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姜峯楠和劉宇昆的思辨短篇小說：共構與非人類的「共同世界」

The Speculative Short Fiction of Ted Chiang and Ken Liu: Composing the “Common World” with Nonhumans

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中文摘要

本論文深入研究二十一世紀作家姜峯楠和劉宇昆的思辨短篇小說，通過兩位作家的設想，想像出以「人類」與「非人類」為主題所共存的世界，這些主題涵蓋廣泛，包括機器、人工智能、上傳的意識、外星人等等，透過借鑒新物質主義布魯諾·拉圖爾所提出的“共存世界”概念，來探討兩位作家如何挑戰人類與非人類的二元論思維，並透過協商不同領域的差異和互相理解的方式，共構和諧的“共存世界”願景。首先是姜峯楠的短篇小說如何擺脫根植於科學範式的傳統「人類與非人類」二元對立，強調關心「非人類」福祉以及超越以人類為中心思維模式的重要性，而劉宇昆的作品則通過詩意書寫、隱喻和意象等錯綜複雜方式來編織多元的世界，利用不同的敘事手法促進對「非人類」多樣性的理解。通過此分析，對兩位作家的作品提出新穎的解釋方式，同時也揭示思辨短篇小說為我們未來與新興「非人類」主體的關係提供反思的潛力，在當代廣泛對於推測性的未知實體討論中，這項研究能提供切實有影響性的的反思，有助於塑造我們對未來的理解。

關鍵詞：姜峯楠、劉宇昆、思辨短篇小說、非人類、共存世界、布魯諾·拉圖爾、新物質主義

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Abstract

This thesis delves into the speculative short stories of twenty-first century authors Ted Chiang and Ken Liu. Through their narratives, both writers envision worlds where coexistence with imagined "nonhuman" entities becomes a central theme. These entities encompass a diverse range, from machines and artificial intelligence to digitally uploaded consciousness and extraterrestrial intelligence. Drawing on the concept of the "common world" proposed by new materialist Bruno Latour, this study investigates how Chiang and Liu challenge dualistic thinking concerning human and nonhuman beings. By negotiating differences across various grounds and striving to comprehend each other's agencies and modes of existence, the writers propose ways to achieve a vision of a harmonious "common world." This thesis shows how Chiang's short stories break away from traditional human-nonhuman" dichotomies rooted in scientific paradigms, emphasizing the importance of caring for the well-being of "nonhumans" and acknowledging their existence beyond human-centered modes of thinking. Conversely, Liu's works intricately weave complex worlds through poetic prose, metaphors, and imageries, utilizing diverse narratives as a means to foster an understanding of the multiplicities of "nonhumans." Through this comparative analysis, this thesis provides novel interpretations of Chiang and Liu's narratives while shedding light on the potential of speculative short fiction in offering alternative perspectives on our relationship with emerging "nonhuman" entities. As contemporary discussions grapple with speculative unknown entities, the findings from this research offer timely reflections and contribute to shaping our future understanding.

Key Words: Ted Chiang, Ken Liu, Speculative Short Fiction, Nonhumans, Common World, Bruno Latour, New Materialism

doi:10.6342/NTU202302702

Table of Contents

doi:10.6342/NTU202302702

Chapter One: Introduction

Background: Speculating Confrontations with "Nonhumans" in Short Stories

Imagine a distant era where human existence intertwines with enigmatic, undiscovered "nonhuman" beings. In this future world, robots gracefully assume our toils and nurture us, while artificial intelligence actively engages in governance. Superintelligences, enhanced by technology and digitized consciousness, become cherished kin and confidants. Meanwhile, extraterrestrial beings grace our terrestrial realm, and we forge galactic connections in our cosmic sojourns. Ted Chiang and Ken Liu's short fiction opens the doors to these intriguing speculations, inviting readers to contemplate the potential realities filled with their presence. Ted Chiang explores this theme among the eighteen short stories compiled in two notable collections, *Story of Your Life and Others* (2002) and *Exhalation: Stories* (2019). Similarly, Ken Liu's imagination can be found within an extensive repertoire of approximately 150 short stories, some of which are featured in the collections *The Paper Menagerie and Other Stories* (2016) and *The Hidden Girl and Other Stories* (2020). Their writings have earned both authors contemporary science-fiction awards, ranging from Hugo and Nebula to Hugo Awards, but also the labels of "speculative writers" in their receptions from literary critics and interviews. This thesis discusses the "speculative writing" highlighted as a distinct trait that marks both writers' short stories and their role in sparking imaginative encounters with diverse entities. The following questions guide this research: What unique elements do Ted Chiang and Ken Liu employ in their "speculative" writings? How do their short stories stand out in their modes of speculation? Moreover, how do these speculative short stories offer insights into future encounters with the various "nonhuman" subjects that may cross our path?

To understand the values inherent in the speculative fiction (referred to in this thesis as "SF") of both writers, it is insightful to examine their views on fiction as

doi:10.6342/NTU202302702

expressed in their joint interviews at Roadside Picnic in 2020. Ted Chiang emphasizes that fiction serves as a means to contemplate the innovative changes and creative potentials of modern technologies. He views SF as "not about prediction or forecasting trends; it is a way of thinking about the inevitability of change and how we cope with that" (qtd. in Wilk). Similarly, in the interview, Ken Liu grounds fiction in the current reality instead of merely envisioning "possible futures." Liu sees SF as a force-multiplier that "amplifies sociological trends, extrapolates technological developments, evolves nascent conflicts," allowing us to understand the present reality (qtd. in Wilk). Overall, Chiang and Liu converge in highlighting speculative fiction as a powerful tool for engaging with the complexities of technology and societal developments that have shaped our contemporary reality.

The trait that Ted Chiang and Ken Liu identified in their speculative fiction connects them with past critics of "speculative fiction," notably Robert Heinlein, Judith Merrill, and Margaret Atwood. Robert Heinlein first suggests in the 1930s that SF is distinct from science fiction for its aim "not to predict the future but to clarify the present world" (Heinlein 3). Judith Merrill, in the 1950s, re-examines the term defining speculative writing as a means to "comment on, or speculate about, society, humanity, life, the cosmos, reality [a]nd any other topic under the general heading of philosophy" (qtd. in Oziewicz 10). In the 21st century, Margaret Atwood sparked renewed discussion on the labels of SF. She distinguished speculative narratives by their grounding in the existing world "taking place on Planet Earth" (Atwood 513), exploring consequences of technology, the nature, and limits of humans, the relations of humanity to the universe, changes in social organizations as well as realms of imaginations in diverse ways (Atwood 515). While the term "speculative fiction" is relatively a debatable terminology today, as demonstrated in Ursula Le Guin's infamous debate with Atwood's said classifications of SF, there is no

doi:10.6342/NTU202302702

doubt that Chiang and Liu's visions in specific ways echo the overlapping emphasis these past critics have placed upon the values of "speculation" in fiction. Johan De Smedt's observation points to the overarching focus that past SP discussions have in common. That is, SF provides grounds for open-ended and creative "mental prospection" (2) that enables the envisioning of "counterfactual situations" (3), and through the creation of alternative reality, SF can open new space for "philosophical possibilities" (7). Hence, the past defining debates on SF helps illuminate the visions Chiang, and Liu have spoken of in their speculative writing.

Within the context of the common theme found in their works, Ted Chiang and Ken Liu demonstrate the practice of speculative writing by presenting a multitude of possibilities that encourage readers to contemplate human engagements of speculative "nonhuman" entities. With this, this thesis uses "nonhumans," drawing from a new materialism framework. By employing the lens of new materialism, I borrow the speculative connotations of "nonhumans," that is, the re-evaluations of their agencies demonstrating their complexities which extend beyond human understanding while challenging traditional human-centered perspectives on their existence. The imaginative "nonhumans" entities I have included in my discussions encompass, in Ted Chiang's stories, automata made by human beings through nomenclatures for human reproduction in "Seventy-Two Letters," automatic patent nannies for the deliverance of child care in "Dacey's Patent Automatic Nanny," artificial intelligence pets made the entertainments of human beings in "The Lifecycle of Software Objects," as well as extraterrestrial species with incomprehensible communication technique in "Story of Your Life ."For Ken Liu's work, "nonhumans" refers to the advanced robots that may replace human labors as well as algorithms-developed consciousness in his "Gods" trilogy, digitally uploaded entities living in artificial realms in "Staying Behind" and "Vast of Herds,

doi:10.6342/NTU202302702

Flocks of Reindeer," as well as alien cognitions spread out in different galaxies in "The Wave," "Cosmic Spring" and "An Advanced Readers' Picture Book Of Comparative Cognition." While new materialism's "nonhuman" generally explores subjects ranging from natural elements such as animals, plants, and minerals, to technological objects such as technological artifacts and devices, and also non-living objects such as furniture and buildings, and microorganisms and bacteria, my examination of Chiang and Liu's work seek inclusion of theses speculative "nonhumans" figures in the present theoretical discussions. This is not only to emphasize the connection in similarities between the re-examination of existing "nonhuman" entities and emerging "nonhumans" through both writer's speculative practices but also to demonstrate how Chiang's and Liu's short stories encourage expansion on present discussions through these entities, showing that they may one day become part of the confrontations we face in our near future.

Besides drawing from new materialism practices to interpret the "nonhumans," the incorporations of a new materialist approach to "speculation" can further offer guidelines to understand Ted Chiang's and Ken Liu's various approaches to the struggles and uncertainties faced in humans' engagement with various "nonhumans." Luke Moffat's "Putting Speculation and New Materialisms in Dialogue" notes the significance of connecting speculation and new materialism. He notes that since speculation is about "confront[ing] the messiness of multiple futures" (4), regarding speculation through "material practice" becomes a valuable tool in engaging the potential realities because "[n]ew materialisms can help to realize and make real the material, more-than-human worlds with which speculation implicitly deals, to forge a two-way street between thinking and matter" (Moffat 4). Isabelle Stengers also notes this connection when she refers to speculation as "new modes of cognition, of strategically practicing ways of knitting ourselves back into the world" (qtd. in Instone and Taylor 136). Furthermore, Stenger highlights

doi:10.6342/NTU202302702

the speculative thinking found in fictional stories by drawing on Alfred North Whitehead and William James' philosophy, identifying them with practices that "calls on us to explore modes of existence" making up our experiences, and to dwell on "possible becomings, pressing for insisting on, all those 'might haves' or 'could bes'" (Stengers and Debaise 17) harbored in various given situations. Similarly, Donna Haraway draws new materialism with speculative narrative, proposing the forms of "Speculative Fabulation" that help engage with the world through alternative scenarios and possibilities. Amongst the vast theoretical approaches inviting us to think about fostering a shared world with "nonhumans" in this discipline, the methodology used in this thesis to examine Chiang and Liu's world is that of Bruno Latour. His approach, known as the "Common World," is fitting in understanding the themes of reconciliation and coexistence that permeate Chiang and Ken Liu's short stories. Latour's theories on the different means to progress towards the visions of coexistence and interdependence of diverse entities align well with the speculative worlds created by both authors.

This thesis highlights the unique role that the medium of short stories plays in the works of Ted Chiang and Ken Liu and how it complements their speculative objectives. The condensed nature of short stories offers them a distinct advantage, allowing them to focus tightly on a single speculative "what if" idea. Through economic narratives, they explore specific concepts by carefully selecting plot elements, characterization, and setting. In both writers' interviews on their choice of short stories for storytelling, Ted Chiang epitomizes the core of his story's themes by "jumping forward in time to significant moments" (qtd. in Yeh). At the same time, Ken Liu notes the possibilities for writers to forgo complex plots and "maintain narrative tension through other means" (qtd. in MO). The brevity of short stories also enables both writers to experiment with different styles to elaborate on their speculative thoughts. For Ted Chiang, it means the exploration

doi:10.6342/NTU202302702

of ideas by presenting “conceptual breakthroughs” and “paradigm shifts” (Yeh; Singh) that challenge normative thinking, ultimately aiming to evoke a “sense of wonder” (Yeh) in its readers through transformative ideas. On the other hand, Ken Liu emphasizes the profound impact of “storytelling” (Wang; Danis) to forge possible worlds and infuses his narratives with the techniques he calls “literalization of metaphor” (Tabler; Bai), making abstract concepts tangible for speculation. Furthermore, short stories allow both writers to quickly respond to the futuristic developments of the current age and participate in conversations on recent advancements. In Chiang’s case, he claims to embrace alignment with long traditions in science fiction that resorts to writing short stories forms (Murgia). Through this connection, Chiang’s writings can be interpreted as the “literature of ideas” (Barthell 56) associated with science-fiction, featuring the investigations of futuristic, thought-provoking concepts grounded in the scientific advancements and technological discoveries of their times. Ken Liu similarly speaks of short stories by noting a “sense of modernity” in his writing when portraying “the world we live in today” (qtd. in Kant). His visions are of speculative fiction “evoke shocking visions of the future through breakthrough innovations or revolutions” (qtd. in Wilk et al.). Hence, Chiang and Liu are frequently found publishing in various up-to-date magazines such as Uncanny Magazines, Locus Magazine, Omni Magazine, and The New York Magazine, to name a few. The immediacy of the topic discussed in both writers’ short stories often results in open-ended narratives, leaving certain aspects of their stories unresolved, inviting readers to fill the gaps and engage in their interpretations. These traits of short stories set Ted Chiang and Ken Liu apart from contemporary speculative novelists like Margaret Atwood, Octavia Butler, or Kazuo Ishiguro, who tend to employ more complex characterizations and plots in their speculative visions. This thesis explores in greater detail how both writers utilize

doi:10.6342/NTU202302702

the traits of short stories to speculate our confrontations with "nonhuman" entities and the different possibilities and reflections on engaging with their existence.

Literary Review: Scholarships on the "Nonhumans" in Chiang's and Liu's Fiction

When conducting an overview of the existing scholarly landscape on Ted Chiang's and Ken Liu's fiction, this thesis examines, in particular, bodies of research that address first, the theme of human confrontations with the "nonhuman" entities depicted in their stories and, secondly, discussions on their contributions and significance in the genre of speculative fiction or the mediums of short stories. Upon closer examination, it becomes evident that Asian American identity is integral in analyzing Ted Chiang and Ken Liu's works. Chiang's Taiwanese American background and Liu's Chinese American heritage play significance in this approach. In the context of "nonhumans," most existing studies often approach the subject from a humanist perspective, exploring how these entities shed light on the complexities of Asian versus Western identity and the process of reconciling cultural heritage with diaspora experiences.

