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From the "Hugo Award" to the "Metaverse": The Internationalization Trend and Localized Screen Adaptation of Chinese Science Fiction (2015–2023)

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Abstract

In 2015, Liu Cixin's *The Three-Body Problem* won the Hugo Award, marking the breakthrough of Chinese science fiction (sci-fi) beyond regional boundaries and the beginning of its internationalization journey. The metaverse technology boom around 2023 injected new development momentum into it. Between 2015 and 2023, Chinese sci-fi formed a two-way interaction between internationalization and local screen adaptation. On the one hand, literary works represented by *The Three-Body Problem*, *Folding Beijing*, and *The Space-Time Painter* broke through boundaries via international awards, integrating Chinese narratives with the values of a community with a shared future for mankind to achieve a leap from textual output to cultural recognition. On the other hand, screen adaptations such as *The Wandering Earth* and the TV series adaptation of *The Three-Body Problem* promoted the formation of a local sci-fi industrial system, strengthening cultural expression through breakthroughs in hard sci-fi and the integration of genres.

Keywords

Chinese Sci-fi; Internationalization; Localization of Film and Television; Hugo Award; Metaverse.

1. Introduction

As an important carrier of scientific imagination and cultural values, sci-fi reflects a country's cultural soft power and industrial creativity. In 2015, *The Three-Body Problem*, a full-length sci-fi novel by Chinese writer Liu Cixin, won the Best Novel Award at the 73rd Hugo Awards. This was not only the first time Chinese sci-fi had received a top international sci-fi literary award, but also drove the global sales of *The Three-Body Problem* series to exceed 30 million copies, allowing the world to witness the narrative potential of Chinese sci-fi. [1] From then until 2023, Chinese sci-fi entered a "dual-driver" development phase. On the one hand, works such as Hao Jingfang's *Folding Beijing* and Hai Ya's T*he Space-Time Painter* continued to win Hugo Awards, sparking an upsurge in the internationalization of sci-fi literature driven by the "Hugo Award effect". On the other hand, *The Wandering Earth* ushered in a new era of Chinese hard sci-fi films, and the TV series adaptation of *The Three-Body Problem* even scored 8.7 on Douban. Domestic sci-fi development was gradually moving towards industrial structure. Around 2023, the rise of metaverse technology further broke the boundaries between creation and communication, providing new scenarios for the international expression and local screen adaptation innovation of Chinese sci-fi.

Currently, academic research on Chinese sci-fi mostly focuses on topics such as the development path of Chinese sci-fi films, the success or failure of sci-fi literary works, or the communication effects of the single IP *The Three-Body Problem*. However, systematic sorting

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out of the interactive relationship, development laws, and optimization paths between internationalization and local screen adaptation during the critical period from 2015 to 2023-starting with the Hugo Awards and extending to the rise of metaverse technology-remains insufficient. [2] Based on this, this paper takes this period as the research interval, integrates the research findings of three core literatures, and conducts an analysis from four dimensions: breakthroughs in literary internationalization, sci-fi IP adaptation and genre innovation in film/TV, the construction of a sci-fi film/TV industrial system and audience cultivation, and the collaborative development with the metaverse. The purpose is to reveal the transformation logic of Chinese sci-fi from "gaining international recognition" to "building international influence."

2. The Internationalization Breakthrough of Chinese Sci-fi after the Hugo Award: from Text Output to Value Resonance

Since *The Three-Body Problem* won the Hugo Award in 2015, the internationalization of Chinese sci-fi has ceased to be a random breakthrough of a single work. Instead, it has formed a complete chain led by awards, promoting text dissemination, and ultimately achieving value recognition, completing a leap from simply going global to being deeply understood by the international community. This process has relied not only on the narrative appeal of the works themselves but also on the precise balance between Chinese culture and universal human values. Furthermore, it has been inseparable from the continuous optimization of communication strategies, enabling Chinese sci-fi to gradually establish a unique discursive influence on the global stage.

