The Gamified Social Allegory in Liu Cixin's Supernova Era

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Abstract: Liu Cixin's Supernova Era presents a profound allegory of societal transformation through gamification. This article argues that the novel, depicting a world where children inherit the Earth after a supernova kills all adults, anticipates contemporary trends of gamification while critically examining its potential and perils. The article employs game studies and science fiction studies to examine four core games—leader selection, territorial simulation, Antarctic wargame, and territory exchange in the novel. It explores how the novel envisions the collapse of the centralized, adult-imposed industrial order and its replacement by a decentralized, play-driven society, facilitated by information technology and mass participation. It further dissects the Antarctic "wargame" as a cautionary tale, revealing the inherent dangers of violence, ethical erosion, and global conflict escalation when gamification loses control. Finally, the paper contextualizes Liu's vision within Chinese science fiction history and contemporary literature, highlighting his distinct "posthuman" perspective that challenges anthropocentric humanism. Combining discussions about the potentials and risks of a gamified society, Supernova Era thus serves as a prescient and critical commentary on the logic and consequences of societal gamification. Liu's science fiction imagination can therefore provide inspiration and broaden perspectives on the future direction of post-Cold War social structures.

Keywords: Liu Cixin; Supernova Era; Gamification / Ludification; Posthumanism; Chinese Science Fiction

1. Introduction

Liu Cixin stands as a defining figurehead within contemporary Chinese science fiction literature. His works construct a highly distinctive science fiction aesthetic universe characterized by vast, awe-inspiring cosmic vistas, rigorous scientific rationality, and profound inquiries imbued with ultimate humanistic concern. His science fiction works often infuse their imagination of alternative history with reflections on real-world issues, carrying an element of elite consciousness. [1](Song 2020, 19) This trait is particularly evident in his unique insights into social transformation in *Supernova Era*.

    Supernova Era was a novel composed during Liu Cixin's early creative period. Its initial draft was completed

in 1989, with the work first published in 2003. It depicts a post-apocalyptic world where children inherit Earth after a supernova's lethal radiation eliminates all adults over thirteen. Unlike his later epics *The Wandering Earth* and *The Three-Body Problem*, this novel carries stronger realist undertones and a pronounced focus on social critique, reflecting the exploratory nature of his early creative phase. Its revision history underscores this development: the 1989 draft critiques Chinese adult society and cultural conservatism; 1990s versions engage with post-Cold War geopolitics such as a war between China and NATO; and the 2000 fourth edition—now the standard published version—shifts to a global Antarctic wargame, prioritizing logical extrapolation of a "children's world" to become a mature alternate-history SF narrative.[2] (Zhang 2021, 39-44)

Notwithstanding its ties to 1990s historical contexts, the novel's vision of a world reorganized by children uncannily resonates with 21st-century "gamification" discourse. In the story, Chinese child leaders fail to sustain industrial-era order because younger children refuse regimented labor. Then Chinese children's society undergoes a fundamental reorientation, pivoting towards a structure fundamentally driven by the core principle of "play". State-owned property loses its protected status; private property similarly diminishes in perceived value; only work perceived as inherently enjoyable or directly facilitating ongoing play finds willing participants. Furthermore, international power disputes find resolution through "war" games meticulously disguised as entertainment and competitive events. Liu's conceptualization thus offers a degree of prescience regarding contemporary society's gamification trajectory. Post-Cold War modern governments increasingly favor leveraging the positive feedback mechanisms inherent to games and the entertainment industry. They prioritize this approach over deploying explicit ideological narratives. Their goal in doing so is threefold: first, to guide mass behavior; second, to enhance public participation in civic affairs; third, to integrate playful elements into educational paradigms. This novel transcends the boundaries of mere post-apocalyptic fantasy, functioning instead as a potent allegory. It leverages the stark divergence between the children's collective and adult society to reexamine underlying social-historical logic and envision the operational dynamics of a new generation's society. This fully embodies Liu Cixin's overarching aesthetic preoccupation with the collective fate of civilization.

The article proceeds by addressing three interrelated questions that frame its analysis: First, how do the four core games in Supernova Era—from the "leader selection" to the "territory exchange"—function as a narrative toolkit to dramatize the tension between centralized control and decentralized play in societal transformation? Second, what does the collapse of the Antarctic wargame reveal about Liu's critique of gamification when stripped of ethical constraints—does it serve as a warning against weaponizing play, or a recognition of its inherent instability? Third, in the context of cross-cultural communication, how does the "territory exchange" game negotiate between local Chinese cultural norms (e.g., collective identity, "native soil sentiment") and global game logics, and what does this negotiation suggest about Liu's vision of a post-national, gamified civilization? To unpack these questions, Section I first examine the "territorial simulation game" as a microcosm of decentralized social restructuring before discussing the Antarctic wargame to expose the risks of unregulated gamification. Then I analyze the "territory exchange" game to explore its implications for transcultural identity reconstruction. Furthermore, I situate Liu's imaginative endeavor within the historical context of Chinese science fiction literature and its contemporaneous literary milieu, analyzing how this specific vision challenges the entrenched humanist narratives favored by intellectuals while simultaneously responding to the enduring demand within Chinese science fiction to engage meaningfully with socio-political concerns.