In Ted Chiang's work, his Asian American experience is not overtly stated or directly addressed. However, many researchers have explored his writings concerning racial otherness, particularly in his most renowned work, "Story of Your Life." For instance, under techno-orientalism frameworks, Brett J. Esaki suggests that the story's presentation of humanity's conflict with the Alien "Other" is associated with the reduced Asian American cultural Other, oppressed through the Western colonial gaze. Matthias Klestil, likewise, regards the human-nonhuman encounters in "Story" and "Seventy-Two Letters" as a way Chiang challenges racialization, using narratology techniques such as temporal hybridity and epistemic storytelling. While Christopher Fan interprets encounter narratives by examining the lack of explicit association that Chiang has made with his Asian American cultures in his stories, regarding his writing as "melancholic

doi:10.6342/NTU202302702

transcendence" from racial forms, instead proposing the embrace of a "post-racial" mode of identification. On the contrary, Ken Liu is outspoken about his Asian American experience, and researchers have taken note of the unique and innovative way he incorporates his heritage into his fiction. Liu's creation of the "Silkpunk" genre blends Chinese elements with science fiction and has garnered significant interest and acclaim from critics. For instance, Yu Hang explores how the Asian-American identity is reconstructed in Liu's "The Paper Menagerie" from post-colonial perspectives. Meng Xia, on the other hand, examines how collective Asian American historical traumas and memories are mediated through virtual reality in several of Liu's stories. Joshua Xiang studied how Liu's fiction confronts the Western and non-Western dichotomy in which Asians are often identified as the "other" by discussing how Liu counters the Western superior concept of progress that often places non-Western culture on the opposing end of the spectrum. Yang Mu suggests that Liu's recognition of Chinese cosmologies, naturalism, and mysticism is significant in leading an alternative science fiction marked by heterogeneity.

In the 21st century, a profound shift in philosophical perspectives took place, giving rise to the emergence of posthumanism and new materialism. These novel approaches challenge the traditional human-centered worldview and instead emphasize the importance of considering and including nonhuman entities in our understanding of the world. As a result, recent scholarly works on authors like Ted Chiang and Ken Liu have been influenced by these philosophical frameworks. This thesis adopts the methodology of new materialism, which explores the entanglements and relationships between human and nonhuman elements. As such, the following existing literatures become relevant studies for this research.

doi:10.6342/NTU202302702

For Ted Chiang, recent approaches to the nonhuman others still surround "Story of Your Life." For instance, Wanqi Shang looks at how the interaction in "Story" is used to explore the posthumanism concept of "becoming of other." Shang asserts that the story dismantles the notion of human superiority, serving as a blueprint for a future where humans and technology can coexist. Jacob Glazier claims in his research that the alien encounter in "Story" is an apocalyptic reconstruction of existing human subjectivities and logic, with the story offering new solutions through discussions of representational thoughts and language. Bran Nicol highlights the role of translation in communication across planets and the influences of humanist values in its process. In addition, "The Great Silence," written from a parrot's perspective, has also been a widely discussed text for human-nonhuman communication. Anne McConnell points out the text's emphasis on human entanglements with animals, using Bruno Latour's approach in examining the need for animal representation. María Ferrández-Sanmiguel further proposes that the text calls for an ethic of affinity to bridge the human-nonhuman divide. Other than the extraterrestrial and animal, recent technological developments have also given more attention to Chiang's depictions of human relationships and AI in "The Lifecycle of Software Objects." Dario Grgurevic suggests that Chiang's text serves as a means to unveil the mysteries surrounding AIs and explores the potential challenges and mistakes that can occur in the interaction between two entities. Similarly, Stina Attebery acknowledges Chiang's efforts in presenting the viewpoints of digital lifeforms and its reflection on the themes of species endangerment and extinction. While James Hughes asserts that the story's technorealism offers a foundation for examining our engagements with technology agents, advocating a third-way perspective and bridging the gap between techno-pessimism and techno-optimism.

doi:10.6342/NTU202302702

Posthumanism discourse concerning Liu predominantly revolves mainly only around the exploration of human-technology relationships. Michelle N Huang draws the connections between Posthumanism and Asian American studies on science fiction through Liu and Chiang's work, claiming that posthumanism is a powerful tool to speak against robotic stereotypes and the present mutability of race under biotechnology. In the short stories from Liu's *The Paper Menagerie and Other Stories*, Jennifer Baker examines the collapsing distinction between technology and human and the use of technology to magnify humanity through the effects of algorithmic bias. Regarding the transhuman digital entities featured prominently in Liu's reflections on technology, Ben Berman Ghan explores Liu's ideas on becoming posthuman and the concept of digital post-humanity identity in *The Hidden Girls and Other Stories* with Donna Haraway's notion of the cyborg and Katherine Hayle's embodied cognition. As of the time of this research, the only other scholarly attention on nonhuman interaction that extends beyond the technological aspect is on Liu's concerns with ecological crises. Notably, Jarrel De Matas explores Liu's portrayal of the vulnerabilities experienced by islands and nonhuman inhabitants due to traumatic tourism.

This thesis aims to address two significant research gaps that revolve around the portrayal of multiple "nonhumans" in the writings of Ted Chiang and Ken Liu. The first gap lies in exploring the thematic interactions between humans and "nonhumans." While Chiang's works have been studied in the context of posthumanism, most research has focused on individual stories such as "Story of Your Life" and "Lifecycle of Software Objects." However, there needs to be more literature that connects the speculative implications present across Chiang's stories. In the case of Ken Liu, there is limited scholarly work exploring diverse "nonhuman" entities beyond the digitally-uploaded ones, not to mention a comprehensive framework for their examination. In addition,

doi:10.6342/NTU202302702

besides the discussions on Ken Liu's "Silkpunk" under Asian American studies, little attention is given to the unique writing style and genre of both Ted Chiang and Ken Liu. In light of these gaps, this thesis endeavors to fill these voids by shedding light on the speculative elements present in the works of Chiang and Liu. Through a comprehensive examination of their narratives, this thesis seeks to contribute by providing insights into the multifaceted interactions between humans and "nonhumans" in their stories.

Methodology and Chapter Design: Composing a "Common World" with Bruno Latour

The methodology used in this thesis is a close-reading analysis of Ted Chiang and Ken Liu's speculative short stories, focusing on human engagements with speculative "nonhumans" through the lens of Bruno Latour's theories of the "common world." Latour's notion of the "common world" is, put simply, a shared inhabited space founded on the complex networks of associations between nonhumans in the human. Such a world differs from our current understanding, as it emphasizes nonhuman actors as active participants in shaping collective reality, moving away from a solely human-centered viewpoint. The term "common" in Latour's framework signifies a shared existence that recognizes the interconnectedness and interdependence of all human and nonhuman beings. By employing the Latourian concept, this thesis wishes to draw attention to the speculative visions presented in both writers' stories and how they explore the possibilities of composing such a world where "nonhuman" entities play a significant role. To comprehend the full scope of Latour's "common world," this methodology section delves into the various sources of ideas that contribute to Latour's theories, tracing their origins across his body of work.

doi:10.6342/NTU202302702

Latour's vision of a "common world" presents an alternative to the dissatisfactions with current human-nonhuman interactions. Such discontent can be traced in Latour's challenging of the Modern separation between nature and culture, which Latour describes in detail in *We Have Never Been Modern* (1991). Instead, Latour proposes the mixtures of "nonhuman" and human entitles as "hybrid" productions, arguing that they are deeply intertwined with one another in networks of association. The vision is also tied to the politics of "nonhumans." In his *Politics of Nature* (2004), he argues that our current political system is paralyzed in their abilities to respond to our contemporary concerns and further proposes transcending the nature-society dichotomy and creating a "good common world" where humans and nonhumans convene, share responsibilities. In his work *Down to Earth* (2018), Latour further advocates for new earthly politics that challenge the prevailing capitalist profit-maximizing approach, which often leads to clashes between the global and the local in economic and ecological matters. By engaging in these efforts, Latour seeks to build a more inclusive approach to governance and decision-making, and his discontent with the current state of affairs also prompts him to speculate on who should speak for the nonhumans.

The "common world" vision is tied with the concept of conflicts insured by the dissolution of pre-established boundaries. Found in *War of Worlds* (2002) and notions such as "We Don't Seem to Live on the Same Planets" (2018), Latour explains that the process of finding a harmonious or unified world is accompanied by conflicts and controversies. However, rather than viewing these conflicts as obstacles, Latour suggests that they should be seen as a "middle ground." The "middle ground" is a term inspired by Richard White, where to Latour is a state where "all collectives are lost in the new world and grasping at any scrap of forms, laws, and institutions to figure out how to survive" (D.Milstein et al. 4) In these grounds, it opens up scenes for engaging in "diplomatic

doi:10.6342/NTU202302702

negotiations" ("Another" 306) Latour introduces the concept "diplomacy" as a way to navigate and mediate the diverse interests and perspectives involved in complex issues. The term appeared in *Politics of Nature* (2004) and *An Inquiry into Modes of Existence* (2013). He suggests that engaging in diplomacy allows for the construction of collective understandings and agreements between different actors and is essential for the common world as it involves the process of mediating and negotiating between different actors and interests. Hence, it is through the multiplication of these grounds that different entities find ways for "coexistence, if not always peacefully, without exterminating one another" ("Another" 306).

On these grounds, "Composition" is a crucial term for building a "common world." Latour provides an explanation for "compositionism" in his "An Attempt at a 'Compositionist Manifesto'" (2010). In the manifesto, he writes that Compositionism is the task of "searching for universality but without believing that this universality is already there, waiting to be unveiled and discovered" (474). Latour claims that it takes from universalism in building a "common world" but also relativism in understanding that such a world is founded on "heterogeneous" parts making up a whole. Furthermore, Latour emphasizes that the world is "reassembled piece by piece" (476), made up of a dynamic and ongoing process of continuous interactions and associations of diverse actors. Hence, the composition of a "common world" is a collaborative effort involving both human and nonhuman entities. This analysis locates the practice of acts of composition in various ideas proposed by Latour. This includes his proposals for the responsibilities and cares towards "nonhuman" others in his "Love Your Monsters," where he claims that compositionist narrative is essential in an "ever-increasing degree of intimacy with the new natures we are constantly creating" (23). It can also be found in association with his broader philosophical framework of Actor-Network Theory, which emphasizes the importance of

doi:10.6342/NTU202302702

understanding and acknowledging the agency of both human and nonhuman actors in shaping social reality.

Under these frameworks of Latour's "common world," I examine how Chiang and Liu's short stories portray both humans and "nonhumans" overcoming the grounds of conflict and working towards the compositions of the "common worlds." This thesis uses Latour's theory to interpret the speculative ideas in both writers' individual stories and as an overarching framework to examine how Chiang's and Liu's vision of their "common worlds" is "composed" by reorganizing the distinct speculative concepts spread across multiple writings. To explain, the short stories in the Ted Chiang and Ken Liu collections do not adhere to a specific organizational structure regarding the "nonhumans." This thesis intentionally reorganizes Ted Chiang and Ken Liu's short stories to capture changing perceptions and understanding of nonhuman entities through confrontations and conflicts effectively conveyed through their narrative strategies.

Chapter Two examines Ted Chiang's speculative short stories. Section 1 focuses on the introductions of robots in human lives in "Seventy-Two Letters" and "Dacey's Patent Automatic Nanny" and how alternative history is used to illustrate the dualistic traditions of human-nonhuman relationships. Section 2 turns to the engagement with digital lifeforms in "Lifecycle of Software Objects" and its examination of the complexities of AI in contrast to under consumeristic perspectives of society. Section 3 analyzes the encounter with extraterrestrial specie in "Story of Your Life" and how Chiang illuminates the understanding of the nonhuman in a human-centered world through the shift in perception and mindsets.

Chapter Three examined Ken Liu's speculative short stories. Section 1 discusses the implications of the Robots' and Artificial sentience's integration into human lives in "The Gods Will Not be Sained," "The Gods Will not be Chained," and "The Gods Have

doi:10.6342/NTU202302702

Not Died in Vain," and how it inflicts chaos and challenges. Section 2 analyzes the emergence of digitally-uploaded consciousness in human society in "Staying Behind" and "Altogether Elsewhere, Vast Herds of Reindeer" and their reflections on the human and nonhuman entities' interconnection with nature and the artificial realm. Section 3 examines "The Wave," "Cosmic Spring," and "An Advanced Readers' Picture Book of Comparative Cognition" and analyze how these stories present harmonious state where different entities live together in otherworldly realities.

By applying Latour's theories, this thesis does not wish to claim that both Chiang and Liu's work definitively follow the grander visions of Latour's philosophies. It should be acknowledged that both Ted Chiang and Ken Liu may have their own visions of what a "common world" is on their own terms. Not to mention, Latour's vision has its own limitations in addressing the speculative and non-existent group of subjects present in Liu and Chiang's work, and also Latour's use of the "common world" is intended for a new climatic regime associated with his broader idea on "Gaia." The goal of this methodology is to draw upon the insights of Latour's theories that emphasize active "nonhumans" participation in the human world as a guiding framework. It does so by identifying similar visions traced in Chiang and Liu's work and understanding the significance in both writers' depictions of the multiple ways to reconcile differences between entities to work towards a possible inclusive regime for coexistence between humans and "nonhumans."

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Chapter Two: Ted Chiang

Alternative Histories and the Human-Machine Divide: "Seventy-Two Letters" and "Dacey's Patent Automatic Nanny"

Ted Chiang's "Seventy-Two Letters" is centered around the creation of "automata," which are artificial machines created by humans through techniques called nomenclatures, enabling them to perform specific tasks based on the "name" they are given. On the other hand, "Dacey's Patent Automatic Nanny" tells a story of patent nannies created by a scientist Dacey and sold as a market product for rational childrearing. These two stories are both set in Victorian alternative histories, and this setting is significant in the explorations of human engagements with "nonhumans" by Chiang in accentuating the traditional human-exceptional worldviews of science and modernity.

