yuesheng's Terrifying Visionary Science

A totally unknown SF writer today, Chen Yuesheng nevertheless innovated new ways of incorporating scientific knowledge with existing literary genres such as heroic action fiction. His epic adventure story, 'The Giant Cannon of Mars' (*Huoxingren de dapao*), was serialised in *Science Illustrated* from 1945 to 1946. While the Chinese magazine did not publish SF as early or extensively as its foreign counterparts, it belatedly attempted to amuse its readership of scientists and students at the very end of WWII, with Chen's wartime labour of love.

The story follows Captain Khalid and his crew of intrepid explorers on the spaceship *Firelight* as they defend Earth from a moon-based Martian attack. Chen built a diverse crew of memorable characters using both foreign and Sinitic-sounding names (though he never identified their nationalities): in addition to Khalid, the crew included Pike (a former assistant astronomer at the 'Kingsley Observatory'), Benedict (a famous and handsome athlete who had financed the ship), Perkins (a formerly imprisoned burglar who was a genius mechanic), Clayton (a reserved first mate), Moss (the cook who was willing to risk his life to escape his wife), Landow (a medical doctor), and Wen Nina, who had surreptitiously bought her place from a man named Vincent. As soon as Khalid discovered

that Nina had snuck on, he castigated her, but she declared 'I told you we women can do whatever you men can do.' Chen made Anglophone characters recognisable to the reader by fusing Chinese and foreign imagery, as in the case of Benedict, who 'looked like an English knight of old, or a hero (*xiake*) of an ancient Chinese fantastic tale' (*chuanqi*). The crew—seven men and one woman—all had to overcome some personal differences and issues before preparing for their journey to the moon.[38]

As they hurtled towards the moon, Khalid told them the real mission: they were to investigate the Kingsley Observatory's discovery of Martian colonies, which Khalid claimed were attempting to bomb the Earth and destroy all mankind. After amassing evidence, Wen Nina's father, Dr. Wen Yuehan (or Johannes), was able to convince the President of the United States to convene a panel of inquiry. Unfortunately, the panel ridiculed his assertions. Chen used years of scientific reporting in *Science Illustrated,* including his own work on the science of space travel, to create verisimilitude in the story: near misses and shockwaves from passing meteors, the physics of artillery fire, and the experience of a spacewalk. Chen insisted that this was no late Qing fantasy novel, but a new form of realistic representation in an increasingly dangerous world.[39]

> [Captain Khalid] stood [outside the ship] for a moment, appreciating the limitless expanse of space with cool detachment, gazing out into that forest of cold light. He thought of the magical world as described by the poets, now in the hands of the scientists. It is a world filled with the nests of the enemies of humanity.

After Nina barely managed to save Khalid's life on a spacewalk, the *Firelight* pulled off a rough landing on the moon.[40] Chen explained the dangers of direct solar radiation, the variations in temperature that occur on the lunar surface, as well the rugged geography's peaks and troughs, including introducing some notable features such as the Archimedes crater.[41] The expeditionary force left the ship, splitting into two groups. As soon as they neared their destination, they spotted the aliens, who were wearing a strange hairy armour, including tall, stove-pipe helmets. The

Martians' weapons had no firing mechanism, but after waving it in the Earthlings' direction, Khalid saw it melt stone before his eyes.[42] The situation deteriorated very quickly, as the Martians used their heat beam (*rexian*) to melt cover all around the team—eventually killing Perkins, whose miserable cry could be heard over the wireless.

Meanwhile, on Earth, Dr. Wen lamented the 'stupid oafs' in Washington DC who had threatened him with dismissal for warning about the Martian attack. Chen indirectly referenced the speculative debate over life on Mars that was ongoing in the Chinese press, commenting that Dr. Wen 'was just an astronomer and only knew the evidence'. As Dr. Wen milled about nervously in his office, he found a letter from his daughter, Nina. Pouring over it, he was angry and terrified to discover that she had run off to the Moon with Khalid, when an assistant told him something was approaching Earth. It was not the *Firelight* coming home,[43] but rather a massive artillery shell fired by the Martians. 'Quickly', Dr. Wen barked at his assistants, 'cable observatories in Nanjing, Beiping, Tokyo, and Madras!' Dr. Wen then called the news media, spreading the information as quickly as possible. 'This is the first of many volleys, designed to wipe out the human race!' The American news reporters tried to bury the story for security reasons, but when the first projectile landed in the Pacific Ocean, it was 'greater than the explosion of an atomic bomb'.