2. The Allegory of Social Transformation within Decentralized Games

The overarching narrative arc of *Supernova Era* can be interpreted as unfolding through the sequential framework of four distinct games. The inaugural game materializes as Chinese adults confront the catastrophic reality of the supernova explosion, expending their remaining vitality to educate children and rigorously select exceptional individuals from among them to assume future leadership roles. Following the adults' demise, the fragile national order briefly maintained by the appointed child leaders can be perceived as a direct continuation of this foundational game. The second game emerges some time after the official commencement of the Supernova Era. Children congregating within burgeoning online communities spontaneously initiate simulations of potential new societal orders, culminating in a proposal to supplant the existing reality with a "play"-oriented society modeled within a territorial simulation game. Their collective vision ultimately garners overwhelming popular support, propelling all nations into the hedonistic and consumption-driven "Candytown" Era. The third game manifests as a wargame conceived by American child leaders, aiming to resolve their internal crisis of proliferating uncontrolled weaponry while perpetuating global hegemony. This entails a military competition staged in Antarctica, where national armies vie for territorial resource allocation. The fourth and final game transpires after the Antarctic wargame collapses due to uncontrolled nuclear escalation. Confronted with escalating political crises, China and the United States engage in an audacious "exchange territories" game, involving the complete reciprocal migration of their populations onto each other's soil, inheriting all assets and resources. The ultimate question of which populace will successfully adapt to this radically new environment is deliberately deferred into an indeterminate future.

The first game, encompassing the Chinese government's formalized selection of child leaders coupled with the child leaders' transient governance enacted according to adult tutelage, embodies, within Liu Cixin's conceptual framework, the quintessential transmission mechanism of an industrialized nation-state's ruling order. The Chinese state apparatus systematically divides a substantial cohort of high-potential children into distinct groups, allocating to each a territory possessing varied resources and conditions. Officials meticulously observe each group's capacity to sustain productive activities within their assigned territory and their aptitude for resolving conflicts of interest rationally when interacting with other miniature "nations." Ultimately, the selection process identifies three children – Huahua, Specs (Yanjing), and Xiaomeng – as the future supreme leaders of China.

A critical observation regarding this paramount power selection activity lies in the Chinese government's strategic decision to disguise the entire rigorous process as a game. This artifice serves to stimulate the children's cognitive engagement and encourage authentic emotional expression during the proceedings. When convening the children, Chinese officials adopt a deliberately casual tone, announcing: "Children, you've come here from all over the country. Now let me tell you the purpose of this journey: We're going to play a big game!" (34). Beneath this playful veneer, however, all activities adhere as closely as possible to principles of realism, extending even to the distribution of live ammunition weaponry to the children. While some children express puzzlement regarding the true nature of this exercise, Specs demonstrates precocious comprehension, articulating its underlying significance:

"It's a science experiment," Specs said to a few other children.

"Our twenty-four little countries are a model of the world, and the adults want to see how this model develops. Then they'll know what our country should do in the future." "Then why don't they run the experiment with adults?" someone asked.

"If the adults know it's a game, they won't play it seriously. We're the only ones who'll play a game seriously, and that's what makes the outcome real." (44)

Here, Liu Cixin effectively utilizes Specs as a narrative conduit to articulate his personal interpretation of game's significance within classical historical and cultural contexts. Players immersed in game activities consciously shed extrinsic utilitarian motivations, adhering earnestly and seriously to established rules. Throughout this process, they authentically enact a designated game procedure, thereby unlocking their intrinsic potential and revealing certain fundamental truths. This concept of "playing seriously" aligns seamlessly with foundational game theory. Johan Huizinga, a pioneering scholar in play studies, defined play thusly: "play is a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is 'different' from 'ordinary life' [3]28(Huizinga 1980, 28)". Within classical game theory, the rules of a game transcend mere operational logic, possessing the profound capacity to forge a utopian field. This field demarcates the game's world from the quotidian realm, empowering players to undertake independent, creative activities within its bounds. Consequently, Huizinga posited that all human cultural achievements inherently contained elements of play at their inception. Whether ritual, law, the order of war, or art, each originated from this non-utilitarian yet profoundly serious creative impulse. It was only through societal maturation and development that these creative endeavors became assimilated into the fabric of daily order, gradually ceasing to be recognized as play and solidifying into the myriad laws governing routine activity. Liu Cixin's perspective within the novel resonates strongly with this core tenet of classical game theory. He similarly espouses the conviction that the driving force of "play" constitutes civilization's primordial creative energy. Therefore, when human society confronts the necessity of post-crisis reconstruction and must entrust its legacy to young inheritors, the selection process cannot proceed under the guise of conventional education or assessment. Instead, it necessitates simulating authentic future scenarios through the modality of play, thereby stimulating children's latent potential.

However, the socio-political order the adults endeavor to transmit via this game represents a fundamentally centralized structure. The Chinese officials' overarching selection game possesses the explicit objective of identifying national leaders endowed with a macrocosmic vision, capable of steering society's operational direction. From the adult perspective, all technical roles potentially lie within the purview of children to inherit under parental or pedagogical guidance. Leadership capability, however, demands the most concentrated cultivation efforts. Its absence in a post-adult world inevitably precipitates societal collapse. Following the selection, the novel details the rigorous education imparted to the chosen leaders, encompassing skills such as analyzing national daily grain consumption from a macro perspective and utilizing strategic maps to dissect battlefield situations. These details of transmission subtly convey Liu's implicit viewpoint: the order underpinning an industrial nation-state constitutes essentially an elitist structure. Viewed through a gamification lens, only the individual leaders qualify as "players" conforming to classical game theory. They alone observe the nation's comprehensive information from a macro vantage, formulate strategic decisions, and subsequently disseminate their intentions downward through the hierarchy. Only the leaders engage interactively with the entire game system. Mass citizens merely execute designated activities based on obligation, unable to exercise subjective creativity within the systemic framework. This precise aspect constitutes a primary point of subsequent criticism directed at Huizinga's game theory. While championing the playful spirit animating the birth of cultural institutions, he simultaneously critiqued industrial assembly lines for stripping humanity of creativity and aesthetic sensibility. This perspective on game culture ultimately functioned to uphold the ruling status of elite and aristocratic strata, effectively sanctifying the pre-industrial reality where sovereignty resided exclusively with elites and attributing human culture's value solely to those elites who created early culture with a playful disposition.