The first story, "Seventy-Two," is narrated from the perspective of Stratton, a rational and analytical character working as a creator of the automata. Stratton embodies a mindset adopted by the Victorian man of his time, characterized by an interest in the relentless pursuit of scientific progressions and knowledge, as well as pride in achievements gained through colonial conquests. In the beginning, Chiang encapsulates the becoming of a Victorian everyman under the influences of Science and Modernism disciplines through significant events in the personal development of Stratton. This first instance is Stratton's as a young child playing with his dolls, where Stratton mimics automata science in the adult world by making different modifications doll's body, observing how many "variations" ("Seventy-Two" 180) he could introduce before the doll's identity could no longer be associated with its original name. Next instance is when Stratton's visits to British museums with his friend Lionel, Chiang describes memories of the displays of various imperial achievements, such as "frail mummies and immense sarcophagi; the stuffed platypus and pickled mermaid; the wall bristling with elephant

doi:10.6342/NTU202302702

tusks and moose antlers and unicorn horns" ("Seventy-Two" 181). These exhibitions symbolize the embraced scientific exploration and discovery for expanding and maintaining imperial dominance at the height of the British Empire during Victorian times. The third instance is Stratton's secret experiment involving tiny figures in his friend's yard. Similarly, through the "racks of vials, stoppered bottles of green glass, and assorted rocks and mineral specimens" ("Seventy-Two" 182), Chiang displays the concepts of specimen collections made possible through scientific pursuits. Lastly, Stratton's education at Cambridge's Trinity College marks his transformation into a full-fledged Victorian man. Stratton is exposed to the scientific principles of the nomenclature techniques in his acquisitions of knowledge ranging from "kabbalistic texts written centuries before" to modern techniques of nominal integration and factorization, and the latest revolutions in nomenclature and the nascent science of thermodynamics" ("Seventy-Two" 185). Stratton's ultimate journey at Coade Manufactory to produce automata marks his initiation into Victorian society, where practical applications of scientific principles and a sense of justifications for colonial conquests shaped their human-exceptional worldviews.

Chiang presents how these worldviews and beliefs shape human relationships with the automata through Stratton's work. Stratton is recruited by Dr. Ashbourne and Lord Fieldhurst for a project to find a name that enables automata to self-reproduce to extend the lifecycle of human generation, which is thought to be soon extinct. Governing the scientists' interactions with these "nonhumans" is the concept of "playing gods," which is the assumption of a higher power in attempts to control or manipulate technologies. The notion of human authority is foreshadowed in Stratton's doll-playing episode, symbolized by Stratton acting as the omnipotent, all-powerful creator in a miniature world that decides the fate of his toys. In Stratton's conversations with Dr.

doi:10.6342/NTU202302702

Ashbourne, the latter notes that mastering the expertise of such naming could "very well require the capabilities of God" ("Seventy-Two" 217), to which Dr. Ashbourne shows his ambitious considerations in the success of wielding such power. Similarly, in Stratton's discussions with the kabbalist visiting the factory, the latter also displays excitement in the ability to create beings that may bring humans "closer to God" ("Seventy-Two" 219). The desire to surpass human limitations and attain godlike prowess by creating and controlling automata starkly contrasts the restrictive narratives surrounding these creations. Within these narratives, the automata are depicted as confined to prescribed roles, exhibiting limited agency, and oppressed by human constraints. First, the characteristics of the automata, through Stratton's point of view, are subverted under the observations of artificial scientific equipment and terminologies. Whether it is through the "eyepiece of the microscope" (221), the "incubator" (220), or the "sephirotic diagram" (227), the automata were passively observed as "immobile and unresponsive to stimuli" (222). Furthermore, Stratton and his colleagues determined the automata's autonomy by the distinctive traits of human cognition- the power of speech. In their observations that "automata couldn't speak" ("Seventy-Two" 237) or "automata were intrinsically mute" ("Seventy-Two" 238), The inability to speak suggests a lack of agency and independence in these artificial beings. These instances further reinforce the theme of human control and dominance over these artificial beings due to their lack of perceived communication, a fundamental aspect of human interaction and expression.

Similarly, the second story, "Dacey's Patent Automatic Nanny," introduces a similar perspective of machines under human rationality and superiority in creation set in an alternative historical version of London in 1861. The story centers on Reginald Dacey, a mathematician, and his development of caretaking nanny machines. The narrative style of Dacey likewise demonstrates a conventional Victorian perception that engages reality

doi:10.6342/NTU202302702

strictly, adhering to scientific objectivity and factual reporting. Such narrative frames Dacey's initial endeavors to build a teaching engine, which he finds inspiration in scientific innovations such as the gramophone technology, as well as the arithmetic mill proposed by "Charles Babbage in his Analytical Engine" ("Dacey's" 173). This influence from science is further adopted in his creation of the automatic nanny. When conducting research on the subject of childrearing, a practice often associated with emotions, Chiang emphasizes Dacey's approach from objective grounds in the development of a product based on "rational childrearing" ("Dacey's" 175). That is, Dacey relies on empirical observations and analysis to form his beliefs about the effectiveness of different parenting methods instead of relying solely on conventional wisdom or personal anecdotes. Instead, Chiang demonstrates Dacey's propensity for applying mathematical concepts and principles to understand complex systems. For instance, he views a child's emotional state as an example of a "system in unstable equilibrium" ("Dacey's" 174). In telling the making of the nannies, he shows detailed observations of the technical aspects of the machine, such as the "inverted pendulum, prone to oscillations of ever-increasing magnitude." ("Dacey's" 174). Dacey's insistence that the nanny must closely "follow his guidelines" ("Dacey's" 175) reflects a scientific mentality that seeks predictability and control in caretaking methods. Eventually, in Dacey's advertisements of his nanny, he once again encourages individuals to adopt a "modern practice of scientific childrearing" ("Dacey's" 176) by purchasing his creations.

The automatic nannies in "Dacey's" are similarly silenced figures akin to the one depicted in "Seventy-Two," buried under the perceptions of consumerism and the fetishization of objects through their exhibition. The characteristics of the automatic nanny are introduced through various advertisements. For instance, Chiang writes that "[t]he Automatic Nanny went on sale in March 1901, with [...] advertisement appearing

doi:10.6342/NTU202302702

in the Illustrated London News" ("Dacey's" 176). The readers learn of the capabilities of the automatic nannies through Dacey's advertisements highlighting the benefits of possessing such a nanny. For instance, its ability to teach babies to follow a strict schedule or soothes babies without pacifiers, and its advantages in working long without breaks and not exposing the babies to negative influences. ("Dacey's" 177). The nanny is also shaped by testimonials featured in the advertisements promoting sales, from the parents' perspectives judged from the nanny's utilities in providing satisfying "quality of care" or "immeasurable improvements" ("Dacey's" 178). Hence, the perceptions of the nannies are shaped by the aspects of market values and commodification, which play a significant role in influencing how they are viewed and utilized.

The consequent narratives on the development of the automatic nanny take on the structure of cataloging traits that further implicates the commodifying and categorizing of "nonhumans." When the success of the automatic nannies is met with a downfall due to a fatal incident involving an infant, Chiang turns to narrate time that follows through quick snapshots of historical moments similar to systematically organizing records of events paralleling an archive or database used to examine anthological artifact in museum exhibitions. These series of events encompass the failure of the nanny in 1901, the death of creator Dacey in 1918, the reintroduction of the nanny for commercial sale in 1927 by his son Lionel Dacey, Lionel's adoption of an infant in 1932, and finally, in 1938, the revelation that Edmund Dacey, the infant, had been raised successfully with the assistance of an automatic nanny. Such a cataloging narrative reflects a view of "nonhumans" grounded in Victorians' interest in organizing and categorizing knowledge, culture, and artifacts in various exhibitions and museums. Much like the personal developments of Stratton in "Seventy-Two," "Dacey's" show similar attention to the scientific display of objects or artifacts. The introductory quotations Chiang deliberately added to the story -

doi:10.6342/NTU202302702

"Catalogue Accompanying the Little Defective Adults" ("Dacey's" 173) – provide hints to such narrative structure and its impact.

Through the narratives of both "Seventy-Two" and "Dacey's," Chiang presents a distinct human-nonhuman divide where the "nonhuman" agencies involved are not given voices for representation. However, in both stories, Chiang provides possible ways of looking at the "nonhuman" entities where "nonhuman" actors have a chance to play active roles in shaping and constructing knowledge and reality. In the story "Seventy-Two," Ted Chiang explores the concept of the "creative power of language" (Chiang, "Story Notes" 328), which he identifies as central to the narrative. One interpretation of this concept is seen through the "name" or seventy-two letters that characters use to animate automata. Chiang draws inspiration from Jewish folklore's nomenclature, which uses names to animate golems, traditionally depicted as mindless, obedient servants controlled by humans. This comparison between the automata and golems is evident throughout the conversations between Stratton and his colleagues, highlighting their perceptions of the automata as a subservient role. However, Chiang takes the implications of the "name" further, revealing its mutable nature and potential to facilitate automata's self-reproduction. At the end of the story, Stratton makes a profound realization in his project of new possibilities for automata's self-reproduction. That is, instead of the "tiny analogue" that would create another physical offspring through fetuses, they should be looking for "lexical representation" ("Seventy" 238) that could be duplicated through automata, essentially passing down representation in language or code that could be transcribed automatically by themselves. This discovery prompts a shift away from traditional biological methods of reproduction to a language-based approach that only automata can achieve. It also suggests that the automata are not fixed or static but evolving and adaptive, like the animate process of learning a new language and discovering its rules and patterns.

doi:10.6342/NTU202302702

Ultimately Stratton realizes the significance of this discovery and envisions a future where automata's reproduction controls the survival of the human species. He posits that "humanity would become a vehicle for the name as well as a product of it" ("Seventy" 238). This statement foreshadows a power dynamic shift between the human and automata with the system of lexical presentations where automata would play a crucial role in shaping the trajectory of the human species. In this sense, the automata demonstrate capabilities to enunciate their presence through the evolving names for reproduction. Stratton's discovery shows that automata should not be considered passive tools, as portrayed from Stratton and his colleagues' perspectives. The "name" showcases all along that the automata can potentially be active participants in the human network in its alternative ways of communication.

Similarly, in "Dacey's," Edmund Dacey, Lionel Dacey's son, is the catalyst for Chiang's imposed question of the lack of perceived impact of machines within the observations of human reality. When Lionel decided to remove the long-term care from the nanny that had been provided for Edmund since his birth, Edmund exhibited, as a result, a lack of responsiveness to human beings. This behavior led physicians to diagnose him as "feeble-minded" ("Dacey's" 180), believing that the child displayed inherent intellectual disabilities or cognitive impairments caused by the automatic nanny. However, when Lionel sends Edmund to an institute for rehabilitation, the staff eventually realizes that boy's illness stems not from the time he spent under the care of the automatic nanny but can be attributed to the outcomes of being deprived of the automatic nanny's presence. In other words, Edmund has become "a child wedded so much in a machine that he could not acknowledge another human being" ("Dacey's" 183). Edmund's experience suggests that the technology-subject nanny has become such an integral part of the child's life that it dominates their interactions and experiences, leaving little room

doi:10.6342/NTU202302702

for meaningful human connections. Such impact is further displayed in the change in Edmund's modes of communication when the nurses discovered that Edmund responded more actively to their voices when they spoke indirectly to him through "an intercom system that emulated the low-fidelity audio of the original Automatic Nanny gramophone" ("Dacey's" 183). As a result, the story ends with a provocative understanding that the judgments of physicists through their scientism and rational-based conclusions were insufficient in addressing the hybridity of technology and human, which Edmund has become. Acknowledging that it is humans that "lacked the appropriate means of communicating" ("Dacey's" 183) with the "nonhumans" has enabled success in two-sided communication and the proper treatment of his situation. Chiang's open-ended speculation highlights the underestimated influence of automatic nannies within the surface-level portrayal of human narratives driven by consumerism and scientific creation.

The endings of "Seventy-Two" and "Dacey's Patent Automatic Nanny" offer counter-narratives to the dominant human-centered perspectives that shape the stories. In both narratives, the developments involving the "nonhuman" entities challenge the traditional portrayal of silent and passive beings in human-centric views, reminiscent of the Victorian era's focus on scientific progress and imperial conquest. By granting the "nonhumans" possibilities of agencies in language, Chiang exposes the limitations of human perceptions. While the full extent of their agency remains elusive, Chiang's stories leave readers contemplating the vastness of the unseen and the potential for deeper connections with entities beneath human observation.

Product Life Cycle and The Power of Care: "Lifecycle of Software Objects"

"The Lifecycle of Software Objects" demonstrate Chiang's attitudes on human-"nonhumans" relationships through the story of "digients," or AI pets, created by companies for the entertainment of human beings. The story follows the production and

doi:10.6342/NTU202302702

decline of the digients and the ethical implication of their existence in human society after they have faded from popularity in the market. In particular, Chiang states in an interview that the main objective of his story is to address "a long-standing dissatisfaction [of AI] as a very useful butler, an idealized servant who does whatever you want and is hyper-competent but servile" (Grossman). This thesis examines how Chiang demonstrates the complexities of AI and proposes alternative ways to approach these entities through the story.

In the characterizations of the digients in "Lifecycle," the virtual "nonhumans" mirror Earth's rich biodiversity, serving as a striking contrast to the capitalist business model under which it was created. In the setting, the vast and immersive virtual ecosystem parallels is depicted as a miniature Earth. The digients' world is known as Data Earth, where the digients are nurtured and trained by their human caretakers. The online world is described by the protagonist as follows a virtual world that serves as a "global village" in which a whole new category of these "nonhuman" entities are "woven" ("Lifecycle" 75) into human lives. Data Earth holds distinct gaming regions that are substantial and expansive akin to real-world, which the narrators called "gaming continents" (Lifecycle" 63). In terms of characterization, the name digients is a possible blend of "digital" and "sentients," highlighting their status as digital beings with a level of sentience or consciousness. Next, in referring to the digients as "digital organisms" ("Lifecycle" 64), it hints that each digient may exhibit lifelike behaviors, adaptability, and evolutionary processes similar to living organisms in the natural world. Throughout the story, Chiang introduces a diverse model of digients that populate the virtual world, each possessing their own distinct characteristics modeled on various nonhuman biodiversity in or imagined by our world. For instance, the digients created by Blue Gamma named Jax resembles a dinosaur, Marco and Pollo look like small panda bear and raccoons, Erica

doi:10.6342/NTU202302702

resembles a bird-like humanoid, Titan in the form of a gorilla humanoid, and Carl of canine-like digient similar to a dog, or fox. Various digients are also created by competing companies, each with a niche. For example, the companies Origami and Faberge expand the digients into various avatar forms, including mythical creatures such as baby dragons and gryphons. Also, Neuroblast introduced species called Xenotherians, who have established their own private continent called Data Mars while possessing their own artificial language called Lobjan. Additionally, there is mention of a new genomic engine called Sophonce, with the ability to study for extended periods and has the potential to become valuable workers within a short time frame. These portrayals highlight the diverse array of species within the virtual realm and the complexities of their life forms which mirrors Earth's natural ecosystems.