2.1. Breakthrough in International Awards and Enhancement of Global Communication Efficiency

The Hugo Award, as the top award in the world of sci-fi, provides a significant international passport for Chinese sci-fi. Between 2015 and 2023, Chinese sci-fi writers won this honor multiple times, starting with *The Three-Body Problem* as the first Asian work to win awards, *Folding Beijing* as an important breakthrough for female writers, and *The Space-Time Painter* combining classical aesthetics with sci-fi creativity, forming a sustained award effect. This recognition directly drives the global dissemination of the work, and *The Three-Body Problem* has been translated into multiple languages and has entered the sci-fi bestseller list in the European and American markets, achieving significant sales growth. After winning the award, the overseas version of *The Space-Time Painter* quickly gained market attention and significantly improved its ranking. [3]

Endorsement by the award has brought international attention to more Chinese sci-fi writers. Many creators have successfully partnered with renowned overseas publishing houses, introducing more works to global readers. More importantly, the 2023 World Science Fiction Convention held in Chengdu attracted numerous professionals worldwide, becoming a key milestone for Chinese sci-fi to build an international exchange platform. [4] This grand event not only facilitated direct dialogue between Chinese and foreign sci-fi creators but also drove China's transformation from a sci-fi importer to a hub for sci-fi exchange, laying a solid foundation for subsequent international cooperation and cultural mutual learning. As Liu Cixin noted, such international exchanges enable people from diverse cultural backgrounds to fully integrate their perspectives on the future, bringing more reflections on the future to the world.

2.2. The Integrated Expression of Chinese Narratives and Universal Human Values

The core essence of international communication lies in conveying warm Chinese stories rather than simply piling up Chinese cultural symbols. Chinese sci-fi creation during this period has

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broken away from the early superficial integration model-characterized by Western narrative frameworks and fragmented Chinese elements. Instead, it takes Chinese thinking as its core and addresses issues of common concern to humanity, endowing cultural expression with greater ideological depth and cross-cultural resonance.

With its unique construction of cosmic sociology, *The Three-Body Problem* responds to the universal curiosity of all humanity about cosmic civilizations. The "The Dark Forest Theory" proposes not only contains in-depth reflections on the survival of civilizations but also implicitly embodies the traditional Chinese wisdom of "harmony in diversity." The "bug spirit" embodied by the character Shi Qiang in the book echoes the tenacious fighting core in traditional narratives such as "Kuafu Chasing the Sun" and "Hou Yi Shooting the Suns." It forms a distinctive yet complementary value expression compared to the common Western sci-fi narrative of individual heroes saving the world, enriching the value spectrum of global sci-fi.

Liu Cixin once noted that the emotional attachment to homeland and native soil runs deeper in Eastern culture. In the Chinese perception, Earth carries all of humanity's life memories, cultural heritage, and historical accumulation, and this profound sentiment flows naturally in his works. [5] The film *The Wandering Earth* integrates the national spirit of "Yugong Moving Mountains" into the global narrative of "taking the Earth with us to wander." Faced with the crisis of civilizational destruction, it abandons the narrative model dominated by a single country. Instead, its premise of all humanity uniting to save itself resonates perfectly with the vision of a community with a shared future for mankind, making it a key touchpoint of connection for generating broad resonance across cultures. *Folding Beijing*, through the sci-fi concept of spatial folding, metaphorizes the issue of social stratification in reality. It not only carries specific real-world concerns but also touches on the issues of equity and development that are of universal concern to global readers, demonstrating Chinese's unique insight into and response to the common dilemmas of humanity. The practice of these works proves that creations deeply rooted in local cultural soil are paradoxically able to touch upon the common value pursuits of humanity, triggering in-depth resonance across regions and cultures.

2.3. Adaptive Optimization of Cross-Cultural Communication Strategies

To effectively reduce the "cultural discount" in cross-cultural communication, Chinese sci-fi has gradually developed a mature strategy of "upholding core essence while adopting adaptive expression" in its internationalization process. This approach retains the essential characteristics and cultural genes of the works while striving to enhance their acceptability among audiences from diverse cultural backgrounds. At the level of literary dissemination, accurate translation by translators has played a pivotal role. When translating *The Three-Body Problem*, Ken Liu provided contextual explanations through supplementary annotations for content with distinct Chinese characteristics-such as the Red Coast Base and specific historical contexts. This not only fully preserved the narrative style and cultural connotations of the original work but also helped Western readers clarify the narrative logic, avoiding compromised reading experiences due to cultural barriers. In translating *Folding Beijing*, he linked the metaphor of social stratification in the Third Space to the issue of class mobility familiar to Western readers, making the core ideas of the work more accessible and acceptable.