The absolute demise of the adults and the dawning of the Supernova Era precipitate an immediate assault upon the established order. Children staffing various production departments find themselves utterly adrift, lacking adult leadership guidance. During a critical crisis, the three appointed Chinese child leaders recall the legacy entrusted to them by the adults: a quantum supercomputer designated "Big Quantum". Leveraging this pinnacle of information technology, they instantaneously transmit the voice of Beijing leadership via telephone and radio to all departments, assuring other children of the leaders' presence. Simultaneously, they command the computer to rapidly erect a nationwide surveillance mechanism, visualizing the status of departments across the country to facilitate strategic planning. Here, Liu Cixin exhibits his acute perceptiveness as a science fiction writer regarding the intricate relationship between technology and society, specifically illustrating how large governments employ computer technology to reinforce centralized control. Roberts (2006) pointed out that the core of science fiction is technology "enframing the world".[4] The "Big Quantum" is the embodiment of this logic. During the governance process, Specs metaphorically likens Big Quantum to their "eyes and mouth." This metaphor encapsulates how information technology integrates into governmental administration, becoming the physical apparatus through which the political center observes and controls all subordinate units. Moreover, more potent information gathering and dissemination tools inherently empower the national leaders, acting as "players" within the system, furnishing them with significantly enhanced and more convenient instruments for action. Furthermore, the medium of Big Quantum may also metaphorically imply that technological progress has made it possible to implement comprehensive governance over the resources of an entire society. In the history of globalization, technological advancements—such as precision geography and comprehensive transportation networks—have turned all spaces into "homogeneous spaces" that can be calculated and allocated by rulers, thereby enabling the global governance of empires.[5] (Sloterdijk 2013, 33) Moreover, the integration of information technology has undoubtedly made spatial governance more convenient and efficient.

Nevertheless, the concerted efforts of the three child leaders to perpetuate the old society according to adult directives culminate in failure. The workers and executors within subordinate departments remain fundamentally children under thirteen years old. They prove incapable of embracing the adult paradigm of regimented daily schedules and repetitive labor, ultimately compelling the nation towards the pleasure-centric "Candytown" society. Had the collapse of the old game resulted solely from inherent child psychology, the entire novel might have functioned merely as a disaster narrative. Liu Cixin's profundity resides in his subsequent extrapolation, centering on information technology. He imagines that a *new* game narrative actively catalyzes the formation of the new society. The vision of the new order materializes within cyberspace, manifesting in the form of games, *before* the three leaders even recognize the old order's disintegration. Within the narrative, Big Quantum's deployment of the fastest nationwide internet simultaneously catalyzes the formation of multitudinous online communities. Chinese children, driven by loneliness stemming from the absence of adults, demonstrate heightened enthusiasm for forming online discussion communities. Spontaneously, within virtual space, they initiate territorial reconstruction games. Following a series of subversive destructions and reconstructions of the nation enacted within these virtual games, they present a comprehensive social reform proposal to the three leaders, advocating the abandonment of the old era's work-hour system and property regime in favor of establishing a pleasure-centered order. Liu's extrapolation effectively refutes Huizinga's elitist cultural perspective, envisioning instead a new gamified society steered by decentralized mass preferences—a societal model strikingly congruent with today's information age.

Two pivotal aspects of this new gamified society intrinsically link to the prevailing technological environment. Firstly, consensus regarding the new societal model emerges organically within the mass games

flourishing in cyberspace *before* the three leaders consciously perceive its necessity. The selection and territorial simulation games, which consumed vast resources under Chinese adult officials, now permit participation by every citizen at minimal cost within the internet space. Furthermore, simulation games operating at the network level possess demonstrably superior visual impact. When the three leaders inspect the territorial blueprints crafted by children within cyberspace, they encounter numerous counter-intuitive designs: Candytown constructed entirely from confectionery; A concept mandating residence for all within high-rise towers while restoring the majority of urban space to natural hunting grounds; Social activities conducted without currency, relying instead on barter and the exchange of self-invented toys. Crucially, the children explicitly demand the modification of reality to conform to these game plans. This mode of collective action fundamentally overturns the old order's operational paradigm where elites functioned as the sole subjects of the nation, signifying that information technology empowers the masses to become active societal subjects. Moreover, the visual simulations proliferating within cyberspace supersede the children's formal education, molding their societal imagination.

The second significant technical issue revolves around how information technology intrinsically reconstructs the political concepts underpinning the modern state. Citizen participation in elections to express opinions in the pre-information age fundamentally differs from political expression mediated by mass media in the information age. Pre-information age universal elections implicitly operated on the principle that citizens, as constituent parts of the national whole, bore responsibility for overall national affairs, exercising their rights accordingly. Political discourse within the mass media era of the information age, conversely, manifests as communitarian and fragmented. Individuals can intervene using a singular identity, focusing discussion on a specific issue, subsequently aggregated by media into public opinion. Analogously, within the novel, heterogeneous online citizens variously discuss urban construction, working hours, etc., their disparate inputs integrated by Big Quantum before presentation to the three leaders. Within the information age, "Like in the setting of a game, political issues appear as simple fragments of a much bigger picture; there is also the opportunity with these game-like politics to take part, but there is no obligation. Instead of a political idea or ideology, there is a simple challenge; instead of tackling common problems in the world as a whole, we stick with solving a demarcated field or question or problem; instead of asking the citizen to believe in a political program, the issues at stake ask us to take part in finding a solution to a particular problem" [6]. (Glas 2019, 283) This transformation, on one hand, grants citizens subjectivity to engage with diverse matters; on the other hand, it poses a profound challenge to the overarching political ethics of the state. Citizens cease to be uniform entities before their leaders; instead, they become players within the entire social system, possessing diverse subjectivities mediated through technology. In the view of ludologist Joost Raessens, a hallmark of modern society as a gamified society is the escalating importance of media literacy, "the term play is not only suitable for characterising our contemporary media culture (playful) but also for defining the knowledge and skills (ludoliteracy or play competence) required to function in media culture." [7](Raessens 2014, 109)