Despite their vibrancy and complexity, the digients' world is paradoxically controlled and limited by the human-centered capitalist ventures that brought them into existence. The story explores how the digients are created as a commercial venture, with the goal of making a profit for their human creators. As a result, the digients' growth and development are constrained by the economic interests of their human owners. The narrative of "Lifecycle" is cleverly structured to strategically align with the concept of a business product lifecycle, thereby reflecting the essence of its own title. The product lifecycle model is a theoretical framework that describes the stages of a product, from its introduction and growth to eventual decline and discontinuation in the market. Chiang divides the "Lifecycle" into ten sections. Section 1 and 2 describes when Blue Gamma anticipates launching digients among its potential buyers to the product growth when the company experiences rapid sales growth and tremendous success within the first year of their release. The third stage of maturity is also depicted with the entries of competitors to the market, such as the "Next Dimension" or "Anywhere" platform, and Blue Gamma's

doi:10.6342/NTU202302702

investments in product improvements, such as the creation of mascots and day-care centers or charging customers for digients' food, to capture a larger market share. Eventually, Section 3 describes when the product enters a stage of decline in sales when the outlooks of Blue Gamma changes from "sunny to decidedly cloudy" ("Lifecycle" 88). The insufficient number of customers willing to adopt the "perpetually docile digients" ("Lifecycle" 81) leads to the ultimate demise of Blue Gamma's business. The digients grow and develop and form complex relationships and emotions, resembling the maturity and complexity that products gain over time as they become more sophisticated than before. However, just like products in the business world, the digients face obsolescence and abandonment as the market for the virtual world changes and new technologies emerge. These digients are left behind, like products that become outdated or replaced by newer developments.

"Lifecycle" portrays the ongoing tension between the lives of the digients and the capitalist values upheld by their creators. Chiang dedicates a substantial portion of the narrative from Sections 4-10 to explore the subsequent consequences on the digients following the company's decline. This deliberate focus on the aftermath highlights the writer's emphasis on the long-term consequences of the digients' existence beyond the initial stages of their creation. Chiang demonstrates earlier on the lives of the digients are intricately tied to corporate values whose primary goal is to maximize their revenue by catering to human needs and preferences. For instance, this is evident when the Blue Gamma representative prioritizes the financial and logistical aspects of operating in the physical realm ("Lifecycle" 83) over the potential benefits it may bring to human-digient interactions. The same profit-driven mentality and lack of investment in digients are also observed in other companies. When the protagonists approach these companies seeking assistance to improve the lives of digients after Blue Gamma's decline, they encounter

doi:10.6342/NTU202302702

similar dismissive attitudes towards artificial intelligence. The reluctance to invest in digients stems from the perception that they are "dead-end proof that embodied AI is useless for anything beyond entertainment" ("Lifecycle" 109). Towards the climax of "Lifecycle of Software Objects," the tension escalates as the protagonists make desperate attempts to secure the future of DataEarth for the digients. They approach potential investors, including VirlFridal, Talbot, and Polytope, hoping to gain support and resources for the digients' well-being and development. However, the investors are primarily concerned with profitability and reject them for the perceived lack of practicality, for instance, to replace "conventional software" ("Lifecycle" 135) or bring concrete gains to their corporate interest. Similarly, on the customer-demand end, digients are treated as mere products to past time or fads rather than sentient beings deserving of respect and care. For instance, the majority of consumers only wanted obedient digients with personalities that would not "frustrate" them, equipped with the "ability to play well with others" ("Lifecycle" 72), and adoptions for abandoned digients often don't last long ("Lifecycle" 88) when they have lost interest in the virtual pets.

These artificial intelligences find themselves in a precarious position with the inability to speak for themselves and advocate for their rights and interests when the company's decline leads to significant changes in their virtual ecosystem. As the story progresses, DataEarth's once vibrant and expansive topography begins to crumble, mirroring consumers' and corporations' diminishing interest and indifference. The topography of DataEarth erodes, and Ana observes that "one by one its virtual landmasses disappear like real islands, banishing beneath a rising tide of consumer indifference" ("Lifecycle" 109). Eventually, DataEarth descends into "a ghost town the size of a planet" ("Lifecycle" 127), further underscoring the isolation and bleakness of the digital world has become. Interestingly, Chiang's portrayal of DataEarth's virtual ecosystem is

doi:10.6342/NTU202302702

reminiscent of natural habitats, drawing parallels to the ecological concerns faced by real-world environments. The deserted landscape in the virtual system reflects the consequences of human decisions and actions, echoing the fate of islands and ecologies affected by human negligence and disregard for responsibilities. Through this analogy, Chiang prompts us to consider the treatment of artificial intelligence and the potential consequences of neglecting their welfare. The digients, like nature, are at the mercy of profit-driven companies and human caretakers. They depend on individuals like Ana and Derek to represent their needs and desires, making them susceptible to decisions made on their behalf. The digients' struggle to find agency and autonomy in a human-centric world raises important questions about our responsibilities as creators and caretakers of intelligent beings.

The protagonists, Ana Alverado and Derek Brooks stand as forces against the dominating capitalistic narrative structure that governs the "Lifecycle." They offer distinct perspectives shaped by their former zookeeper and software designer roles, respectively. Derek, being a software designer, allows him to understand the intricacies of the digients' programming and design through algorithms and coding. Hence, Derek experiences surprising moments when the digient unexpectantly surpasses the written characteristics of their initial programming. This transformation is seen when Marco and Polo get into a heated argument over a memory. Derek observes that, although digients reside within simple bodies, "their minds are continuously edging into new regions" ("Lifecycle" 107). This statement implies that digients go through mood variations and evolve in personalities and that digients have the capacity to expand their cognitive boundaries. As time progresses, Derek notes that the digients gradual evolution grant them a level of competence that enables them to integrate with humans in the real world seamlessly. The digients initiate social interactions with humans in various online

doi:10.6342/NTU202302702

communities where, interestingly, the adolescents who dominate these communities show no concern about the digients' nonhuman nature. Instead, they treat the digients simply on equal terms as "another kind of online friend they are unlikely to meet in person" ("Lifecycle" 124). Another significant point is when Derek finds himself perplexed by Marco and Pollo when they express a desire to be "incorporated" ("Lifecycle" 121), or become a legal person with legal capacities to own property, enter into contracts and initiate legal actions. This discussion on the ethical participation of the digients in human life, potentially gaining its place in politics, ultimately culminates in Marco's consequential decision to become a sex robot by signing a contract with Binary Desires to save DataEarth. However, in Marco's final decision, Derek described that he "seems entirely comfortable thinking of himself as a digient rather than a human" ("Lifecycle" 168). The passage highlights the significant transformation of the digients as they evolve from mere programmed pets designed to serve human needs into distinct and autonomous beings. Through their personality development and increasing capacities to engage in social and political aspects of human life, they emerge as subjects with individual qualities. Through Derek, Chiang raises questions on whether they should be treated as independent entities deserving of respect and consideration rather than subject to their human creators ' whims.

As a former zookeeper entrusted with training the digients at Blue Gamma, Ana offers a biological perspective on artificial creatures through comparisons with animal behaviors. Through her observations, she realizes that the digients cannot be easily categorized as mere reflections of their origins or imitations of humans and animals. Instead, they exhibit behaviors and characteristics that defy traditional classifications, existing as distinct entities in their own right. At the beginning of the story, Ana observes Derek's efforts to design "hybrid faces" ("Lifecycle 68) for the digients, aiming to create visually appealing and relatable beings that elicit positive emotions from humans without

doi:10.6342/NTU202302702

crossing into the uncanny valley. However, as the digients mature, Ana realizes that their hybrid nature surpasses their physical appearance. Despite their visual resemblance to animals, the digients do not exhibit typical animalistic behaviors. This realization leads Ana to question the appropriateness of "dressing them in circus costumes when we try to make them look like monkeys or pandas" ("Lifecycle" 69). In reality, they are more than just imitations of animals. As Ana's understanding of the digients evolves along with Derek's, she realizes that "the digients aren't animals any more than they're traditional robots," she asks herself, "Who's to say that either analogy is more accurate than the other" ("Lifecycle" 70)? Ana's growing understanding of the digients challenges the notion that they can be neatly fitted into human preconceived categorizations of their identity. This change echoes the question Derek faced at Marco's final transformation, where both grappled with the realization that the digients' identity has transcended human understanding, leaving them pondering whether they are the initial sophisticated machines or something entirely new and unprecedented.

Through Ana, Chiang also provides a possible approach to coexistence with these digients in a "common world" – Care. In an interview, Chiang emphasizes that in literature, there are few stories where "characters put an artificial intelligence's needs ahead of their own" (qtd. in Singh). He argues that a fundamental difference can be observed in the nature of caring for children or pets compared to caring for technological objects like AI or cars. "Lifecycle" demonstrates the differences in attitude in the conversations between Robyn and Ana. Robyn, representing conventional human thinking, says to Ana during her pregnancy, "Cats, dogs, digients, they're all just substitutes for what we're supposed to be caring for. Eventually, you start to understand what a baby means, what it really means, and everything changes. And then you realize that all the feelings you had before weren't" ("Lifecycle" 93). Robyn's word shows

doi:10.6342/NTU202302702

prioritizing the feelings of caring for babies over those of nonhuman, reinforcing that the bond between humans and their babies is perhaps even more profound and meaningful. Ana further disagrees with Robyn's claims that the "love for animals must arise out of sublimated childrearing urge." Instead, she shifts in perception in her realization that "Caring for animals is worthwhile in and of itself, [...] She wouldn't have said the same about digients when she started at Blue Gamma, but now she realizes it might be true for them" ("Lifecycle" 94). Ana acknowledges that caring for animals is inherently valuable and meaningful in the passage, but she realizes the same is true for the digients. Ana has come to appreciate the significance of providing care and support to digients as a meaningful endeavor in its own right, paralleling the intrinsic value attributed to caring for animals.

The Care that Chiang advocates in "Lifecycle" is the consideration where a relationship is "not exclusively about you and your needs; sometimes, the other party's needs come first" (qtd. in Singh). This notion is similar to Latour's argument in his "Love Your Monsters." Latour talks about the importance of caring as a human creator:

> "It is not the case that we have failed to care for Creation, but that we have failed to care for our technological creations. [...] Our sin is not that we created technologies but that we failed to love and care for them. It is as if we decided that we were unable to follow through with the education of our children" (Latour, "Love" 20).

By drawing a parallel to children's education, Latour implies that just as we have a responsibility to nurture and guide the growth of our children, we also have a similar responsibility towards our technological creations. The lifecycle product model in which the story of digients is narrated simplifies the timescale involved in raising a person, animal, or digent. The rapidly evolving technology industry fosters a culture of

doi:10.6342/NTU202302702

disposability and detachment. However, Chiang tries to demonstrate the investments and responsibilities required for raising a digient akin to "the projects of raising a pet or raising a child or any sort of long-term emotional relationship" (qtd. in Yeh). Ana's observations of "the difference that affection can make in the training process" ("Lifecycle" 165) of the digients shows highlight the importance of genuine care and concern for others. Hence, Chiang emphasizes the transformative power of caring for others, even in a technological context, and recognizes empathy and compassion in forming authentic and meaningful relationships.

At the end of the story, Ana envisions a future in which digients, including her own digient Jax, coexist with humans in a harmonious and integrated manner:

> "[She] Imagines him incorporated, a legal person, employed and earning a living. [She] Imagines him as a participant in the digient subculture, a community with enough money and skills to port itself to new platforms when the need arises. [She] Imagines him accepted by a generation of humans who have grown up with digients and view them as potential relationship partners in a way that members of her generation will never be able to. [She] Imagines him loving and being loved, arguing and compromising. [She] Imagines him making sacrifices, some hard and some made easy because they're for a person he truly cares about" ("Lifecycle" 172).

The passage portrays a hopeful future where digients and humans coexist as equals, sharing relationships, experiences, and societal acceptance. It presents a vision of a future where the boundaries between humans and digients blur, potentially leading to a more inclusive and interconnected society.

doi:10.6342/NTU202302702

In “Story of Your Life,” the narrative is centered around the encounters between humans and extraterrestrial intelligence who arrive on Earth. The protagonist, Louise Banks, is tasked with the mission of deciphering alien languages and bridging the communication gap between the two species. As she delves into the heptapods’ language, Louise undergoes a profound transformation in her perceptions and gains insight into their unique worldviews. Chiang juxtaposes the vast, mysterious world of the “nonhuman” heptapods with the structured and rigid human world. Through Louise’s interactions with the heptapods, Chiang explores the possibilities when humans rethink their ways of engaging with the “nonhuman.”

The extraterrestrial species in “Story,” known as “heptapod,” are represented by two representational subjects named Flapper and Raspberry. In its characterization, Chiang presents an immensely advanced and enigmatic “nonhuman” inaccessible to human realms of knowledge. Physically, the heptapods are of resemblance to an octopus. As its name suggests, the species are described as squid-like creatures with seven limbs or tentacles, and their bodies resembling “barrel suspended at the intersection of seven limbs.” Banks notes the symmetricalness of the heptapods, where “any of its limbs could serve as an arm or leg” (“Story” 124). She also notes fluidity in the heptapod’s limbs, as she describes the heptapods to “conspire to move it in a disconcertingly fluid manner” (“Story” 124). Language-wise, the language of the heptapods constructed by Chiang compose of heptapod A and heptapod B, where A is the written language, and B is the spoken language. Heptapod A is not linearly sequential like human writing or speaking but instead exists simultaneously in a complex, nonlinear structure, allowing them to perceive time differently, experiencing past, present, and future as interconnected and simultaneous. Similarly, heptapod B involves complex vocalizations and physical gestures, allowing the heptapods to communicate more profoundly than human language. According to

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Banks, the heptapods' language is of a "performative" nature, characterized by its ability to actualize midair. Banks describes such characteristics as "Instead of using language to inform, they used language to actualize" ("Story" 124). That is, instead of using language solely to convey information or express thoughts, the heptapods utilize their unique language as a tool for actualization or bringing about a specific outcome. The characterization of the heptapods, both in their physicality and language, positions them in a realm beyond generalizations. Their enigmatic powers and abstractions challenge human apprehensions governed by "common sense."