In the field of film and television communication, the overseas promotion of the TV series adaptation of *The Three-Body Problem* adopted a differentiated strategy. Tencent's version (aired on major overseas media platforms with original Chinese audio and foreign subtitles) emphasizes fidelity to the philosophical depth and spiritual core of the original novel. Netflix's adaptation, however, adjusts the narrative rhythm to align with Western aesthetic preferences, highlighting dramatic conflicts and plot tension. These two versions complement each other, effectively covering different types of audience groups. The rise of online platforms has also opened up new paths for cross-cultural communication. [6] After the electronic version of *The*

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Three-Body Problem was launched on overseas online literature platforms, real-time comment interactions with readers allowed authors and translators to dynamically adjust their expressions, further enhancing the precision of cross-cultural communication.

Such multi-dimensional and adaptive communication strategies have enabled Chinese sci-fi works to successfully integrate into the global market while retaining their cultural characteristics. The Tencent version of *The Three-Body Problem* has received high ratings on IMDb, while the Netflix adaptation has drawn a large international audience. This achievement clearly demonstrates that cultural fidelity and international appeal can be effectively balanced, offering valuable insights for future cross-cultural dissemination of Chinese sci-fi.

3. IP Adaptation and Genre Innovation in Chinese Sci-Fi Filmmaking

High-quality sci-fi literary IPs serve as the core driving force for the development of domestic screen adaptations. Between 2015 and 2023, Chinese sci-fi films and television series, starting from mature literary IPs, gradually broke away from the traditional limitation of "a hodgepodge of soft sci-fi elements." Through in-depth exploration of IP adaptation and diversified exploration of genre innovation, they have constructed a creative path that integrates local cultural characteristics with compatibility with public aesthetics. This process not only relies on the audience base and ideological core accumulated by sci-fi literature but also benefits from the continuous adaptation of the film and television industry to the laws of sci-fi narration. Furthermore, it responds to the dual expectations repeatedly mentioned in Douban short reviews - "fidelity to the original work" and "adaptation for film and television" - forming an industrial ecology where literature and film/television mutually reinforce each other.

3.1. Sci-Fi IP Adaptations: The "Breakthrough Effect" and Two-way Empowerment

Sci-fi literary IPs provide screen adaptations with a content foundation that combines imaginative depth and ideological richness, forming a two-way empowerment cycle in which "the popularity of literary IPs feeds film and television, and the popularity of film and television in turn fuels literary dissemination." In 2019, *The Wandering Earth* was adapted from Liu Cixin's short story of the same name. Rather than simply replicating the plot, the film foregrounded a three-generation family narrative-Liu Peiqiang, Liu Qi, and their forebears-anchored in the core premise of "driving the Earth through space." It deeply integrated hard sci-fi elements with the feelings of family and country as well as native land attachment. This adaptation not only retained the sci-fi core of the original work but also connected with the general public through emotional threads. After its release, it not only triggered extensive social discussions but also drove a significant growth in the sales of the original novel, bringing previously niche sci-fi literature to a wider readership. The 2023 TV adaptation of *The Three-Body Problem* focused more on "faithful reproduction of the original work." The series meticulously presented classic scenes such as the "Guzheng Action" and "*The Three-Body Problem Game*," and even realistically recreated details like the architectural style of the Red Coast Base and the stewed pork shop in the 2007 storyline. It not only gained high recognition from original fans but also attracted a large number of non-sci-fi audiences, among whom highly educated groups showed significantly greater attention to the series compared to other genres.

This two-way empowerment not only activates the market value of sci-fi literature, but it has also led to the republication of many classic sci-fi novels that had been dormant for years, thanks to the popularity of their screen adaptations. Works by some emerging writers have also gained more creative resources due to the proactive positioning of film and television companies. Furthermore, this trend has promoted the establishment of a "front-end literary IP incubation mechanism" in the film and television industry. More and more publishing houses

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and film and television companies are now cooperating during the sci-fi novel creation stage, providing writers with suggestions on narrative rhythm and visual adaptability to ensure a smoother transformation of IP from literature to the screen. At the same time, policy support has provided a guarantee for this cycle. Documents such as the *14th Five-Year Plan for the Development of Chinese Cinema* have clearly included sci-fi IP development as a key focus of industrial development, further strengthening the synergistic effect between literature and film. This has enabled sci-fi IPs to gradually transition from "single-work adaptations" towards "full industry-chain development."