The transformation of political logic instigated by shifts in information technology and the media environment inexorably steers the nations of the Supernova Era towards the "Candytown" era—a development entirely unforeseen by any adult. Confronted by this abrupt, unforeseen shift, the three leaders within the novel initiate a profound reevaluation of their original conceptions of governance: *"Relax. History is a river that flows where it wills, and no one can stop it...... We're part of history, a few drops in that river. Go with it."* (170). Ultimately, they accede to the citizens' proposal, reorienting their own efforts towards guiding the military and power departments to maintain order within the "Candytown" era. This reflects Liu's optimistic expectation that child leaders, sharing

the nature of their constituents, can adapt to the exigencies of the new epoch. Liu Cixin exhibits a keen fascination with imagining transformations in societal forms triggered by altered technological environments. Compared to certain extreme imaginings probing ethical boundaries in his later novels, he displays greater acceptance towards the children's entertainment-oriented society. He recognizes the child's playful spirit as a vital form of creativity consistently underestimated by modern rulers. He articulates a core view through the novel: game principles are more innovative and pioneering than economic principles, as play drives exploration of the world's mysteries; over time, play will evolve to a higher level, and unlike the adult era where economics fueled scientific progress, play will become a far more powerful driver—one that ultimately propels human civilization to an explosive leap, enabling it to meet or exceed the critical velocity needed for survival in the cold universe.

3. The Allegory of Social Conflict within War Games

If Liu Cixin adopts a measured and objective stance towards the "Candytown" era catalyzed by Chinese children's psychology and technological context, his portrayal of the global wargame ensnaring children from diverse nations employs brutal and absurd depictions to expose the dead end towards which uncontrolled global order veers, issuing a stark warning against societies lacking reason that blindly capitulate to gamification trends. Within the narrative, the United States, seeking to alleviate its internal crisis of proliferating uncontrolled weapons within the populace while simultaneously perpetuating the old society's hegemonic status, proposes a wargame to various nations. This entails determining the allocation of Antarctic resources through multiple competitive war events staged on the frozen continent. To safeguard their international standing, the majority of nations feel compelled to participate. A series of war events, initially structured as formal competitions, gradually spirals towards chaos following attempts by certain nations to challenge established rules, culminating in the war's termination after China and the U.S. deploy nuclear weapons.

Functioning as an allegory, the Antarctic wargame reveals that a society governed by the core principle of pleasure inherent to gamification harbors equally destructive potential for crisis and the abuse of violence, potentially abandoning ethical constraints more readily than the old society ever did. Within the novel's logic, the wargame's conception originates explicitly from the American imperative to sustain international hegemony. This narrative segment commences with a discussion between the two American leaders concerning America's essence. Vaughn explains to President Davey that America's possession of international hegemony in the prior era stemmed primarily from its foundational identity as an empire developed upon the principle of "play", coupled with the global dissemination of its entertainment culture. Weapons themselves constitute humanity's primal toys, Vaughn asserts; the violent desire animating young people wielding firearms aligns intrinsically with the fundamental mentality of "play". To ensure the continuity of U.S. international power, Vaughn declares: *"The world of play is dawning. Children of other countries and nationalities will play in different ways. Mr. President, what you need to do is to make the children of the world play according to America's rules!"* (201).

Here, Vaughn's assertion that violent activities and even warfare constitute a form of play engages directly with an issue explored since the inception of classical game theory. Huizinga contended: *"In the beginnings of civilization rivalry for first rank was undoubtedly a formative and ennobling factor. Together with a genuine naivete of mind and a lively sense of honour it produced that proud personal courage so essential to a young culture."* [3]101 (Huizinga 1980, 101) The rationalization of war derives from the pursuit of elevated status within civilization, a pursuit evolving into a martial spirit. Concurrently, the culture cultivated by this valor-based ethos

could potentially endow activities like war and duels with specific rules, confining violence within defined parameters. Consequently, subsequent descriptions of the wargame depict numerous lower-ranking soldiers deriving genuine enjoyment from earning merit through combat.

However, within the origin narrative of this specific wargame, Liu Cixin pointedly emphasizes the motivational factor of nations vying for international hegemony, thereby expanding the gamification discourse to encompass global conflict and political globalization. The governments within the novel accept the wargame proposal solely motivated by self-interest in securing Antarctic resources and bolstering international status. Yet, in mobilizing their internal armies, leaders employ propagandistic strategies that gamify warfare, guiding subordinate units to perceive their actions as stemming from non-utilitarian, even noble motives. Throughout the propaganda campaign, organizers deliberately package the event as an Olympic-style spectacle for broadcast:

"Children of the new world, welcome to the first Olympic Games of the Supernova Era. This is a war games Olympics, a fun Olympics, a thrilling Olympics, and a real Olympics! Children, the boredom of the Common Era has come to a close, and human civilization has returned to its childhood, to a happy, uncivilized age. We have left the dreary ground and returned to the freedom of the trees, we have shrugged off the clothes of hypocrisy and grown luxurious downy coats. Children, the new motto of the Olympic Games is: 'Take part! Sharper, Fiercer, Deadlier.' Let the world go crazy, children! Next, I'll describe the events." (246).