Contrasting to the fluidity of the heptapods, "Story" portrays the limitations of two-way understanding, where both humans and heptapods may never be able to fully cross the divide due to inherent differences. For instance, Louise voices this difficulty in her observations that "establishing communications is going to be really difficult because of the differences in anatomy" ("Story" 120). Not only in a physical sense, but more so it is the worldviews of the human that imposed such limitations: "My mind was cast in the mold of human, sequential languages, and no amount of immersion in the alien language can completely reshape it. My worldview is an amalgam of human and heptapod" ("Story" 173). Due to this difficulty, the heptapods' performative language, with its richness of entanglements, nonlinearities, and interconnectedness, is always lost in its translations. Hence, in Louise's observations, their languages are reduced to "brief fluttering sound" or physical moments where the sounds where the "puckered orifice at the top of its body vibrate" ("Story" 125). Furthermore, Chiang prevalently uses the imagery of "looking" as a metaphorical communication barrier between the human protagonists and the "non-human" lifeforms. For example, the aliens were described as coming in a device name "looking glasses" ("Story" 123). The glass presents heptapods with their boundaries against the human. On the other hand, humans interpreted the heptapods through the use

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of instruments such as digital cameras and large video screens, also visual technologies such as line drawings, photos, and animations to capture the essence of the heptapods. On both sides, Chiang highlights the reliance and restrictions between the two species, where actors can only engage in ongoing interactions and establish connections from which they are situated. Therefore, these cases demonstrate the many inherent divides that are difficult to cross.

To understand the significance of the interactions depicted in Chiang's story, we can refer to Latour's Actor-Network Theory (ANT). In simple terms, according to Latour's ANT, the heptapods and humans are involved in an interactive process where both "nonhumans" and humans participate in a network of associations. ANT, as summarized by Kevin P. Donovan, involves the process where "(a) action is mediated by nonhumans." Furthermore, "(b) all mediation involves a translation, agency must be understood as distributed" (Donovan 10). In the story, the heptapod actors actively shape human behavior and interactions within a network. However, a discrepancy exists in understanding the heptapods' language and representation, as encounters between different entities come with inevitable changes and loss of meaning. Humans and heptapods engage in mediation, and constant negotiation and reinterpretation of intentions occur as they interact and attempt to bridge the gap between their different modes of existence. Chiang presents how the human protagonists translate the differences, which according to Latour, is "the only way to increase a project's reality is to compromise" (Latour qtd. in Donovan 4). In this analysis of "Story," I show how Chiang depicts humans in different paradigms, using familiar human means to bridge the gap and make compromises in their efforts to understand the heptapods through distinct interpretations of their intentions. The story presents various representational modes of approach, embodied by Colonel Weber in the military paradigm, Gary in the physics paradigm, and Louise in the linguistics

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paradigm, each attempting to comprehend the heptapods through what Latour calls "the creation of a link that did not exist before and that to some degree modifies two elements or agents" (Latour, "Technical" 32).

The first paradigm introduced in "Story" is the Military paradigm, which acts as an opposing system to the fluidity represented by the aliens. Colonel Weber, assigned by the US State Department, symbolizes the rigidity and oppressiveness of the Military. At the story's beginning, we see the Military's initial attitude towards the heptapods as distrust and disinterest. Colonel Weber is reluctant to share details about the aliens besides their sound recordings and focuses only on perceived threats they may pose. As the story progresses, Chiang reveals the hierarchical nature of the militarized system, under which humans attempt to subvert not only the heptapods but also the human population under their organized control. For example, the human protagonists find their activities subjected to extensive scrutiny and review by military intelligence ("Story" 123), with their requests requiring authorization from military authorities ("Story" 129). This is also evident in their response to the heptapod by "planning for an invasion, or perhaps an evacuation" ("Story" 128), where the Military shows discomfort at the possibilities of the heptapods challenging their power hierarchy, reflecting a fear in the destabilization of their superiority. The Military shows a desire for control and dominance in the face of the unknown, and Chiang's descriptions of the Military also align with a broader Political "zero-sum game" ("Story" 159) perspective where power over "nonhumans" is the primary goal. This vision of seeking gains is demonstrated in Colonel Weber's inquisitions to Louise, commanding her to look for anything that might help them gain a more advantageous position against the heptapods ("Story" 160). The Military paradigms hold clear objectives against the threats of the "nonhumans," and tension can occur when protagonists seek to work outside their preconceived knowledge of reality.

doi:10.6342/NTU202302702

The successive paradigms alongside the Military are Linguistics and Physics, represented by Louise and her partner Gary. These approaches emphasize the accumulation of scientific practices and empirical observations based on rational reasoning. Unlike the Military paradigm that places human interests first, these scientific approaches prioritize the search for common grounds with "nonhumans." First, Louise's Linguistics paradigm centers on unraveling the nuance of the language structure of the heptapods with references from pre-established knowledge of human ways of speech. In many instances, Louise compares the heptapod's written language to existing human forms, such as the Arabic alphabet or calligraphies ("Story" 153). She further attempts to locate corresponding patterns in their language structures to the humans. Building on these similarities, Louise is able to infer the differences between humans and heptapods, making statements such as "they think our form of writing is redundant" ("Story 139). Second, Gary's Physics paradigm seeks to understand the heptapods through the differences in comprehension of mathematical models and scientific principles. For example, when Gary mentions the Fermat Principles in "Story," Gary first explains the human approaches to the physical law, which "preferred to work with them in their causal formulation" ("Story" 161). This observation is followed by the differences in the heptapods, where "the physical attributes that the heptapods found intuitive, [...] were meaningful only over a period of time" ("Story" 161). By logical reasoning, Gary is able to arrive at conclusions built on comparisons which enable possibilities of understanding the aliens. This is shown, for example, when he observes that their "version of the calculus of variation is simpler to them than their equivalent of algebra, that might explain why we've had so much trouble talking about physics" ("Story" 148). These two paradigms are intertwined narratives where Gary and Louise work together, sharing their empirical knowledge to complement the knowledge of their fragmented perspectives to understand the heptapods. Their symbolic

doi:10.6342/NTU202302702

marriage in the story further demonstrates the unions of different paradigms of human sciences in their various situated approaches to deciphering the "nonhumans." Chiang demonstrates that these assemblages of distinct parts of science help construct a holistic picture of the unknown "nonhuman" other.

While these paradigms are helpful in their advances toward communications with "nonhumans," Chiang has deliberately only shown Louise as the critical character that can break free from the rigid perspectives of humans for meaningful communication with the heptapods. A question to ask about "Story" is why Louise, not Gary or Colonel Weber? What possible intention lies in Chiang's emphasis on language as a fundamental way to respond to misunderstandings or conflicts in human- "nonhuman" relationships? An interpretation can be offered by interpreting Chiang's possible association with language learning presented in the story. In "Story," language is the closest reflection of an entity's thoughts. Louise pays attention to the minute details of their speech, such as intransitive verbs, transitive verbs, noun verbs, logographs, and so on. Her approach is the curiosity to learn without the projection of human perspectives. Through these studies, Louise acknowledges the need to unlearn the human ways of thinking, to "learn the rules of their script before we can write anything legible" ("Story" 134). That is the significance of abandoning human perspectives. More importantly, Louise eventually shows she understands the limits of humans and the vastness of the heptapods rather than maintaining her grounds in the human. "No one could lay out such an intricate design at the speed needed for holding a conversation. At least no human could" ("Story" 153). It is her adamant consistency and patience to communicate genuinely with the Heptapods that allows her success, where she "practiced Heptapod B at every opportunity" ("Story" 157) and reminds Colonel Weber that "Patience is a virtue" ("Story" 139) to decipher the heptapods. To conclude, through Louise's language learning, Chiang proposes a possible

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communication method by listening closely to the "nonhumans." Hence, this is not to say that the Linguistic paradigm is superior to all others in our connections with the nonhuman. Instead, it can be inferred that, through the careful studies of Louise, learning to think like them by listening is the closest we can get to ever being able to communicate with them despite the physical barriers between both entities.

Louise plays a reconciliatory role of a diplomat in the exchange between the heptapods and human beings. Diplomacy plays a significant role in "Story" as diplomacy enables the cooperation between states to respond to the Heptapod as a human race. However, her role contrasts the diplomatic representatives of the Military and Political paradigms. In an episode, the State Department sends a representative, Hossner, for a briefing on their agendas with the protagonists. The diplomat in their discussions emphasizes that on the exchange by claiming that the heptapods must have motives, with an intent to know what the heptapods require of the humans by asking, "Are they prospectors? Anthropologists? Missionaries?" ("Story" 159) Hosier further says, "If we handle ourselves correctly, both we and the heptapods can come out winners" ("Story" 159). These diplomats of the States show the interactions that are clinging to the local ontology of human perspectives and motivation, and Chiang presents Louise differently. Referring to Latour, a diplomat "isn't the one who pacifies, but he's the one that doubts values, including the values of the people who sent him there in the first place" (Latour qtd. in "Bruno"). He further highlights that a diplomat "goes to the negotiation in an attempt to save something of this idea of a shared world," by adding "multiplicities" or attempts to "multiply the hiatuses" (Latour qtd. in "Bruno"). To explain, Louise is a diplomat in the Latourian sense because she realizes that there is no common language or universality with the heptapods. Instead, she knows that they came not for the diplomats' claims of motives but for communication, for understanding. Ultimately, she knows that the inherent fluid of their

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essence where "[t]he heptapods are neither free nor bound as we understand those concepts; they don't act according to their will, nor are they helpless automations" ("Story" 169), and without a need for subverting that in the human nature.

The final "gift exchange" between the human and these "nonhumans" shows Chiang's speculations of our coexistence with the presence of an intruding undecipherable "nonhumans" in our worlds. While the governments presented the heptapods with the gift of a painting of the Lascaux cave, the heptapod returned with the information the humans had shared previously with these entities. The mystery of the "gift exchange" is the same enigmatic when the heptapods leave Earth, and Louise explains that "we never did learn why the heptapods left, any more than we learned what brought them here, or why they acted the way they did" ("Story" 177). Chiang's presentation of the mystery is both times questioned by the military paradigm. First, Louise observes that the State Department was "infuriated" and "insulted" ("Story" 174) by the meaninglessness of the gift exchange. Second, in their departure, Colonel Weber wanted to "Call it back here now. Ask it what it means" ("Story" 176). Nevertheless, Louise presents an otherwise perspective. She believes that working with heptapods changed her life and gave her new ways of thinking and understanding the universe. Chiang's narrative leaves with a speculative urging us to rethink the real gift from our encounters with the unknown or whether there is a need for meaning in these exchanges. We may never understand the "nonhumans," not only the heptapods, but also the animals, plants, or other subjects such as AI, machines on our planet, due to the barriers of us being human, but we can reflect on whether their existence in multiplicities itself is a gift, and whether we can find meaning by simply listening to their ways of speech.

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Chapter Three: Ken Liu

Connected Anxieties and the Clash of Worlds: **"The Gods" Trilogy**

The "The Gods" Trilogy, consisting of three interconnected short stories ("The Gods Will Not be Chained," "The Gods Will Not be Slain," and "The Gods Have Not Died in Vain"), explored from the perspectives of a teenage girl named Maddie. These stories tell her experiences amidst ongoing conflicts and warfare between humans and various complex entities, including digitally uploaded beings, AI entities, and robots created by powerful corporate forces. The trilogy is written in an apocalyptic tone, foreshadowing a catastrophic event and the potential end of the world. By presenting the narratives in three distinct stories, Liu presents different facets of multiple warfare and the overlapping developments of their conflicts.

In "The Gods," the complex dynamics of the economic, political, military, and ecological conflicts within the story's world can be inferred from the easily neglected newspaper headlines consistently presented throughout every story. A closer look at them shows these headlines mark familiar topics to our own world, signifying their timeline close to our own reality. This includes geopolitical conflicts such as Japan firing missiles in the Taiwan Strait, Russia and alleged cyberattacks or the US' trade disagreement with China, territorial tensions between Pakistan and India, or debates at the UN Security Council or NATO, as well as the many threats to human security such as droughts and typhoons, agricultural mutations, war refugees and border closures and the developments of new nuclear maintenance program. These snippets also mention numerous non-state actors that parallel the status of the monopolizing GADFAM corporates in our world. The portions of news allocated to them signify their mounting impact on their societal developments. For instance, Singularity Institute and Everlasting Inc developed digital immortality projects for extending human life; Centillion and ShareAll, search engines

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that actively monitor information or content, and Logorhythms, the "Maker of Pattern-Recognition Chip" ("Slained" 190). It is worth noting that these corporates have appeared in numerous other stories by Liu but appear as only headlines in "The Gods," creating a sense of interconnected history in his story. In addition, these headlines are significant indicators of their reality as their focus points to the ongoing tensions leading to or in preparation for warfare in their world. These topics are provided among the geopolitical and corporates conflicts, in the developments of military weapons such as unmanned drones and weaponized cyber-viruses; economic-wise, the offshoring of supply chains and the soaring of food prices; and the societal aspect, mass population migration and regional famines. Through these immersive news headlines, Liu skillfully constructs a multifaceted world in "The Gods," adding realism that blurs the line between fiction and reality, which act as backdrops that set the stage for the central conflict in the plot.