3.2. Genre Evolution: From "Soft Sci-Fi Mix" to "Hard Sci-Fi Maturity"

Before 2015, Chinese sci-fi film and TV was mostly "soft sci-fi," where sci-fi elements were used as decoration for comedies and children's shows. The scientific concepts were not rigorous, so the genre failed to form its own distinct identity. In early works like *Happy Star and Magic Mobile Phone*, the stories were still about school or family life, with science used only as a plot device. While this "hybrid approach" made the content more accessible, it meant Chinese sci-fi long lacked a clear genre label and was even criticized for being "unable to do hard sci-fi well."

The arrival of *The Wandering Earth* in 2019 completely shattered this situation, marking the initial formation of China's hard sci-fi film and television industrial system. The film was built around hardcore scientific concepts such as the "Earth engines" and the "Slingshot effect." To ensure scientific consistency, the production specifically invited researchers to help polish the script, repeatedly verifying details like the working principles of the Earth engines and the orbital calculations for Earth's journey. On the production front, the film abandoned the shortcut of relying solely on all-CGI effects, instead extensively combining practical models with digital technology. From the massive Earth engine models to the life scenes in the underground cities, every effort was made to achieve a sense of "realism" visually. The majority of the special effects were completed independently by domestic teams, freeing the production from its reliance on Hollywood's VFX technology. [7] The 2023 TV series adaptation of *The Three-Body Problem* further advanced the maturation of hard sci-fi. To visualize abstract scientific concepts like the "Archer and Farmer Hypothesis" and the "unfolding of a Sophon," the series employed technologies such as 4D cinematic animation rendering and GPU (Graphics Processing Unit) processing. It translated the complex cosmological sociology from the original novel into intuitive audiovisual language, which not only lowered the barrier for the public to understand the scientific concepts but also preserved the intellectual depth of hard sci-fi.

Audience reaction validates this breakthrough. On the review site Douban, words like "VFX," "faithful adaptation," and "hardcore" are common. Many viewers feel that "Chinese hard sci-fi finally has its own style." While some note that domestic effects don't yet match Hollywood's best, the majority praise the clear improvement. This approval has overturned old genre prejudices and encouraged more studios to create hard sci-fi, making it a central genre in China's sci-fi landscape.

3.3. Localized Innovation through Genre Integration

While hard sci-fi has been developing steadily, Chinese sci-fi film and television has not abandoned its local advantage of "genre integration." Instead, it integrates Chinese cultural elements and contemporary issues into the combination of sci-fi and other genres, forming a creative characteristic that balances entertainment with cultural expression. This integration is not a simple superimposition of elements; instead, it takes sci-fi as its foundation and enables the characteristics of other genres to serve local narratives, aligning with the aesthetic habits of Chinese audiences who "start from reality and move towards imagination".

The integration of sci-fi and comedy is one of the most successful directions. In 2022, Moon Man took "self-rescue on the moon" as its sci-fi main plot and continued Mahua FunAge's absurd

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comedy style. It combined Du Guyue's "social death" with the grand mission of saving the Earth. The film not only showcased the visual impact of sci-fi through scenes like the lunar base and space station but also used "Shen Teng-style humor" to soften the "cold rigidity" of hard sci-fi. For example, Du Guyue's interactions with King Kong Roo and the self-deprecating presentation of the "global live broadcast" gave the work both funny and touching moments, ultimately gaining wide market recognition. The integration of sci-fi and children's films focuses on theme upgrading. *Mozart from Space* uses the friendship between a boy, Ren Xiaotian, and an extraterrestrial being, Mozart, as its narrative thread, incorporating elements like musical dreams and parent-child relationships. The film not only displayed sci-fi imagination through Mozart's "superpowers" but also conveyed Chinese-style family values through "the father's understanding of his child's dreams". It became a popular family-friendly choice during the summer vacation, achieving the dual goals of "popular science enlightenment" and "emotional resonance". [8]