In fact, one of Chen's previous instalments of this story had been delayed by the news of the atomic bombing of Japan, the facts of which were just coming to light. It was a horrible validation of Chinese SF writers' visions of the future, run through with death rays and robots: we warned you, and you ridiculed us. When writing of the Martian attack, Chen must have been thinking of the terrible power of nuclear weapons:

> A native on a small island somewhere, fell to his knees in fear, and was only able to beg God for salvation, as the blazing air washed over him in waves, wiping everything away like a bolt of lightning from the heavens. In this age, when Earthlings can create a spacecraft, science has of course reached a great height, but there are many corners of the planet where there

> are primitive people, who don't even know what science is. It wasn't so many generations ago that, in the Far East, a certain people with an ancient culture saw the coming of the moon and the sun, only to bang gongs and set off fireworks.

As shells rained down across the world, the reporters scrambled to outdo each other in exaggerating the situation. The public decided to kill the messenger, Dr. Wen, for committing the 'great crime of distracting us from gambling and dancing'. When the scientist came out to greet the crowds, someone shot him in the head, just barely missing his brain. Meanwhile, another shell annihilated the Chilean city of Valparaiso. The US President called fifteen representatives from around the world, including the wounded Dr. Wen. Dr. Wen immediately ordered the fifteen representatives to build a fleet of thirty-six spacecraft. The Chinese Air Force Minister Ou Yang was named by the representatives to be Commander-in-Chief, supported by a British Deputy Commander.[44]

Meanwhile, on Mars, Khalid, Clayton, Nina, and Landow were being forced to learn the Martian language in captivity, echoing the Japanese assimilation policies that affected millions of colonial subjects in the 1940s. The heroes spotted the artillery gun that was firing on Earth, shaking the very bedrock with its power. Their language teacher was kindly, explaining that the Martians were driven by desperation to colonise Earth due to the decline of their home planet. The Earthlings should learn Martian to help the invaders occupy their home planet with a minimum of resentment.[45] Khalid, Nina, and Clayton hatched a plan to escape from their captivity, which included Nina feigning her own death. Incapacitating a guard, they exploited the low gravity environment to leap from rooftop to rooftop on the Martians' lunar colony, 'as if heroes in a martial arts novel'. Khalid opened fire using a stolen Martian heat gun on any guards, melting them mercilessly, and Chen compared him to a fighting monarch from the *Romance of the Three Kingdoms*. While the Earth fleet closed in, and Khalid faced three Martian guards of the devastating cannon, Chen finished his story in 1946 without a conclusion.[46] Within two years, the KMT government was evacuating its people to Taiwan as they fled from the People's Liberation Army, another kingdom defeated on the field of battle.

Conclusion:

In 1935, an anonymous author asked if, in a thousand years from now, the only remaining book from their era was Lu Xun's *Records of the Aureole* (Huagaiji, 1926) and a page featuring the Peking Opera performer Mei Lanfang, what sort of impression it would make on future readers.

> Literary historians would unequivocally state: 'At that time the literati were full of envy, and the theatre only featured old-fashioned costumes. If we were alive back then, how could we not laugh at them?' Scholars of literary history could only find us a source of amusement.[47]

Nearly a century later, we have in many ways fallen into this trap, in our continual focus on a literary canon curated since the post-war, on the one hand, and by presentist expectations for early twentieth century literature and discourse, on the other. The evolution of pre-1949 Chinese science fiction demonstrates that the fusion of foreign reporting, scientific discourse, and literary narration, including pre-existing genres such as adventure and detective fiction, produced an entirely new genre for the futuristic 'China Dream'.