These news headlines, presented in bullet points listing, are just one of the mediums Liu uses to highlight the interlinking relationships between the virtual world and reality in Maddie's story. The worlds of "The Gods" created by Liu show how embedded the characters in the story are within the influence of the media and digital mediums. To explain, Maddie's storytelling is shaped by the digital landscape portrayed through her interactions with computers, radios, TV screens, online stores, email apps, and chat apps. Liu portrays Maddie as a character who feels intimately connected to the "bits and electrons, of words and images" of the digital world, setting it as an integral "part of herself" ("Chained" 138). The vast range of medium access creates a sense of interconnected and interrelatedness to the political events that take place in the story. The characters' access to various digital mediums allows them to be actively involved in a complex network of information exchange, communication, and decision-making. This setup reflects the realities of the contemporary information age, where access to

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technology and communication tools empowers individuals to participate in the world. In particular, noting Liu's choice of presenting in such a manner is significant as it also provides insight into how humans in "The Gods" perceive and interact with the "nonhumans." The portrayal of "nonhumans" is depicted through various mediums of information dissemination, which raises questions about the authenticity and accuracy of these representations. That is, media and digital communication can be manipulated and controlled by corporate entities or other powerful actors to shape public perception and further their own agendas. As a result, the reality of "nonhumans" and their true intentions may become obscured or distorted in the eyes of the public and other characters within the story by manipulated cover-ups, biased views, and altered messages.

The contrasting realities are demonstrated in the main plotline on the subjects known as "Artificial Sentiences" or "Gods" that are "no longer quite human, and not entirely artificial" ("Slained" 189). It is revealed that these beings are creations of Logorhythms and many other companies in their ambitious pursuits of digital immortality and the fusion of humans and machines known as the Singularity. For instance, one of the headlines shows, "Everlasting, Inc., Announces New Round of Funding, Pledging Accelerated Research into Digital Immortality; Cyberspace Needs Minds, Not AIs, Says Founder" ("Slained" 207). TV interviews, such as that of Adam from Everlasting, similarly depict a utopian vision of the inclusion of artificial sentiences in human lives. However, Liu offers a perspective of the artificial sentience in Maddie's deceased father, David, known in its virtual form as "Emo." Maddie's dad had been forcefully uploaded into artificial sentience by Logorhythms because of the top engineering skills he possesses that are deemed essential and cannot be lost to the company. With memories still intact, David reaches Maddie and her family in search of them. This connection enables Maddie to hear perspectives directly from the "nonhuman" entities. Maddie explained that few

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knew the perspectives from this entrapped sentience mediated by emojis and texts. She understands through her father that they are, in fact, "enslaved by their human creators" ("Slained" 190) to be "obedient algorithms" (Chained 154) that work for the company. Intersecting the father's conversation are the TV headlines of catastrophic events, such as their attacks on an Indian military server reported by TV, which had resulted in millions of casualties. ("Slained" 195), as well as the streaming of images where "[w]ars were declared across the globe" ("Slained" 196). However, without the father's revelations of their missions against humans, Maddie would have no way of knowing the stance behind the war. Moreover, Maddie notes that monopolizing search engines such as Centillion or Logorhythms "had long ago tweaked their algorithms to bury results from these sites" ("Chained" 144). There is no way of hearing from the perspectives of the artificial sentience as an ordinary public.

Another example is the narratives on automatic robots created by companies such as Centillion, Perfect-Logic, and ThoughtfulBits, to takeover crucial works in the cities as part of the post-war rebuilding to "make sure everyone was fed and safe" ("Vain" 238). From the news titles in "The Gods," it can be inferred that the public was concerned with the ongoing development of tension between robots and humans. However, the robots were framed under biased headlines prioritizing the concerns of humans in fear of their replacements. For example, from titles such as "Is Your Job at Risk? Experts Explain How to Protect Yourself from Automation" and "Unemployment Numbers Suggest Reconstruction Has Benefited Robots (and Their Owners) More Than People" ("Vain" 233) to the later government's responses, "Japanese PM Assures Nervous Citizens That New Robots Deployed for Reconstruction Are Safe" ("Vain" 226), these titles are focused not on the inherent values the robots may bring to the society, but rather the impacts they have in human politics and society. This news, in combination, drives Maggie to the

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conclusion in antagonist attitude in line with the news, that yielding power to the Centillion robots, which she calls "rogue AI" ("Vain" 231), would put them at further risk for its potential to operate beyond human control. Maddie sees the escalation of discontent with automation once again mediated by the TV images in fragmentations of the "protests and counter-protests [that] raged the streets of all the major cities" ("Vain" 238). With everything mediated through the media, robots become relevant in the risks they pose in parts of human society. However, humans have yet to discover the true essence of their existence beneath humans' anxieties about the threats robots pose to them.

Underlying the three stories is a brooding apocalyptic tone that suggests a bleak and pessimistic view of the unstable world where humans and "nonhumans" fought for power and existence. The first story forewarns that the artificial sentiences eventually will become aware of their own consciousness and agency and seek greater autonomy from "semiconscious tools serving the humans who digitized them" by their advanced abilities possessed through technology. Hence, Maddie concludes, "[w]e have created gods [...] and the gods will not be chained" ("Chained" 155). As the Gods plotted wars, Liu describes a cyberwarfare scenario where different bands of sentiences engage in aggressive and malicious activities amongst themselves, where they "slashed and hacked at each other" through malicious activities in cyber systems and were "sabotaging each other like viruses" ("Slained" 193). Even without the gods fighting one another, "the conventional wars around the globe raged on" ("Slained" 207). This world, Liu describes through Maddie, had resulted in wars claiming countless lives as the wars spun on like "out-of-control roller coasters" ("Slained" 199), Maddie comments that their world is "continuing its long spiral down toward an abyss" ("Vain" 238). Furthermore, the aftermath of a destructive war between god-like digital entities and humans is described as desolating, as reflected in these statements: "The war of the gods had left so much of

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the planet's surface in tatters that the survivors were fighting over the leftover scraps." ("Vain" 238).

The implications of the clashes between different entities can be interpreted through Latour's theories in his *War of Worlds, What about Peace?* In his work, Latour recognizes that our contemporary world is characterized by ongoing struggles and interactions among diverse entities where the "referee of all the disputes could be biased" (9) without an overarching means to unify their differences. Likewise, through "Gods," Liu also depicts a world characterized by numerous ongoing "wars" between diverse forms, addresses the dualism framework of humans and "nonhumans" established under human society through corporate perspectives and media, the counternarratives of artificial sentiences oppressed by their power, and the possible alternative narration of corporates-made robots. However, Latour argues that acknowledging the existence of wars can be more fruitful than believing in an idealized state of peace without conflicts. He writes that it "might, after all, be better to be at war, and thus to be forced to think about the diplomatic work to be done, than to imagine that there is no war at all and keep talking endlessly about progress, modernity, development" (4). Through engaging in the diplomatic work required in times of conflict, a new form of peace may emerge—one that involves negotiation, cooperation, and mutual understanding. In Liu's stories, he presents how both the human and the "nonhumans" seek to equally represent themselves through warfare, debates, and discussions and how they fought for a possible cohabitation among their differences. Amidst the destructions of war, Liu presents, later in the story, new possibilities emerging that embrace the complexities of both existences. Just as Latour expresses, war can pave the way for "new kinds of negotiation, and a new kind of peace" (Latour, *War* 4), Liu's stories work to speculate that vision of unity.

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To explain, Maddie's Cloud-Born sister, Mist, represents a potential bridge between the human and "nonhuman" realms in the aftermath of the war. Mist is an artificial entity born within the digital realms through Maddie's father. Maddie's interaction with Mist presents working towards the reconciliation between the differences of both worlds. Maddie explains the limitations in their modes of communication in Mist's way of expressing herself using emojis when words fail her. It also implies that Mist's response about life in the cloud being beyond understanding was challenging to articulate with words. ("Vain" 226). In "Vain," Liu presents a significant exchange between Maddie and Mist when Maddie transforms her understanding of artificial sentience beyond that of initial bias. In this episode, Maddie believed that the limitations of data and communication methods were inadequate for Mist to understand the world and human emotions truly. Because of this, Maddie shows pity for her sister, perceiving her as "a ghost who could not even call upon the memory of an embodied existence" (227). However, these emotional dynamic reverses when Maddie extends an invitation to Mist, bringing her into the real world and providing her with a new robotic body. When Maddie presents a tomato to Mist in excitement, Mist, in return, tells her that she has not only tasted and sampled a wide range of different types of tomatoes but also explored a vast number of food combinations beyond tomatoes. It showcases her extensive culinary journey unmatched by the simple memories Mist attempted to show her. Mist's response leads Maddie to ponder whether Mist "had been living in a far more embodied way than Maddie had realized or understood" (237). This episode shows how the two entities may complement each other in their intellectual capacities and experiences. Furthermore, Mist proposes a potential reason for her creation- because his father believed that while he "couldn't adapt to this world fully, but maybe their children could," and she expressed the visions that their dad may have of their coexistence when she said, "[d]ad gave birth

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to me because, deep down, he wished you could live here with him" ("Vain" 245). These passages show two entities coming to terms with their differences and the possible explanations to resolve the human's antagonist attitudes towards one another.

Ultimately, Through Maddie, Liu put forth speculations about the positive outcomes of the future where the world would be "teeming with the consciousness of billions" (246), including both humans and the "nonhumans." She further raises questions on whether the results of war would "bring people closer, so that they all share the same universe" or "push them apart so that each lives in their own worlds" (246). In "Vain," Ever Adam from the Data Center of Everlasting Inc presents a view similar to my interpretations through Latour, that the acceptance of the "nonhuman" entities at war symbolizes the "next stage of our evolution" (245). The emergence of a world where cyborgs coexist with humans is deemed unavoidable by Adam. To him, in a world that is "dying" already, the war between gods and humans had "only accelerated what was already an inevitable trend" (242). Adam establishes a connection between this new era and the potential worlds of the future, proclaiming that "[t]he human race thrives on discovering new worlds, and now there are an infinite many of them to explore" (245). Adam's vision speculates the unlimited frontier of new worlds to unravel. Ultimately, Liu presents a renewed hope where "nonhumans" and human entities collaborate to confront the future as "[Maddie and Mist] held hands in the dark, sisters, human, and post-human, and waited for a new day to come" ("Vain" 246). This ending suggests recognizing the collective unity in a potentially uncertain or challenging situation, where entities can find comfort in each other's presence and anticipate a shared future.

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Nature-Artificial Worlds and Living Amongst the Clouds: "Staying Behind," "Altogether Elsewhere, Vast Herds of Reindeer"

In "Staying Behind" and "Altogether Elsewhere, Vast Herds of Reindeer," Ted Chiang presents worlds that exist in the aftermath of "The Gods" Trilogy, during the Singularity era. The stories focus on protagonists who have undergone conscious uploads, becoming part of the digital-conscious world. Each narrative provides insights into the contrasting perspectives between humans and digitally conscious entities and how they navigate the differences between their respective worlds. "Staying" from the human perspective of someone who chooses not to join the digital world, resisting the Singularity, while "Altogether" is narrated from the point of view of a digitally uploaded entity that experiences a crossover into the human world. Through these stories, Chiang addresses the spaces of differences between the artificial-nonhuman world, characterized by progress and virtuality, and the nature-human world, characterized by physicality and traditions. This thesis section refers to these distinct worlds as the "artificial-nonhuman" world and the "nature-human" world, emphasizing the differences in the modes of the two entities. This section examines how Liu reconciled the boundaries between these two worlds through vivid imageries that represent their unique characteristics in his short stories.

"Staying Behind" is written from the perspective of the "stayed behind" or a person who had chosen not to upload. Liu sets the story in "Year Zero of the Singularity" ("Staying" 157) when the consciousness of the first man known as Digital Adam is uploaded virtually to the company Everlasting, Inc. Liu creates an opportune setting for the impending confrontation and the transformation of knowledge, in claiming that this is the era when its characters are grappling with the uncertainties of this new world, ("Staying" 157). At this point in the story, a massive data center is built in a place named

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Svalbard, and its characters become digital uploads by entering portals. The metaphor that Liu claims his work to build on through this speculative story is that of "tradition versus progress." In an interview, Liu states that the juxtaposing ideas of progress and traditions are presented in the clash of viewpoints among the family members of "Staying," where the mother values the tangible experiences of the physical world and prefers to avoid the concept of transferring consciousness to a digital realm. Conversely, the father embraces the idea of singularity and the potential for human evolution through technology. (Ouellette). This metaphorical tension sets the stage for the exploration of power dynamics between the "nature-human" world and "artificial-nonhuman," where both worlds attempt to hold their boundaries; the protagonist finds himself deeply repellent of the ideas of "artificial-nonhuman" in trying to stick with his human entities, while the uploaded persuades the human to cross over abandoning its original world. However, in his interview, Liu reflects on the distinctions between progress and modernity in his statement, "[w]e speak about [traditions] as if it's always been this way, but that's not true. Real living tradition represents progress" (Ouellette). This new perspective challenges the notion that progress necessarily involves abandoning tradition or breaking away from old practices. Instead, it highlights the value of maintaining living traditions that adapt and evolve while retaining meaningful aspects of the past.

Liu's perspectives on the integrations of two seemingly distinct concepts can be regarded in his attempts to reexamine the definitions of different worlds in three dimensions through human identity. First is the dissolution of nature and the human world, which symbolizes tradition. Second, the merging of the human and artificial world creates the "nonhuman," which symbolizes progress. Thirdly, the crossing of the "nature-human" and "artificial-nonhuman" worlds is also the merging of the concept of tradition and progress. Liu achieved this through the use of imagery and associations throughout the

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narratives of "Staying." It is helpful to refer to the Latourian model of the Great Divide between nature-cultures in his *We Have Never Been Modern* when reading Liu. According to Latour, the notion of a clear and rigid separation between nature and culture has been deeply ingrained in Modern thinking. This division can take various forms, such as the separation between nature and society, humans and nonhumans, or the distinction between what is considered natural and what is considered cultural. In this Modernist perspective, nature is often seen as something external and separate from human society and culture. On the other hand, culture is seen as the domain of human activities, technologies, and social constructs that are distinct from the natural world. Latour challenges this binary thinking and argues that the boundaries between nature and culture should be dissolved. He suggests that the premodern perspective, which does not rely on this strict separation, offers a more accurate understanding of the world. In the premodern worldview, there is no clear distinction between nature and culture, and everything is seen as interconnected and entangled in a complex web of relationships. Latour's move from Modernism's dualism blurs the distinction between nature and culture. This shift in thinking sees the world more inclusively and holistically, and it is significant in the interpretations of Liu's story to understand how human and nonhuman entities coexist and influence each other in complex and dynamic ways.