What is more distinctive of local characteristics is the integration of sci-fi and rural themes. Online films such as *What Are You Looking At? Alien* and *The Alien Incident* combine alien elements with practical issues like rural revitalization, intangible cultural heritage (ICH) inheritance, and the promotion of local specialties. Some films use "aliens arriving in the countryside" as a starting point to show the process of villagers transforming their hometown with technology; others convey the concept of "coexistence of tradition and the future" through the "collision between alien technology and traditional craftsmanship". Although such works have relatively low production costs, they have expanded the scene boundaries of sci-fi films and television dramas by virtue of their "down-to-earth narratives" and "realistic issues". This makes sci-fi no longer confined to "futuristic cities" and "space adventures", but connected to the current development of China's rural areas.

However, genre integration also faces certain controversies. In short reviews on Douban, "over-sentimentality" has become a point of contention, with some viewers believing that certain works have "overly direct emotional expression." For example, the lines delivered by the character Zhou Zhezhi in *The Wandering Earth II* were criticized as "imposing preaching." Furthermore, the "portrayal of female characters" has also been criticized, with some voices pointing out that in some of these hybrid works, women often appear in the roles of "wife" or "mother," lacking independent character arcs and being reduced to "emotional symbols." This feedback also points the way for future innovation: genre integration must find a balance between "entertainment value" and "depth." It must not only retain the imagination of sci-fi but also avoid the superficial integration of local elements and, moreover, focus on the diversification of character creation, allowing genre integration to truly serve a richer local narrative.

4. Building the Industrial System and Cultivating the Audience for Localized Sci-Fi Adaptations

The sustainable development of local sci-fi film and television relies not only on a mature industrial system as support, but also on the continuous improvement of the audience's scientific literacy. Between 2015 and 2023, Chinese sci-fi film and television made continuous efforts in the formulation of technical standards, industrial chain collaboration, and popular science communication, gradually breaking away from the extensive model of early development and laying a solid industrial foundation for the internationalization process. In this process, technological breakthroughs and ecological improvement have promoted each other, and audience cultivation and work dissemination have formed a positive cycle, driving Chinese sci-fi film and television to move from single-point breakthroughs to systematic development.

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4.1. The Systematic Enhancement of the Industrialization Level of Sci-Fi Film and Television

Sci-fi film and television have more stringent requirements in terms of technology application and production processes compared with traditional genre films. At this stage of development, China has gradually built an industrialized production framework that adapts to the needs of the domestic market. The production team of *The Wandering Earth* pioneered a standardized workflow for sci-fi filmmaking. During the script-polishing stage, science consultants were brought in to oversee the process, ensuring the scientific rigor of the core concepts. In the visual effects (VFX) stage, a model combining physical modeling with computer-generated imagery (CG) was adopted. In the post-production stage, a mechanism for multi-departmental collaboration was established. These standardized and practice-tested procedures have provided a practical, replicable model for the creation of subsequent sci-fi works.

Breakthroughs at the technical level are equally impressive. *The Wandering Earth II* used digital human technology to accurately recreate classic characters and realized real-time rendering processing with the help of virtual studios, significantly improving the film production efficiency. Domestic R&D teams have independently overcome the large-scale sci-fi scene modeling technology, successfully breaking the foreign technological monopoly in this field and effectively controlling production costs. In terms of talent development, many domestic universities have successively established specialized programs in areas like sci-fi film creation and visual effects design, focusing on cultivating hybrid professionals who possess both scientific understanding and filmmaking abilities. This provides a human resources guarantee for the long-term development of the sci-fi film and television industrial system. As Liu Cixin states, the rigor and sense of reality pursued by engineer sci-fi cannot be separated from the support of a strong industrial base. The steady advancement of China's sci-fi film industrialization is now allowing this creative philosophy to be fully realized.

4.2. The Synergistic and Integrated Development of the Sci-Fi Industry Chain

The synergistic operation of the industrial chain is a core element in improving the development quality of the sci-fi film and television industry. At this stage, China's sci-fi industry has formed an ecological pattern of multi-field linkage. In terms of IP development, a closed-loop operational model has been constructed where "literary originals, screen adaptations, and peripheral derivatives" mutually empower one another. When the screen adaptation project of *The Three-Body Problem* was launched, the publishing house simultaneously released a custom edition of the original book for the screen, while the production company collaborated with cultural and creative enterprises to develop derivative products like games and models, achieving the maximized release of the IP's value across different sectors. The industry's release of a list ranking the adaptation potential of sci-fi literary IPs has promoted an efficient transformation for high-quality works, enabling a "sign for film and television upon publication" model and significantly increasing IP monetization efficiency.