Chinese critics understood the generative relationship that had emerged between twentieth century empirical epistemology and vernacular literature, but could not agree where the boundary should be. In 1928, writing under the nom-de-plume Si Lian, one author pushed against a growing outrage from both scientists and fiction authors regarding the emergence of the genre of 'science literature' (*kexue wenxue*). Comparing scientists to ship captains who 'objectively observe while suppressing individual emotions' and writers to 'passengers who use beautiful language to describe their feelings', Si saw the dyad of science and literature as 'counterweights' that brought 'comfort' to modern humans; the fusion of these two forms of knowledge, then, was a necessary experiment.[48] Chinese authors believed that what was fundamentally at question was how humans know what was true (*zhenshi* or *xianshi*) and what was fantasy (*kongxiang* or *huanxiang*)—and how literature might

express the true nature of the world through empirical knowledge.[49] The embrace of both science (as representation of a lived reality of the physical world, or *tiyan* 體驗) and literature (as expression of the mind) simultaneously necessitated the rejection of the supernatural, as one author argued in 1934, stating that, when one abandons either science or literature, 'I do not believe that humans can find any other basis for their existence'.[50] Simultaneous to the embrace of Materialism came a newfound valorisation of popularisation and vernacularisation, which meant an abandonment of late Qing fantasies or 'dreams' (*meng*) and the development of new narrativised forms of scientific futurism.

My reference to Xi Jinping's slogan, the 'China Dream' (*Zhongguomeng*) is deliberate. Chinese authors continued to articulate visions of the future, particularly towards the end of WWII, and the importance of combining science and literature, like body and mind, to that end. Authors and critics alike celebrated 'the creation of a new genre, of the scientific literary arts (*kexue wenyi*), possessing a high level of intellectualism as determined by social conditions'.[51] KMT era writers published visionary texts in the final years of the war, such as Xiong Ji's *One Thousand Years Later* (*Qiannianhou*). Other writers, however, had long argued that the time had come to 'wake up the people from their dreams, and expose reality', necessitating a systemic revolution in China.[52] The KMT era literary vision was eventually smashed and erased by the hegemony of later writers' focus on socialist realism and proletarian fiction. The original China dream truly was a 'paradigm lost', replaced by the visionary quest of achieving communism; nevertheless, its emergence in the Nationalist era shows us how new genres are made through the transformative experiments, carried out by writers contending with their historical experience.

Notes:

I have glossed author names with [n] whenever I believe a pen name is being used. If no name is given, I leave the reference blank.

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[1] Zhen Zhi [Gu Junzheng], 'Wo weishenme xie kexue xiaoshuo', *Kexue quwei* 1:6 (Jun 1939): 251-254.

[2] David Der-wei Wang, *Fin-de-siecle Splendor: Repressed Modernities of Late Qing Fiction, 1848-1911*. Stanford, CA: Stanford University Press, 1997, Chapter 5; Nathaniel Isaacson, *Celestial Empire: The Emergence of Chinese Science Fiction*. Middletown, CT: Wesleyan University Press, 2017; Lorenzo Andolfatto, *Hundred Days' Literature: Chinese Utopian Fiction at the End of Empire, 1902-1910*. Leiden: Brill, 2019.

[3] Two notable exceptions: Takeda Masaya (武田雅哉), *Tobe! Daishin teikoku, kindai Chūgoku no gensō kagaku*. Riprogurafikusu, 1988. In addition to her earlier work, Ren Dongmei has produced a volume while working with Wu Yan at Beijing Normal University in mapping out early Chinese SF: *20-shiji Zhongguo kehuan xiaoshuoshi*. Beijing daxue chubanshe, 2022.

[4] Unno Jūza, *Kasei heidan* (火星兵団), v. 1. Tokyo Nichinichi Shinbunsha, 1941, 'Minna-san o kagaku ni sōdōin shitai' (皆さんを科学に総動員したい).

[5] Thomas Huters, *Bringing the World Home: Appropriating the West in Late Qing and Early Republican China*. Honolulu, HI: University of Hawai'i Press, 2005.

[6] Xin Yi [n], 'Weilai shijie', *Xiaoshuo shibao* 13 (1911): 1-3. Lorenzo Andofatto, etc Alexander Bogdanov, 'Kexue xiaoshuo: Huoxing' (Ru. *Krasnaya zvezda*, 1908), trans. Ai Siqi [n], *Kexue zhishi* (Shanghai) 1:9 (1934): 56-??; Filippo Tommaso Marinetti, 'Yue se' (Colour of the Moon, It. Un chiaro di Luna), trans. Song Chunfang, *Dongfang zazhi* 18:13 (1921): 102-103. Song's short translation of this play is a selection from *Teatro Futurista* (1915), and should not to be confused with Marinetti's 1909 'Uccidiamo il chiaro di luna', which is considered one of the major Futurist manifestos.