The mobilization for global warfare under the guise of competition within the novel bears disturbing resemblance to military mobilizations conducted in reality under banners like counter-terrorism or anti-despotism. Liu Cixin here exposes how the glorification of military action and the promotion of martial spirit have become integral components of hegemonic globalization within modern society. From the perspective of some scholars, military-themed video games themselves function as mediums of imperialist globalization. Gamified war, such as entertainment-edited war footage in video games, broadcasts, and videos, renders war a normalized component of daily existence, "The long-standing interaction of video game culture and the military apparatus is a component in this process of the banalization of war."[8] (Dyer-Witheford 2009, 99) Players enthusiastically engaging with war-themed games inherently participate in the process of legitimizing the empire's global military endeavors. Within *Supernova Era*, Liu starkly reveals this brutal reality by transforming "players" into actual combatants in the wargame.

During the Antarctic wargame's initial phases, all its inherent brutality remains cloaked beneath the formal structure of competitive events, displaying significant divergence from the warfare conventions of the old era. For instance, tank battles no longer necessitate mutual reconnaissance of numbers and formations; all information is transparently available. Victory is determined solely by tallying "kills" after close-quarters shooting encounters for point accumulation. Artillery engagements evolve into a mode resembling pistol duels. Opponents for all nations are not chosen through strategic selection but dictated by the predetermined competition schedule. This superficial veneer of civilized rules becomes the decisive factor enabling the war to proceed with an illusion of order.

"Careful thought reveals that this form of warfare is not entirely inexplicable. Rules and agreements suggest the establishment of a system, and a system gains inertia once established; a violation by one side implies the system's collapse, with unforeseeable consequences. The key point is that this warfare system could only have been established in a children's world where game thinking was determinative, and could never be reproduced in an adult world." (259).

Nevertheless, the maintenance of this superficial order does not equate to a relatively mild wargame. On the contrary, within numerous infantry-dominated events, the absence of cover and maneuverability renders the

wargame significantly more brutal than adult wars of the previous era. Yet, the organizers persist in packaging death as mere "withdrawal," perpetuating the bloodshed. This grotesque spectacle reveals the aspect of a gamified society operating beyond ethical restraint. The game rules themselves redefine values, *"Any game's rule system is a critical site for analysis because it posits a claim about how the slice of reality modeled by the rules functions. It develops an ontology, a (full-fledged or sketchy) reality model that dictates what is, and as importantly what is not, part of that world. First, the rule system separates figures from the ground of messy reality by defining what elements are at play in a game: Board wargames modeled military units, not civilians or wildlife."* [9](Huntemann 2010, 34) In real life, we can already see a series of politicized game practices, such as using video games to provide legitimacy for the post-9/11 war on terror.[10] (Payne 2016) Within the novel's wargame, death itself ceases to be linked to the irreplaceable loss of life in reality; instead, it becomes tightly coupled with points within the reward-punishment mechanism. Violence is dissociated from the cruel acts prohibited to civilized individuals by education; it morphs into sporting events, particularly in projects involving the active control of automated weaponry. The act of firing upon armored targets inherently alleviates guilt compared to directly attacking flesh-and-blood adversaries. Within this absurd game, Liu refutes the adults' initial conjecture at the novel's outset – that a children's world would be devoid of war—demonstrating instead that the inherent logic of societal operation inevitably rationalizes violence to a level acceptable to its members. By hypothesizing an extreme gamified war, Liu reminds people of the extreme realities that gamification can lead to. This dystopian writing embodies the significance of science fiction: it brings readers back to reality and achieves a closed-loop cognitive cycle. [11](Suvin 1988, chap. 5)

The descent of the Antarctic war into uncontrollable chaos is itself intrinsically linked to the logic of games. Within the narrative, the collapse of the wargame commences with numerous nations testing the boundaries of the rules during the infantry events. In the cold weapons conflict, the Japanese army's deployment of military dogs onto the battlefield drastically amplifies the conflict's savagery, simultaneously shifting the Chinese troops' mentality from competitive engagement towards frenzied retaliation. Ultimately, the cold weapons battle degenerates into a slaughter reminiscent of pre-modern warfare. This rupture violates the principle of orderly war culture lauded by Huizinga: "We can only speak of war as a cultural function so long as it is waged within a sphere whose members regard each other as equals or antagonists with equal rights; in other words, its cultural function depends on its play quality. This condition changes as soon as war is waged outside the sphere of equals, against groups not recognized as human." [3]89(Huizinga 1980, 89). However, the order is made by particular people to make the game "like a combat in which equality of chances is artificially created, in order that the adversaries should confront each other under ideal conditions, susceptible of giving precise and incontestable value to the winner's triumph."[12] (Caillois 2001 15) Confronted directly with bloody violence in close combat, participants find themselves incapable of maintaining rational principles within their minds, descending instead into battles fueled by hatred.

Liu Cixin's harrowing depiction of cold weapons combat strips away the narrative camouflage of gamified war, revealing its true visage. The portrayal of children regressing to primal bestiality amidst ferocious combat inevitably evokes William Golding's *Lord of the Flies* (Golding 2006) for readers. [13] Within *Supernova Era*, Specs explicitly references *Lord of the Flies* before the battle, hinting at the wargame's potential descent into unforeseen cruelty—a prediction borne out by events. However, Liu Cixin's conceptual logic for the Antarctic war diverges fundamentally from Golding's. While *Lord of the Flies* similarly depicts humans exhibiting cruel and violent traits after separation from adult societal constraints, it tends to attribute this violent beastiality to

humanity's primal nature, serving as a cautionary tale about the role of societal ethical education in suppressing humanity's inner savagery. Liu Cixin, conversely, depicts the war game's cruel scenes entirely through a lens of cold, natural logic. In Liu Cixin's view, ethics and morality are products shaped by social norms, and specific ethical frameworks are merely molded by the social configuration of a given era. The children of the Supernova Era descend into a wargame crueler and more absurd than the old era solely because their society's gamified discourse has shaped a comprehensive set of values that trivialize life education; this descent is the inevitable consequence of their societal form. This reflects the aspect of Liu Cixin's science fiction aesthetics that questions humanism, championing instead rational logic and a naturalistic perspective.