Cross-field resource integration has become an important driving force for industrial development. The production team of *The Wandering Earth* collaborated closely with the China Aerospace Science and Technology Corporation (CASC), integrating technological achievements in the aerospace field into the film's worldview setting. This not only injected a hard-core technological gene into the film but also opened new paths for the popularization of aerospace knowledge. The production company of the TV series adaptation of the *The Three-Body Problem* partnered with professional astronomical institutions, inviting experts to review scientific settings, thus ensuring the content's professional accuracy. Participatory creation by the sci-fi fan community has also become an industry highlight. During the production of the TV series adaptation of the *The Three-Body Problem*, the creative team gathered optimization

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suggestions through fan communities to refine the visual presentation of *The Three-Body Problem Game*. Before the release of Moon Man, advance screenings for sci-fi fans were held, and the film's comedic timing and emotional narrative were adjusted based on audience feedback, making the final product better aligned with market demand.

4.3. The Two-Way Linkage between Sci-Fi Audience Cultivation and Science Popularization

The long-term development of sci-fi film and television is closely linked to the enhancement of the audience's scientific literacy, forming a mutually reinforcing relationship. The deep integration of science popularization activities with film and television dissemination has become a crucial pathway. Following the release of *The Wandering Earth*, the Chinese Academy of Sciences (CAS) collaborated with cinemas to host a "Science Fiction and Science" lecture series, inviting experts to interpret the astrophysics concepts in the film, allowing audiences to deepen their scientific understanding beyond the viewing experience. After the broadcast of the TV series adaptation of *The Three-Body Problem*, professional astronomy media published analytical reports that elaborated on core concepts such as "The Dark Forest Theory" and "Cosmic Sociology," attracting a large number of astronomy enthusiasts to participate in interactive discussions.

The popularization of sci-fi in educational settings continues to advance. Primary and secondary schools have included works like *The Three-Body Problem* and *The Wandering Earth* on their recommended reading lists, and some schools have established sci-fi reading courses to cultivate students' scientific imagination. At the university level, an increasing number of institutions are offering general education courses on "Sci-Fi Literature and Film," covering an ever-wider student population. The audience structure is also gradually optimizing: younger demographics have become the core audience for sci-fi literature and film, and the proportion of female viewers has risen significantly. This trend toward a younger and more gender-balanced audience lays a solid mass foundation for the sustainable development of the sci-fi industry. This two-way interaction between the audience and the works has enabled Chinese sci-fi to form a virtuous cycle of "work dissemination, science empowerment, audience growth, and creative prosperity."

5. Challenges and Collaborative Development Paths Amid the Metaverse Boom

Around 2023, the explosion of metaverse technology opened up entirely new scenarios for the creation and dissemination of Chinese sci-fi. This has not only driven China's sci-fi internationalization and domestic film and television exploration to a deeper level but has also exposed numerous shortcomings in their process of synergistic advancement. How to leverage metaverse technology to overcome current dilemmas and maximize synergistic effects has become a critical issue for achieving high-quality development in Chinese sci-fi. This requires fully unleashing the empowering value of technology, confronting practical problems in development, tapping into the new potential of cross-cultural communication, and building a sustainable development framework from multiple dimensions, including content, industry, and dissemination.

5.1. The Empowerment of Metaverse Technology for Sci-Fi Creation and Dissemination

The core technologies of the metaverse, including virtual reality (VR), augmented reality (AR), and digital twins, provide a new path for sci-fi creation and dissemination. They enhance the three-dimensional presentation of sci-fi imaginations and further expand the scope of dissemination. On the creation side, virtual production methods have significantly lowered the

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barrier to entry for creating sci-fi film and television works. Some creative teams in China have already used VR technology to build metaverse sci-fi sets. Creators can adjust settings like space scenes and extraterrestrial environments in real-time through virtual devices, eliminating the need for large-scale physical sets. This not only simplifies the production process but also accurately recreates scenes from the imagination.