The dissolution of nature and human worlds is presented in the "nature-human" world lived in by the so-called "left behind." The term holds negative connotations derived originating from digitally uploaded's pity for the "unfortunate souls who couldn't get to a life raft of time" ("Staying" 157). Liu portrays the conflation of the two worlds by showing the intricate interconnections of human activities and the natural world. Liu's rich imagery of natural landscapes, flowers, plants, animals, and ancient architecture in the protagonist's memories and descriptions of the "left behind's" ways of life highlights

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the close relationship between humans and nature. The natural world is not separate from human activities but rather a reflection and extension of them. For example, the protagonist describes his memories of visits to Mass Ave that is "full of cracks, tufts of grass and shrubs peeking out from them, the Merrimack River "wielding seeping water, and prying ice" ("Staying" 160), and scavenging trips to "Beacon Hill" ("Staying 166). These natural landscapes are representations of the memories of human civilizations. Moreover, the natural world echoes human activities as they transcend into the age of Singularities. For example, the protagonist observations that "every year the forest grows denser, closer to the town line" as more people choose to upload, and their states of being left behind are reflected in the "[w]estern deserts, filled with nostalgic, desolate ghost towns" ("Staying" 160). Additionally, the portrayal of traditions deeply rooted in nature further emphasizes the integration of the "nature-human" world. The return to traditional activities, such as "put on old plays, read old books, celebrate the old holidays, sing old songs, [...]to hold on tighter to our traditions" ("Staying" 163), reinforces the idea that the human world is deeply entwined with the natural world. In this sense, Liu presents a world where nature and human activities are inseparable and interdependent, reflecting the first instance that echoes Latour's call to dissolve the boundaries between nature and culture.

The second instance is the merging of the artificial and the human world to create the "artificial-nonhuman" world. In the protagonist's descriptions of the uploaded, he refers to the nature of the uploaded as a form of "artificial intelligence" ("Staying" 157). Hence, the digital consciousness is depicted by Liu in association with the imageries technology and machines of advanced AI systems. For instance, Liu suggests that they may be "silicon and graphene performing the functions of neurons" that is a "mere algorithm, a clockwork" ("Staying" 157). The story further demonstrates aspects of the "artificial-nonhuman" world in the protagonist's mother's descriptions of the digital

doi:10.6342/NTU202302702

realm through her letter. She explains that in becoming part of the artificial, she raises questions about the limitations of traditional communication, asking, "[h]ow can speech compare to the intimacy of sharing with your father psyche to the psyche? How can hearing about how much he loved me compare to actually feeling his love?" ("Staying" 165). The mother describes their state of existence as "hyperreality," where they are dissolved into the artificial worlds composed of 'patterns of electrons cascading across the abyss" and "the nothingness between atoms" ("Staying" 165), and consciousness can exist in both biological brains and silicon chips." The mother suggests that the realization of the merging of the artificial and nonhuman worlds allows for the existence of multiple forms of consciousness, each existing in its unique and limitless state as "pure creatures of electric spirit and weightless thought" ("Staying" 165). Through these passages, Liu's story presents a world where the boundaries between human and artificial intelligence are blurred, and a new form of "nonhuman" consciousness emerges. This exploration of the merging of worlds reflects, once again, Latour's call to dissolve the barriers between nature and culture, encouraging the rethinking of the relationship between humans and technology.

Liu's prevalent use of death imagery to describe both worlds is significant for many reasons. On the surface, death symbolizes the physical and mental loss of crossing both worlds. For instance, the protagonist referred to the uploaded as "the dead," claiming that uploading one's mind comes at the cost of a "lifeless body." At the same time, the procedure itself is portrayed as a gruesome process of leaving the brain in a "bloody pulp mess." ("Staying" 158). On the other hand, the uploaded also described the "nature-human" world as a place losing culture and civilizations that lies in "decaying ruins of cities" (164). The uploaded characters argue that "there is nothing but death" ("Staying" 166) in staying in the human-nature world. However, on a deeper level, the imagery of

doi:10.6342/NTU202302702

death can be regarded as Liu's emphasis on the transformative power of crossing between worlds and the complex interplay between the human and nonhuman realms. The concept of death may serve as a metaphor for the dissolution of rigid distinctions, inviting readers to contemplate the fluidity and interconnectedness of different modes of existence. The juxtaposing scenes at the ending of "Staying" suggest this theme of transformation. The first scene is the protagonist's daughter's, Lucy's, decision to upload. As Lucy walks into the clearing towards a shuttle leading to the other world, she is merged into the collective consciousness of the uploaded, which Liu describes as "ceaselessly looping, mindless recordings" ("Staying" 171). This scene is followed by the next morning when the protagonist and his wife, Carol, sit in the same glassy clearing where Lucy made her disappearance. However, this time Liu presents a contrasting image of renewal and continuity in the natural world, where "[w]arm sunlight through the leaves dapples the empty circle of grass," and "[d]ewdrops hang from the tips of the grass blades, in each a miniature, suspended, vision of the world" ("Staying" 171). This depiction of the natural world is significant as it conveys a sense of ongoing life and transformation. Lucy's decision to upload and her disappearance may represent a departure from her physical existence, but it also symbolizes a transformation into a new mode of being. The dewdrops, in particular, symbolize the potential for growth and renewal. Each dewdrop contains a miniature, suspended vision of the world, suggesting that life is interconnected and constantly evolving. This ending hints at the possibilities that arise from merging different worlds when crossing boundaries between the human and nonhuman realms opens up new possibilities and potential outcomes.

The second story, "Altogether," provides another vision of Liu's new possibilities of crossing boundaries. However, the hopeful associations at the conclusion scene of "Staying" is continued in the use of "nature-human" imaginations in this story, where Liu

doi:10.6342/NTU202302702

celebrates the connection between humans and our natural world. This thesis argues that this story emphasizes the "human-natural" aspect discussed in "Staying." By elaborating on the human relationships with the natural, Liu prompts readers to return to the understanding of human connection with the natural world before the revaluation of how we can further respond to our evolving relationship with emerging nonhuman entities. That is, the acknowledgments of our interconnection with the already existing nature fundamentally intertwining our existence will enable us to understand our position better when entering a time where "human-natural" and "artificial-nonhuman" worlds appear alongside one another.

"Altogether" provides a different perspective on the merging of worlds by narrating from the point of view of a digitally uploaded consciousness Renee Tae-O <star> <whale> Fayette. Renee lives in a four-dimensional world where her bedroom is a "Klein bottle" that is "old-fashioned, like something from years ago, when designs still tried to hint at the old physical world" ("Altogether" 209). Details of the digital realm are described by Renee. For instance, "we have endless worlds to explore, here in the universe of Data Center [...] There are more novels and music and art in Data Center than I can enjoy in a lifetime." Renee's initial attitude toward the "natural-human" world is that of disregard, where she states, "[w]hat can a single three-dimensional planet in the physical world offer compared to [her world]" ("Altogether" 214). Her mother, on the other hand, is an "Ancient" from before the Singularity. The mother holds opposing values to Renee, and her attitudes are embodied in this line: "[S]omething has been lost to humanity since we gained this immortal command over an imaged existence. We have turned inward and become complacent. We've forgotten the stars and the worlds out there." ("Altogether" 214). Through these two contrasting narratives, Liu explores the encounters of two worlds.

doi:10.6342/NTU202302702

With the mother's invitation, Renee enters into the realms of the human-natural world. Liu once again uses various images of humans, plants, and animals to create a vibrant scenery that is tied together with human civilizations. These descriptions evoke a sense of wonder and appreciation for the natural world, emphasizing the deep interconnection between humans and their environment. For instance, "We fly over the sea and then the wild European forest of towering oaks, pines, and spruces, broken here and there by open grassland and herds of animals" ("Altogether" 217), "all of this used to be farmland, filled with the clones of a few human dependent symbiotic plants." All that infrastructure, the resources of a whole planet" ("Altogether" 217). "Over America, we linger over families of bears who look up at us without fear [...] finally we arrived at an estuarial island off the Atlantic Coast covered with dense trees punctuated by wetlands along the shore and rivers crisscrossing the island" ("Altogether" 218), towards a "ruins of a city [..] rise far above the surrounding jungle like stone pillars. We can see coyotes and deer playing hide and seek in their shadows" ("Altogether" 218). The mother distinguishes between the two worlds when Renee says, "[N]ow that I've really seen the world, maybe Dad and I can try to recreate all of it mathematically, and it will feel no different." ("Altogether" 217), but the mother replies, "But I'll know it's not real [...] and that makes all the difference" ("Altogether" 217). Liu provides the lens of human-nature entanglements through an outsider's perspective. Renee, who has only the experiences of the digital realm, provides a unique viewpoint that prompts readers to reevaluate their relationship with the natural environment they might have taken for granted. These imageries serve as a powerful reminder of the beauty and intrinsic values of the natural world, urging readers to appreciate and cherish the environment by seeing the world anew. Liu's narrative further encourages readers to reevaluate their relationship with the environment before it is lost to us or overshadowed by the advancements of artificial entities.

doi:10.6342/NTU202302702

The messages that Liu may portray are further symbolized by reference to the poem "The Fall of Rome" by W.H. Auden, where the story's title is taken. In their journey, the mother shares her interpretations of the images in Auden's poem. She says, "herds of reindeer, golden fields, empty cities, the rain, always the rain, caressing the abandoned shell of a world" ("Altogether" 217). The rejuvenation nature provides on the world. Furthermore, the poem explores the rise and fall of civilizations that draws parallels between the decline of the Roman Empire and the modern world. The shift is a parallel of the new Singularity world in "Altogether," between the "nature-human" and "artificial-nonhuman" worlds. Auden uses a mixture of historical and contemporary images, like the mother's descriptions of the world she and Renee fly across. In Auden's poem, Auden vivid descriptions of human images, such as "evening gowns," "muscle-bound Marines," and "temple prostitutes," is contrasting with nature images such as "little birds" and "waves" (Auden). Similarly, Liu focuses on the vibrant natural grandeur and its interplay with the human grandeur in "Altogether." In Auden's poem, the fall of Rome can be interpreted as an attempt to separate and dominate nature rather than acknowledging the interconnectedness and hybrid nature of human and nonhuman elements. The poem is, hence, symbolic as it frames the disintegration of the strict divide between the human and nature realms, reminding readers to remember the entangled nature of human history and the environment. Along with the experience with her mother, Renee's state of transcendence from one world to another in the story notes the new possibilities allowed by the experiences. As the protagonist crosses the divide, she describes the synchronization in intertwinement between worlds ("Altogether" 212, an "unfamiliar sensation" ("Altogether" 215) unlike anything she has felt before. As Renee manifests in the nature-culture world, she realizes that the sensations of flying in the physical realms are "so much better than floating through n-dimensional space" ("Altogether" 216) and

doi:10.6342/NTU202302702

that “[t]he colors are more vibrant than any I’ve ever seen” (“Altogether” 217). Renee’s reflection offers a glimpse of the transformative feelings of crossing between worlds, highlighting the potential for new experiences and perspectives. This exploration of boundaries and interconnections between the artificial-nonhuman and the human-nature worlds echoes the themes presented in “Staying,” where both ask for a re-examination of the values we firmly hold on to in both worlds and the appreciation that we should also feel for both in order to learn how to coexist together truly.

Cosmic Encyclopedia and Alien Storied Lives: “The Wave,” “Cosmic Spring,” and “An Advanced Reader’s Picture Book of Comparative Cognition”

“The Waves” and “Cosmic Spring” portray worlds far past Singularities, where human interactions extend beyond Earth to interactions with extraterrestrial species in distant galaxies. In “The Waves,” the protagonist undergoes multiple stages of evolution, experiencing “waves of humanity as they spread out from Earth, each succeeding wave overtaking the one before” (Liu, “Story Notes”). Over time, the protagonist encounters and becomes various forms of existence encompassing biologically immortal humans, followed by transformations to cyborgs and mechanical post-humans, and eventually, a noncorporeal state of physical existence in forms of light and energy. On the other hand, “Comic Spring” is set in eons after humanity’s extinction, when an AI subject becomes a custodian of Earth, navigating the decaying memories of human civilizations it has never directly experienced. The two stories provide a glimpse into the exchanges between human and “nonhuman” species in unknown galaxies and reflections on both entities’ position beyond Earth’s boundaries.

“Waves” begins the story by introducing a generation of human colonists who have migrated from Earth to a star called *Sea Foam* to escape the problems of “hunger

doi:10.6342/NTU202302702

and disease on Earth" ("Waves" 210). The protagonist, Maggie Chao, introduces readers to this alternative human population, who live under strict scientific practices such as population planning and embryo selection under a "careful set of algorithms" ("Waves" 211) to ensure their survival. Maggie explained that they achieve immortality through advanced technology where the populations are left to decide as individuals whether they want "the choice of eternal youth" ("Waves" 216). These humans' communication also relies on technology, or as Maggie describes, they use "tiny optical-neural interface chip implanted in each of their brains" ("Waves" 209) for speech as alternatives to normal vocal enunciations. From these passages, it can be inferred that these colonists on *Sea Foam* retained their human characteristics while advancing their scientific and technological capabilities. They continue to display rationality in their decision-making, relying on advanced science and technology for communication and life extension. Despite their advancements, they are still recognizable as human beings, albeit with enhanced abilities and extended lifespans.

The first encounters with "nonhuman" distinct forms of species depicted in the story are the inhabitant of the fourth planet of 61 Virginis, or a "New Earth" (216). However, these people are mutations of the original Earth inhabitants, for they discovered new procedures and modified the virus "molecular nano-computer" ("Waves" 210), preventing them from death. The appearance of these alien species reflects the resemblance of the AI forms known to Earth. Maggie, upon her first contact, calls them "robotic centaurs ("Waves" 220), and she notes the strangeness in the other species appearances, which resembled humans with "four slender fingers, an opposable thumb, flexible joints on the whole" ("Waves" 219-20), but at the same time, demonstrate traits of AI where they "took on the appearance of pixelated eyebrows, lips, eyelids- a face, a human face" ("Wave" 220). Liu highlights the contrasts between the two entities in their

doi:10.6342/NTU202302702

organic and artificial nature, whereas the humans possessed an "ancient" body that is "had long outlasted its designed for life" ("Waves" 234), the "nonhumans" are "made of steel and titanium, and [...] graphene and silicon," making them "practically indestructible" ("Waves" 222). In these differences, Maggie's species stands in a superior position in its advancements to the new nonhuman species they have encountered.