Another work bearing similarity to this wargame is Kinji Fukasaku's film *Battle Royale* (*Tokyo Battle Royale*), which similarly depicts adolescents killing each other under game rules within an extreme scenario. The terrible game in the film "is a critique of Japan's post-bubble capitalist society, which rendered youth 'economic competitors' rather than 'future inheritors'. [14](Barroso 2012, 175) Liu Cixin acknowledges being influenced by this film, recognizing it as a work of science fiction. He states, "The greatest charm of *Battle Royale* lies in it being a grand allegory about human society, ruthlessly peeling back layers of veils to expose certain very essential things in human society... The revelation of natural laws only makes us suddenly realize, but when the laws of human society are revealed, especially when vividly expressed through literature or visual arts, it makes many people nervous."[15]65 (Liu, 2015, 65) Barroso argues that Battle Royale's portrayal of adolescent violence where students are forced to kill each other under a totalitarian "game rule"—is a critique of Japan's post-bubble capitalist society, which rendered youth "economic competitors" rather than "future inheritors."[14] (Barroso, 2012, 175)Liu's commentary also reflects the distinction between his concept of depicting children's war and the film's. The adolescent violence in *Battle Royale* reflects a situation where capitalist society, developing to an extreme economic state, ceases to educate children as future inheritors, instead viewing them as direct economic competitors to adults, thus antagonizing them. It imagines a scenario following the collapse of youth's cultural significance. In contrast, the war in *Supernova Era* allegorizes how the gamified context of contemporary society cannot conceal real conflicts of interest, depicting the collapse of rhetorical discourse within war.

The wargame's complete loss of control stems from the U.S. violation during the intercontinental missile game, employing nuclear weapons to bombard a base. When the Chinese representative furiously accuses the U.S. of breaking the rules, the American side retorts that fun constitutes the paramount rule. Ultimately, the Chinese children activate the nuclear weapons secretly preserved by the adults as a contingency, initiating nuclear war and forcing the U.S. to abandon the wargame under reciprocal nuclear deterrence. By employing the weapons most likely to annihilate civilization to end the conflict, Liu Cixin implicitly argues that restraining war through game rules and maintaining violent conflict within an ordered framework is impossible. From the perspective of game theory, all competitive game orders inherently involve a calculus of costs and benefits. War, however, as an act of violence, implies the potential for the complete annihilation of the opponent or complete annihilation by the opponent. When the subjects of the game face the peril of total destruction, rational calculations of input and output lose all meaning, "all the protagonists might spend more then they gain from the competition---the War, the Leviathan, and Civilization might all lose---yet remain bound to the race and survive as long as their relative losses do not become crippling."[16](Gat 2006, 411)

A profoundly ironic reality surfaces: the Chinese child leaders believed they had entered a new era emancipated from adult guidance, participating in this war driven by a mindset focused on contending for international status. Yet, when the wargame spiraled out of control, it was the nuclear weapons force clandestinely

cultivated *by the adults* as a precaution that afforded them the opportunity to retaliate and terminate the conflict. This validates the adults' anxieties on the eve of the Supernova Era: leadership ability is the competence most demanding of mature experience; nascent leaders lacking life experience will inevitably subject civilization to a series of setbacks. This also reflects Liu Cixin's ambivalence on the issue of intergenerational transmission. On one hand, as a science fiction writer, he is fervently drawn to imagining scenarios where a new generation's society sheds old societal discourses, embracing new technologies in entirely novel forms. On the other hand, he harbors deep reservations about whether the new generation can develop smoothly after severing ties with old civilizational traditions, revealing a persistent undercurrent of national anxiety within his fiction.

4. Historical and Cultural Concerns within the Gamified Allegory

Following the Antarctic wargame, the populace of both China and the U.S. plunges anew into an atmosphere of disillusionment and pessimism, consuming resources aimlessly. Seeking to mitigate the nascent order's collapse and explore the possibility of establishing a genuinely stable new civilization, the newly appointed U.S. President proposes an "exchange territories" game to China. The populations of both nations completely migrate onto each other's soil, inheriting all property and resources of the reciprocal territory. Thus, within an entirely novel social environment, the citizens of both countries are expected to reignite their vitality. At the migration's conclusion, the three Chinese leaders depart their homeland carrying the only objects permitted for removal: three antique pottery jars.

This profoundly symbolic denouement alludes to Liu Cixin's ultimate contemplation on how the new generation of humanity might rebuild civilization. The cruel and meaningless game war effectively negates the possibility that a gamified society founded on the principle of pleasure can evolve into a stable new civilizational order, thereby compelling national leaders to explore alternative pathways for civilizational forms. Substantively, the "exchange territories" maneuver represents a more radical deconstruction of the old civilization than the wargame itself. It signifies that the children of the Supernova Era will utterly obliterate traditional national identity consciousness, eradicate the attachment to native soil—particularly significant for Chinese people—and fundamentally reconstruct their own cultural genes, thereby exploring a new future.