Metaverse platforms have also opened up new space for interactive creation in sci-fi literature. Readers can use VR devices to "step into" the Trisolaran world from *The Three-Body Problem* and choose their own development paths within the story's branches, transforming the original static text narrative into a dynamic, immersive experience. On the dissemination side, the metaverse has completely broken down geographical barriers. The metaverse venue at the 2023 World Science Fiction Convention allowed global audiences to participate in forums with their virtual avatars, enabling presentations by Chinese sci-fi writers to reach a large number of overseas users. *The Three-Body Problem* metaverse exhibition was launched in multiple overseas cities, using digital twin technology to recreate classic scenes like the Red Coast Base and the Guzheng Action, allowing international audiences to directly experience the cultural charm and scientific imagination of Chinese sci-fi. Qian Xuesen once translated "VR" as "Lingjing" (spiritual realm). This translation not only conforms to the characteristic of the interweaving of emptiness and reality in Chinese aesthetics but also predicts the in-depth integration of metaverse technology and sci-fi creation, endowing the dissemination of sci-fi works with greater cultural penetration.

5.2. The Synergy Dilemma in Internationalization and Local Adaptation

Although Chinese sci-fi has achieved periodic success in its international strategy and local screen adaptations, the deep integration of these two efforts still faces multiple practical obstacles. The issue of inefficient IP adaptation is particularly prominent. While domestic sci-fi literature has maintained a high output in recent years, the proportion of works that are successfully adapted into film and television projects remains low. A large number of works remain in the textual stage due to their highly specialized scientific settings, the high technical barriers for adaptation, or production costs that exceed market expectations. The imbalance in IP dissemination is equally evident. The overseas export of domestic sci-fi IP is heavily concentrated on a few top-tier titles, while numerous high-quality mid-tier works struggle to gain attention and resource allocation from the international market. Conversely, in the domestic sci-fi film and television market, adaptations of overseas IP account for a relatively high share, and the market influence of original domestic IP needs further consolidation.

Differences at the audience acceptance level have also become a significant constraint. Domestic sci-fi films and TV dramas have accumulated a stable audience base and a good reputation in the domestic market, but their overseas dissemination still mainly relies on Chinese communities and has not truly penetrated the mainstream Western audience circle. Taking the TV series adaptation of *The Three-Body Problem* as an example, its core viewership on North American streaming platforms is still dominated by Chinese people. Non-Chinese audiences face a cognitive barrier in understanding the Eastern philosophical core and cultural background knowledge contained in the work, making it difficult for them to resonate deeply. The shortcomings in industrialized operation also urgently need to be addressed. Influenced by a traffic-driven mindset, some film and television institutions rush to adapt sci-fi IPs, neglecting the core scientific rigor and narrative coherence of the original works. This not only leads to a decline in the reputation of the works but also erodes the audience's trust in domestic sci-fi films and TV dramas. In addition, the development of the sci-fi derivative market is progressing slowly. The revenue structure of most film and television projects still relies mainly on box office and copyright sales, with a very low proportion of derivative income. There is a significant

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gap compared with the industrial ecology of mature markets, failing to build a complete industrial closed loop of "content creation, screen adaptation, and derivative development."

5.3. New Opportunities for Cross-Cultural Dissemination Based on the Metaverse

The rise of metaverse technology offers an innovative solution to the challenge of "cultural discount" in cross-cultural communication, paving a new path to enhance the synergy between the internationalization and local screen adaptation of Chinese sci-fi. This makes the international dissemination of Chinese sci-fi more precise and appealing. Avatar technology combined with real-time multilingual translation significantly reduces the cost of cross-cultural communication. International audiences can participate in Chinese sci-fi themed metaverse events by creating custom avatars. During interactions, they can click on relevant scenes to trigger corresponding English explanations and 3D visualizations. For example, in a *The Three-Body Problem* themed metaverse forum, Western audiences could intuitively grasp the core principles and application scenarios of nano-fiber technology, effectively avoiding misunderstandings caused by differences in cultural background.