[7] 'Jiqiren', *Shengmingxian* 1:2 (1933): 2.

[8] 'Taiyang heidian fashe diancili, yufu shijie dazhan weiji' (Sunspots release electromagnetic energy, foretells a world war crisis), *Henan bao'an* 3 (1935): 52. The director of the Observatoire de Paris at that time was Ernest Esclangon.

[9] See *Kexue* 19:10 (Sep 1935), front matter.

[10] Lin Jun, 'Yueqiu lüxing', *Kexue quwei* 1:1 (1939): 255-258.

[11] Song Yi, '5-yue 28-ye kan huoxing', *Xinshaonian* 3:9 (1937): 59-64.

[12] Li Ruifu, 'Renlei zhi jianglai weizai shencun', *Kexue shijie* (Nanjing) 1:1 (1932): 13-25.

[13] A.N. Tolstoy, 'Siqu de huoxing', trans. Zhong Xianmin, *Wenyi yuekan* 4:1 (1933): 101-128.

[14] Oshikawa Shunrō, 'Junshi xiaoshuo: Haidi zhanting', trans. Jue Wo [n], *Xiaoshuolin* 2 (1907): 1-10. Translations of Verne's *Voyage au centre de la Terre* (1864) were influential, but so were early modern works such as Ludovico Ariosto's *Orlando furioso* (1516). Ludovico Ariosto, 'Dizhong tieta' (The iron tower in the Earth, part of *Orlando furiosa*), trans. Tian Fang [n], *Libailiu* 38 (1915): 65-71.

[15] Zhe Sheng [n], 'Jules Verne de 25-nian ji 20-yu-nian-zhong kexue xinfaming zhi yuyanzhe', *Dongfang zazhi* 27:10 (1930): 101-104.

[16] Xiao Zhu [Gao Xingjian], 'Shuli huntuanji', *Kexue shijie* (Nanjing) 4:11 (1935): 1124-1129.

[17] For example, see Shi Yinsi, 'Kexue de weilai shijie', *Kexue dazhong* 1:3 (Aug 1937): 94-97.

[18] Although I am unclear about collections in Korea, during the 1930s Taihoku University Library in Taipei imported full sets of Japanese science magazines, including those that feature early science fiction stories. National Taiwan University's library is one of the few locations were these full runs can still be read as original manuscripts.

[19] Seda Uyanık, *Osmanlı bilim kurgusu* (Ottoman Science Fiction). Istanbul: İletişim Press, 2013; Michal Daliot-Bul, 'Voyage to Innumerable Star Worlds: A Nineteenth Century Japanese SF Novel', *Science Fiction Studies* 48:3 (2021): 401-422; for translated examples from Chinese, see *Renditions: A Chinese-English Translation Magazine* 77-78 (2012), pp. 15-86; for translated examples from Russian, see Yvonne Howell, ed., *Red Star Tales: A Century of Russian and Soviet Science Fiction*. Montpelier, VT: Russian Life Books, 2013: pp. 31-112.

[20] Meng Jia, 'Guanyu ziran kexue yu wenxue de qintou wenti', *Shenbao* 17: 22185 (24 Jan 1935).

[21] On the impact of 'deviant detective fiction' (Jp. *henkaku tantei shōsetsu*, Ch. *biange tanzhen xiaoshuo*) on interwar Japanese science fiction, see Seth Jacobowitz, 'Unno Jūza and the Uses of Science in Prewar Japanese Popular Fiction', in Kent Gelder, ed., *New Directions in Popular Fiction*. London: Palgrave Macmillan, 2016, pp. 157-175.