This radical rupture with cultural identity constitutes a vital component of Liu Cixin's science fiction aesthetics. Numerous commentators on Liu Cixin observe that a key distinction setting him apart from past Chinese science fiction writers lies in the strong posthuman coloration and tendency to question humanism within his science fiction imagination. The development of Chinese science fiction creation, originating in the late Qing Dynasty, has consistently harbored aspirations towards proximity to political reform. Science fiction novels from the late Qing Dynasty to the Republic of China often contain the connotations of spreading scientific knowledge and imagining a Chinese utopia, and embody the "suppressed modernity" of Chinese society. [17](Wang 1997) "During the Mao era, it became a vehicle for molding a new socialist man by popularization of modern science and technology, among young people in particular. During the post Mao thaw, Chinese SF responded to the Party's imperative to achieve the Four Modernizations." [18](Li 2021, 11) This methodology of intertwining scientific progress with national destiny was once cited by sinologist C.T. Hsia as evidence for his critique that Chinese writers were excessively obsessed with political intervention, exhibiting an "obsession with China." Liu's science fiction imagination, however, diverges markedly. He does not contemplate philosophical problems with human society as the ontological foundation but rather analyzes and extrapolates human society as extensively

as possible from the scale of the universe and the perspective of nature. As David Der-Wei Wang articulated, *"In Liu's fictional world, human society is often treated as a minor problem when compared to the extravagant and grandiose scale of the universe. Human survival is made possible merely through the mercy of a supreme alien species, and the extinction of humanity does not have much of an impact on the universe. Most of Liu's work can be called 'posthuman' because of its highly technologized and omnipotent perspective, Experimenting with ideas of changing physical reality, he creates entire new universes and depicts them."*[19] (Wang, 2017, 953)

Consequently, for Liu Cixin, the cultural inheritance of the nation-state is not a core concern. Conversely, on the cosmic scale, constructed national culture represents merely a fleeting moment, a contingent ideology, and frequently even exerts a negative influence by obstructing civilized individuals from apprehending nature's truths. At the very outset of the Supernova *Era*, Liu depicts the state of existence for various civilizations on Earth at the moment of the supernova explosion. In England, it is the Greenwich Observatory's observation of the supernova; in North America, it is the Lexington event that altered the colonies' destiny. In China, Liu narrates the eternal sunrise greeted by ancient Chinese people:

"One can't step twice in the same river' is nothing more than the babbling of an ancient Greek, for the river of time is the river of life, and this river flows endlessly at the same unchanging speed, an eternal flow of life and history and time. That's what the people of this city thought. That's what the people of the plains of northern China thought. That's what the people of Asia thought. And that's what the carbon-based life-forms called humans everywhere on the planet thought. On this hemisphere, they were being lulled to sleep by the flow of time, convinced that the sacred eternal was unbreakable by any force, and they would wake up to a dawn identical to that of countless previous mornings. That faith, lurking in the depths of their consciousness, granted them the same peaceful dreams woven for untold generations." (15).

Simultaneously, he describes Emperor Qianlong within the Forbidden City perusing classical texts passed down through Chinese antiquity, texts describing the world's eternal, immutable laws. In Liu Cixin's view, the Chinese attachment to native land and cultural traditions, pursuing an eternal, unchanging order, has fostered a Chinese cultural character leaning towards conservatism and pragmatism. Therefore, when confronting a new era of tumultuous change, or even a rupture crisis like the hypothetical Supernova Era, the Chinese should particularly transcend cultural traditions to seek a viable path forward. In the novel's afterword, he posits that the children's society depicted in *Supernova Era*, devoid of parental guidance, serves precisely as a microcosm of contemporary human society: "All humanity is an orphan who cannot find the hands of its parents, filled with fear and bewilderment. At the same time, letting the flames of childishness and wildness in human nature rise, finally burning into the fire of crazy destruction... We are far less fortunate than the children in the novel because no one teaches us." [15]75(Liu, 2015, 75) The Chinese children he portrays, after exchanging territories and facing an indeterminate future, embody his expectations for a new Chinese generation that transcends the limitations of native land sentiment to explore the real, cold laws of nature.

Liu Cixin not only breaks away from the political reform interest characteristic of the Chinese science fiction tradition but also harbors profound skepticism towards the humanist tradition permeating contemporary Chinese literature as a whole. Liu's critique of anthropocentrism—evident in his rejection of mainstream Chinese literature's "human narcissism" [20](Liu 2014, 107)—is amplified by the "territory exchange" game: by forcing children to abandon "native soil sentiment" (a core Chinese cultural value) through game rules, Liu suggests that gamification can break cultural rigidity—yet only if paired with respect for natural laws." Liu's critique of mainstream literature connects intrinsically with the literary concepts prevalent in China in the 1990s. Following

the Reform and Opening Up, mainstream Chinese intellectuals engaged in literary research and creation dedicated themselves to reconstructing intellectual subjectivity and attempting to establish a literary tradition centered on intellectuals, supplanting the previous official narrative centered on class theory (Chen 1998; 2001).[21][22] This naturally carried expectations of mending historical trauma and rebuilding cultural context. However, from the perspective of Liu Cixin, a science fiction writer, this reconstructed literature centered on humanism and cultural elites fails to convincingly address the question of where Chinese people, or even humanity, should go. What holds genuine persuasive power, he argues, are the laws of nature and the cosmos. Examining and extrapolating human civilization from the perspective of natural laws can yield grander and more magnificent imaginations, uncovering more possibilities for human evolution. Liu Cixin's posthuman thinking within science fiction creation represents a pioneering expansion beyond the limitations of Chinese literature. His writing returns to the source of the Chinese literary spirit in the 1980s, that is, to maintain an imagination open to the world (Song 2023, 28).[23]

However, is the imagination of human history based on a cosmic perspective that Liu Cixin pursues truly a human extrapolation devoid of humanist presuppositions? Combining science fiction theory and re-examining the implicit concept of play within *Supernova Era*, one discerns this is not the case. At the novel's conclusion, the leaders of China and the U.S. accept the exchange territories game, anticipating that this final game will reactivate the inherent strengths of both nations. From Vaughn's perspective, the cowboys of the American pioneering era embodied the group most representative of the quintessential pioneering American spirit:

"They lived lives far less romantic than in the movies. In the Wild West, they faced a constant threat of hunger and disease, and their lives were always in danger from attacking wildfires, wolf packs, and Native Americans. With just a horse and a revolver, they rode off smiling into a cruel world to forge the American miracle, pen the American epic, their strength drawn from a desire for hegemony over the new world.