The cultural integration scenarios built by the metaverse have further narrowed the emotional distance between Chinese sci-fi and overseas audiences. Taking the metaverse space themed "The Wandering Earth" as an example, this scenario invites global users to jointly participate in the design and collaboration of planetary engines, integrating the collectivist concept in Chinese culture with the individual innovation thinking advocated in Western culture into interactive practice. Users can independently choose their design directions based on their own cognition. In the process of collaboration, they naturally understand future development solutions from different cultural perspectives, realizing soft communication at the value level. More importantly, the user-generated content (UGC) model of the metaverse has fully stimulated the participation enthusiasm of overseas audiences. Many overseas sci-fi enthusiasts have spontaneously created derivative content of *The Three-Body Problem* on metaverse platforms, combining the "The Dark Forest Theory" with traditional Western theories on contact with extraterrestrial civilizations. This not only enriches the communication dimensions of Chinese sci-fi IPs but also enables their core concepts to gain broader international recognition, further expanding the global influence boundary of Chinese sci-fi.

5.4. Strategic Suggestions for Synergistic Development

Combining the opportunities brought by metaverse technology and the current development dilemmas, Chinese sci-fi needs to build a synergistic development path from three core dimensions-content, industry, and communication-to promote in-depth integration of internationalization and domestic screen adaptation. On the content level, it is essential to firmly grasp the dual cores of technology and culture, deeply integrating metaverse technology with traditional Chinese culture. For instance, by creating sci-fi works that combine Dunhuang culture with metaverse technology, digital twin technology can be used to present a collision between the "Feitian" (apsaras) imagery and futuristic technology, thereby building an IP matrix that possesses both cultural distinctiveness and technological imagination. Additionally, a shared database for sci-fi IPs should be established to standardize scientific settings, lower the difficulty of adapting literary IPs into screen formats, and facilitate the collaborative advancement of content creation.

On the industry level, it is crucial to promote cross-sector collaboration among sci-fi publishing, the film and television industry, and the metaverse sector. Publishing houses can partner with metaverse platforms to release digital collectibles of sci-fi IPs, achieving the dual goals of content monetization and audience cultivation. Concurrently, it is necessary to accelerate the establishment of industrialized standards for sci-fi film and television, standardizing key stages

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such as script polishing, special effects production, and post-production review to prevent poorly made works from entering the market. Strengthening international industrial cooperation is also particularly important. This can involve co-developing metaverse sci-fi projects with overseas film and television companies, leveraging their mature distribution channels and market expertise to propel domestic IPs onto the international stage. On the dissemination level, a global sci-fi metaverse community should be built to integrate resources from international sci-fi fans and host interactive events like transnational sci-fi creation competitions. Simultaneously, collaboration with international streaming platforms should be enhanced to launch metaverse-customized versions of Chinese sci-fi film and television. These versions can be adapted to the aesthetic preferences of audiences in different regions, enabling the stories and core values of Chinese sci-fi to achieve broader recognition and resonance.

6. Conclusion

The period from 2015 to 2023 was a critical cycle for Chinese sci-fi, marking its transition from breakthrough to growth. The Hugo Award laid the foundation for internationalization, local screen adaptations opened up the market through IP adaptation and genre innovation, the construction of an industrial system and audience cultivation solidified the industry's foundation, and the metaverse provided new scenarios for synergistic development. During this time, Chinese sci-fi achieved a leap from the breakout success of individual works to systematic development, and a transformation from a follower of Western standards to a pioneer with distinct Chinese characteristics. However, it is crucial to recognize that issues such as inefficient IP conversion, uneven audience acceptance, and insufficient industrialized operations have yet to be fundamentally resolved.

Looking ahead, Chinese sci-fi must take the Hugo Award as a starting point and the metaverse as a new opportunity, adhering to a development logic that combines an international vision with a localized core. In terms of content, it should delve deeper into the integration of Chinese culture and universal human values to create a diversified IP matrix. In terms of industry, it must enhance the collaborative chain connecting literature, film and television, the metaverse, and derivatives, thereby elevating its level of industrialization and commercial operation. In terms of dissemination, it should leverage metaverse technology to reduce cultural discount, propelling Chinese sci-fi from gaining international recognition to building international discourse power. Only by doing so can Chinese sci-fi truly realize its grand vision of a journey to the stars and the sea, contributing “Chinese wisdom” and “Chinese solutions” to the world of sci-fi.

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