[22] Zhen Zhi (Gu Junzheng), 'Xingbian', *Kexue quwei* 2:1 (1940): 31-35.
[23] Zhen Zhi (Gu Junzheng), 'Xingbian', *Kexue quwei* 2:2 (1940): 93-98.
[24] Xiao Feng, 'Xing keyi bian ma', *Kexue dagong* 1:2 (1937): 65. Earlier articles included Fan Hai [n], 'Dongwu yu "banyingang": xing de daozhuan xianxiang', *Taiyang* 2:3 (1935): 133-134. Howard Chiang
[25] Zhen Zhi (Gu Junzheng), 'Xingbian', *Kexue quwei* 2:4 (1940): 214-219.
[26] Zhen Zhi (Gu Junzheng), 'Xingbian', *Kexue quwei* 2:5 (1940): 276-280.
[27] 'Guanyu "Kexue guairen" zhi kongbu', (Tianjin) *Dianying zhoukan* 2:2 (1932): 2.
[28] 'Xing keyi bian ma', *Kexue dazhong* 1:2 (1937):65.
[29] Zhen Zhi (Gu Junzheng), 'Xingbian', *Kexue quwei* 2:1 (1940): 331-335.
[30] For example, see Gu Junzheng, Xun Yu, 'Kexue xiaopin: Baihua jiangui', *Taibai* 1:1 (1934): 57-58.
[31] Wu Mao [n], 'Du *Taibai* chuangkanhao', *Shenbao* 15 (1934): 22069.
[32] Zhou Yuying, '"Kexue wenxue" yu "kexue xiaopinwen"', *Xinren zhoukan* 1:26 (1935): 12-13.
[33] Wu Jian [n]. 'Tan ziran kexue xiaopinwen de neirong', *Shenbao* 14 (23 Jan 1935): 22184. The critic here refers to Gu Junzheng, 'Zuotian zai nali' [Where is yesterday?], *Taibai* 1:1 (1934): 58-59. Five days after the first attack, the same critic wrote that readers should be focusing on journals such as *Science* (*Kexue*) and *Scientific China* (Kexue de Zhongguo), avoiding those who would put an understanding of social science above natural science. Wu Jian [n], 'Ziran kexue xiaopinwen jiujing yao xie xie shenme?', *Shenbao* 17 (1935): 22189.
[34] Xu Maoyong, 'Tan kexue xiaopin', *Mangzhong* 2 (1935): 43-44.
[35] Zhi Tang [n], 'Kexue xiaopin', *Wenban xiaopin* 4 (1935): 19.
[36] Liu Shi, 'Qianbo', *Shenbao* 13 (23 Oct 1934): 22095. Liu's defense of 'shallow' science writing came just before his expulsion from *Shenbao* for antagonising KMT censors.
[37] Gu Junzheng, 'Kexue xiaopin: yue xiang yue hutu', *Taibai* 1:2 (1934): 101-102. The notion of 'muddled' (*hutu*) science literature was immediately picked up by other authors who identified the importance of the genre's links to popular fiction: Huturen ('Muddled Man') [n], 'Kexue xiaopin', *Beiyang huabao*, 24:1170 (1934): 2. Other critics noted the propensity for science shorts to be nothing more than 'nursery rhymes' and remain mired in a fog of ignorance, with only occasional 'flashes' of clarity. Leng Mo [n], 'Xiaopin yu kexue', *Shenbao* 14 (29 Jan 1935): 22190.
[38] Part 1
[39] Part 2. To consider the scientific work on lunar travel behind the fiction, see his previous article in the same magazine: Chen, 'Dao yueqiu qu?' *Kexue huabao* ?:1 (??): 9-13.
[40] Part 3
[41] Part 4.
[42] Part 5.
[43] Part 6.
[44] Part 7.
[45] Part 8.
[46] Part 9.
[47] 'Shousheng manbi', *Jianzheng zhoukan* 107 (1935): 18.
[48] Si Lian, 'Kexue wenxue zhi fenye', *Jinling zhoukan* 11 (1928): 1-6.
[49] For example, see 'science short' writer Xun Yu on 'feeling' and 'knowing': 'Juede he xiaode', *Xinsheng zhoukan* 47 (1934): 15-17.
[50] Manman Li [n], 'Kexue wenxue yu rensheng', *Shihua* 8-9 (1934): 3.
[51] Zhang Ming, 'Guanyu Sulian tongsu kexue wenyi zhuwenti', *Zhong-Su wenhua zazhi* 18:2 (1947): 57-59.
[52] Liu Ti [n], 'Kexue xiaopin: meng he xianshi', *Dushu shenghuo*, 1:9 (1935): 24-26.