"…Before the supernova, our fathers and mothers hid themselves inside the hard shells of skyscrapers, under the impression that they had the world in their pocket. Ever since the purchase of Alaska and Hawaii, they no longer expanded into new territory, no longer dreamed of new conquests, but turned slow and lazy, and the fat on their bellies and necks grew thick…" (307-308).

Here, Vaughn essentially hopes that the exchange territories game can recreate the American founding myth, enabling citizens to rediscover a new direction within a harsh, unfamiliar environment. Within Liu Cixin's understanding of human history, the primordial strength of the nation-state originated from the creative spirit of exploration ignited when confronting survival crises, unburdened by heavy historical ethnic consciousness. This creative force is precisely the "play spirit" studied and expounded by Huizinga—the spirit that birthed all human cultural institutions. Here, Liu effectively circles back to the novel's first game: the selection game that placed children in a state of ignorance to simulate nations and exhibit leadership potential. After navigating a series of extrapolations within extreme scenarios, Liu guides the children to realize that the various legacies inherited from the old society – antiquated concepts of social order, property resources enabling prolonged hedonism and profligacy – obstructed their construction of a civilizational form suited to their own needs. They must transcend the obscuration of old cultural identities to become the original founders of the new order, just as Specs articulated in the selection game: "play it seriously". Liu invests his hope in this play spirit of recreation confronting nature, indicating he does not deny humanity's potential to transform nature and build a better society in response to cosmic laws and natural crises. He does not even reject nationalist myths, as evidenced by his ultimate expectations vested in the pioneers' founding myth.

The plot where several children take earthenware jars with Chinese soil as their final keepsakes seems to

imply that Liu Cixin believes the new generation of China can also reactivate the most vital elements of Chinese culture. Jameson (2005) points out that the treatment of traditional culture in utopias often presents a dialectic of both deconstructing and inheriting: utopias dissolve rigid cultural dogmas while preserving symbols with vitality. It can "a registering apparatus for detecting the feeblest positive signals from the past and the future and for bricolating and combining them and thereby producing what looks like a representational picture (Jameson 2005, 29). [24]" This logic is particularly evident in the plot of the ancient earthenware jars: the Chinese child leaders carry the earthenware jars while relocating—on one hand, they abandon the traditional belief, and on the other hand, they embody the memories of homeland culture through the jars. Liu Cixin does not completely repudiate traditional culture; instead, through the gamified scenario (the territory exchange game), he transforms nostalgia for the homeland into collective rationality that adapts to the laws of nature. Meanwhile, in his writing of the "territory exchange" game, Liu Cixin emphasizes the respective national myths of the Chinese and American peoples through science-fictional speculation, and explores the trajectories of national identities in the future. This kind of writing aligns with the era when globalization entered a new phase of changes after the Cold War, and conforms to the trend where non-Western science fiction writers "tell the story of the evolution of the transnational and multimedia manifestations of science fiction." [25](Link & Canavan 2019, 3) thereby contributing to breaking down Western-centrism in science-fictional imagination.

5. Conclusion

Throughout the entire novel, the spirit and imperative of play propel the development of children's **society**. Although it once led people astray, it ultimately emerges as the driving force propelling them towards the new era. The concept of "game" within *Supernova Era*, much like Liu Cixin's concept of "science fiction" within his creative theory, presents superficially as an objective reflection of changes in the material environment. Yet, it inherently embeds a logic of technological progressivism. Within the novel, games function as simulations guiding children towards serious social role-playing, discovering their own potential and the manifold possibilities of social configurations. Within the writer's creative theory, science fiction similarly constitutes a simulation severing ties with the real cultural context, exploring the multiple potentialities of social and civilizational evolution. In Suvin's classic definition of science fiction, he states: *"Thus SF takes off from a fictional ("literary") hypothesis and develops it with totalizing ("scientific") rigor—the specific difference between Columbus and Swift is smaller than their generic proximity. The effect of such factual reporting of Fictions is one of confronting a set normative system—a Ptolemaic-type closed world picture—with a point of view or look implying a new set of norms; in literary theory this is known as the attitude of estrangement"* .(Suvin, 1979, 6).[26] This power to shatter closed discourses and engender possibilities is precisely what Liu Cixin strives to preserve within his world imagination. Compared to more radical, individualized posthuman discourses like Donna Haraway's, Liu Cixin's posthuman science fiction aesthetics consistently preserves the possibility for the progress of humanity as a collective entity. And because Liu's aesthetic persistently insists on maintaining humanity as a whole as the narrative subject, resisting movement towards narratives of individual liberation, an element of technological progressivism invariably persists. As Csicsery-Ronay argues, *"SF orients itself within a concept of history that holds that science and technology actively participate in the creation of reality, implanting human uncertainty into the natural/ nonhuman world. At the same time, sf's hesitations also involve a sense of fatality about instrumental rationality's power to transform or to undermine the conditions of thought that gave rise to it. The same freedom that detaches*

nature from a mythology of natural necessity restores that fatality, ironically, in the irrepressible drive of human beings to transform nature continually and without transcendental limits." (Csicsery-Ronay 2008, 4)[27]

It thus becomes comprehensible why Liu Cixin's *Supernova Era* could achieve a degree of foresight and warning regarding the gamification of contemporary society. He observed that the driving force of play constitutes a crucial motivation for the post-Cold War new generation of youth to imagine and attempt transitioning towards new social forms, leveraging new technological media. This creative drive has already been analyzed within classical game theory and was entrusted by Liu with the expectation of transcending traditional Chinese cultural contexts and intellectual centrism to forge a culture for the new era. And the reason Liu places hope in the creative power of play is precisely because this adolescent capacity to generate possibilities aligns perfectly with his creative theory of imagining humanity's collective destiny through the medium of science fiction.

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