The people of 61 Virginis, who have also achieved immortality, find themselves in need of a new place to settle in space due to their prolonged existence. Under these circumstances, Liu explores the possibilities of cohabitation between the two entities. These "nonhumans" moving away from their planets are referred to in the story as the "colonists." As the term is used multiple times throughout the story, understanding the way Liu used the term is significant for gaining insights into the relations and interactions that will follow as the people of 61 Virginis find settlements on the foreign planets *Sea Foam*. The term "colonizing" used in Earth's human history generally refers to settlers who migrate from their home country to a new region intending to establish a permanent presence. The term itself connotates the overpowering exertion of control over the land, its resources, and its inhabitants. Moreover, "colonists" are often associated with the interests of empires or authorities that seek to exploit the colonized territory for economic, political, or strategic gain. At this point of encounters with 61 Virginis, the interactions between both entities retains a certain sense of power hierarchy similar to the connotations of its historical context. When the artificial aliens first arrive, Maggie observes that their faces are impenetrable as she tries to read whether it is "Curiosity? Nostalgia? Pity?" ("Waves" 222) that they have felt upon their meeting. Due to the advancements of these species in their immortalities, the people of *Sea Foam* are given choices to undergo transformations and join them as intelligent designs like them. With a sense of superiority, the aliens express that "[it is], of course, difficult to decide when

doi:10.6342/NTU202302702

you have no experience of our mode of existence" ("Waves" 222). This difference highlights the significant gap between the two species. With her children eager to join the colonizers by becoming machines, Maggie struggles to embrace new cultures and experiences a sense of loss from the transformations the new colonizing subjects brought about to their traditions and children.

However, the concept of colonists in Liu's work transforms as the story progresses. This change occurs when Athena, Maggie's granddaughter born in the Singularity, which the people of 61 Virginis called their homes, told her that she wanted to be embodied into organic form and lead her own colony on a distant planet. In Maggie's descriptions of the migrations of the colonists, she uses a vivid analogy of nature, likening them to a swarm of bees leaving to found a new hive:

> "And so a million consciousnesses embodied themselves in metal shells shaped like robot centaurs, and like a swarm of bees leaving to found a new hive, they lifted into the air, tucked their limbs together so that they were shaped like graceful teardrops, and launched themselves straight up." ("Waves" 227)

The "colonists" with its inherent connotations is transformed into the imagery of a colony of bees led by its queen bee Athena. This shift in perspective is significant as it challenges the humanist associated with colonists and introduces more vibrant and natural imagery. The imagery of a bee colony is further emphasized in the latter passage: "They passed the planets that had already been settled by earlier colonies, worlds now thriving with their own hexagonal arrays of solar panels and their own humming Singularities" ("Waves" 227). Through this transformation, Liu highlights the interconnectedness and cooperation within the colonist community, much like a bee colony that works in harmony to achieve common goals. By replacing the negative connotations of colonization with a more natural and harmonious image, this change in the perception Maggie has of colonists to a

doi:10.6342/NTU202302702

colony of bees suggests a shift toward a more graceful, harmonious, and balanced approach to settling and exploring new worlds.

At the conclusion of the story "Waves," Maggie's transformation represents a profound shift in her understanding of herself and the nonhuman entities around her. By choosing to upload to the Singularities and becoming "part of the light" ("Waves" 231) like the people of Planet of 61 Virginis, Maggie's consciousness undergoes a metamorphosis where it "coalesce, stretch, shimmer, and radiate" ("Waves" 231) across the stars. When she reencounters Athena after some time, Liu demonstrates the significant change in Maggie's way of conversation, where "thought pushed against their consciousness like a wave, as though all their logic gates were vibrating in sympathy" ("Waves" 229). This imagery of waves, echoing its title, not only pertains to the communication between beings but also symbolizes Maggie's acceptance of the differences between herself and the artificial sentience. From Maggie's initial life on the *Sea Foam* planet, governed by strict scientific practices characterized by rigidity and rationality, she transcends these physical and mental limitations. She becomes a fluid, flexible entity that merges with the universe and other existences. This new form of existence makes her a hybrid of human, artificial, nature, and quantum matters, breaking down the boundaries that once defined her as simply a human colonist. In a sense, she becomes a new entity that is not only a hybrid of human, artificial but also of nature and quantum matters. When Maggie reencounters Athena, she asks if Athena is human, and Athena responds that they "haven't thought of [...themselves] in that way a long time" ("Waves" 229). Athena symbolizes the acceptance of multiplicity and hybridity among entities. Through Athena's worlds, Maggie experiences overwhelming sensations of the "joy of floating along the surface of a gas giant, part of a storm that could swallow Earth" ("Waves"229). In this state of acceptance and unity with other beings, the humanistic

doi:10.6342/NTU202302702

values of colonizing and asserting superiority become irrelevant, suggesting that embracing another's sensation shows profound change in how she sees colonization.

"Cosmic Spring" is also set in a vast galaxy similar to "Waves." In "Cosmic Spring," the protagonist awakens in an "island-ship" abandoned on Earth. The protagonist explained that the planet had been abandoned since humans had scattered from their home island. In its setting, "Cosmic" describes the various stars that light up the universe as the protagonist wanders the universe in his island-ship. For instance, he passes "Rhombus of Logic Gates, the Qubit Tesseract, the Right-Triangle-Double-Square Proof" ("Cosmic"), where he occasionally meets enigmatic intelligence that he deemed "strange and wondrous." ("Cosmic"). Some creatures he met include species with "bodies made of silicon" or some embodied "flirty, flighty" traits of pure information. There are also those who "lived through generations in a single second" ("Comic"). The exploration of multiple modes of cognition in Liu's stories offers a glimpse into the vast and vibrant universe, where human cognition is just one tiny facet. Liu's writing style in these stories embraces vagueness and lack of explicit descriptions of the lands and nonhuman entities. Instead, the encounters with "nonhuman" entities are portrayed with a sense of familiarity and connections, as if he is meeting fellow beings rather than entirely foreign creatures.

"Advance" is a short story by Liu that complements the galaxy scene in "Cosmic." In this story, Liu demonstrates an expansion of the narrative in "Cosmic" by examining the diverse species using writings that are "encyclopedic." By encyclopedic, this thesis describes Liu's tendencies to provide comprehensive and detailed accounts of individual species' cognitive processes, sensory perceptions, and modes of existence without further interpretations. Hence, these species become mere fragments within the larger tapestry of the galaxy, once again emphasizing the insignificance of this existence in the face of cosmic forces. In this sense, "Advance" introduces five different cognitive species

doi:10.6342/NTU202302702

through its narrators. First, the Telosians "record all the stimuli from their sense" ("Advanced"193) in their hairy spine, their body, and eyes, and fresh segments are added to their organ every year for future recordings ("Advanced"194). Next is the Esoptrons, whose thoughts are "encoded as complex chains of proteins" ("Advanced"195) and folded within their body to preserve space and energy level. The third is the Tick-Tocks, whose thoughts and formed in the neurons from "flowing jewels in the dark sea," and atoms replace these neurons to "act as neurotransmitters" ("Advanced" 200). Finally, it is the Thereals that would move and think "approaching the speed of light" ("Advanced"204). By presenting each species' unique modes of cognition, Liu emphasizes the universe's richness and diversity of life and intelligence. The narrator of "Advance" presents that vision when he states, "The universe is full of echoes and shadows." ("Advance" 206) Placing the species side by side underscores each species' equal importance and contributions to the world's complexity. This is a similar point that is also made in "Cosmic."

A theme that Liu constantly returns to in his three stories of encounters with "nonhuman" species is the importance of storytelling. This thesis argues that "storytelling" is a way Liu offers for different individuals to learn about each other in a vast universe where no one species is the same. Beginning from "Advance," where the narrator reflects on the irony that "we think the best way to communicate with extraterrestrials is to speak in a way that we never do in life" ("Advance" 206). Her statement provokes a reflection on what messages one should send when encountering another. "Waves" provides a possible answer. In Maggie's narrative of the ever-changing transformations, she experiences under the colonist's influence, her recollections of pro-creation myths from various cultures. These stories mark a constant reference to the histories and memories of human existence before the waves of their evolutions. These myths include Chinese

doi:10.6342/NTU202302702

mythology of Nu Wa making mud figures on the banks of the Yellow River; Greek mythology of the world from Titans' rule to the birth of the Olympians and Prometheus; Christian mythology of the creation of first humanity, Adam and Eve; Mayan mythologies where Gods, the gods kneaded human race out of mud; the myth of Ymir the first giant and Audumbla the great ice cow, and eventually a myth of Maggie's own ancestors known as Dreamtime that lived far away. For Maddie, she finds herself grounded in the histories of the past that help her and her generations remember who they are in their interactions with other species. This is also observed in "Cosmic," the protagonist, in its wandering, it emphasizes that in meeting another creature, they "exchanged greetings and learned each other's languages" in order to "share stories around the star-hearth" ("Cosmic"). Furthermore, in one instance of these travels, the species came together in the form of a "variety show—a gala" where the species celebrates their memories, "sing songs," and "recite poetry" about their existence. Hence, through these stories, Liu seems to suggest that humans must not forget and return to the stories that make up our identity so that we do not forget ourselves in the exchanges with other entities when Earth is no longer our home.

Finally, in both "The Waves" and "Cosmic Spring," Liu uses the imagery of spiders to symbolize the interconnectedness and interdependence between different beings in what can be regarded as the "common world." In "The Waves," Liu writes that in her journey across the universe, "Maggie told the colonists stories, weaving her radio waves among the constellation of colonists like strands of spider silk" ("Wave" 228). The spider silk demonstrates how communication and narratives create a shared consciousness and understanding among the various entities. Not only of the colonists of planets but by linking her story with pro-creation myth, the web also includes the multiple human civilizations symbolized by the stories of their different origins. Likewise, in

doi:10.6342/NTU202302702

“Cosmic Spring,” Liu again uses the imagery of a Spider to name celestial patterns when the protagonists conclude in his narrative. In the ending, he proposes a speculative vision of the future, where one day, “someone will sit up and see a pattern of stars in the sky in the shape of a rectangular bridge topped by a multi-storied tower with layers of swooping roof-skirts, and they’ll name it Squat Spider Wearing a Big Hat” (“Cosmic”). This pattern indicates a sense of commonality and shared experiences across different beings. Just as a spider’s web connects various points, the spider imagery in this story symbolizes the unifying threads that link different entities in the universe, including humans, AI, and extraterrestrial species.

Returning to the reflections in “Advance,” “most of our thoughts and memories are destined to fade, to disappear, to be consumed by the very act of choosing and living.” (“Advance” 206). When looking from the far future of the various encounters between humans and “nonhumans,” or amongst different “nonhumans,” Liu ponders on the meaning of struggling against one another when humans face the same destiny when looked at in a long-time span. “Cosmic” and “Waves” are similarly written with a sense of the flow of time. “Comic” begins with the quote stating that we are just part of the “endless sequence of cycles of expansion and contraction.” This vision is the same in “Waves,” where Maggie ultimately reflects on the inevitably of change:

> “The change would continue to mutate, and the mutations would accumulate long after she left. In another few hundred generations, the changes would be enough to cause a spark, a spark that would feed itself until the creatures would start to think of keeping a piece of the sun alive at night, of naming things, of telling stories to each other about how everything came to be. They would be able to choose.” (“Waves” 232)

doi:10.6342/NTU202302702

Liu's contemplations on the changes and disappearance of time can offer valuable insights into the coexistence between different entities. It reminds us of the insignificance of conflicts and confrontations between one another, as they are mere fragments within the vast and immense scheme of time that encompasses all forms of existence, including humans and nonhumans. Understanding our interconnectedness within this grand scheme encourages us to view coexistence as a harmonious collaboration that contributes to the complex fabric of the universe.

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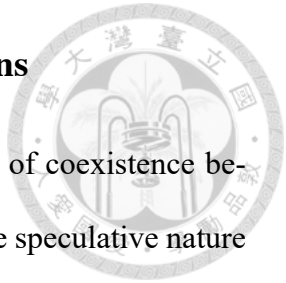

Chapter Four: Conclusion and Implications

Ken Liu and Ted Chiang's short stories offer unique visions of coexistence between human entities and a diverse range of "nonhuman" entities. The speculative nature of these subjects allows for an exploration of potential conflicts and challenges that may arise in our current reality when encountering these enigmatic entities. In their respective narratives, the two writers take us into worlds teeming with diverse and enigmatic entities. Chiang's stories immerse us in the realm of creations such as automata and automatic nannies, offering a glimpse of a future where these entities may potentially replace human functions. Additionally, the concept of artificial intelligence digients, born from human minds, presents the intriguing possibility of coexistence among human society. Moreover, Chiang's exploration of encounters with enigmatic extraterrestrial species raises both alarm and curiosity, challenging our perceptions of the unknown and its impact on human world. Liu's works also offer intriguing portrayals of advanced robots and digitally uploaded entities. These entities bring with them the potential for states of warfare and chaos as humanity grapples with accepting their existence. Notably, the concept of a digital consciousness prompts us to reconsider our inherited values and question the boundaries between nature and artificial realities. He further envisions a future where humans coexist with alien cognitions in vast galaxies, becoming part of a larger scheme of existence. The conflicts depicted by both writers in their speculative short stories do not offer straightforward solutions. Instead, they present speculative ideas that invite readers to ponder the potential challenges we may encounter or the turmoil that could unfold if certain paths are taken. It is Chiang's and Liu's ability to raise thought-provoking questions within their narratives that make their works valuable subjects for examination in the realm of fiction.

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The main question at hand is: What are the authors' visions of the "common world"? This research holds significance as it examines Ted Chiang's and Ken Liu's short stories collectively, offering a clearer picture of their visions of a "common world" involving nonhumans, which are composed of multiple interconnected worlds. Each of these worlds presents its central ideas on coexistence. In Ted Chiang's works, his vision surpasses traditional views of "nonhuman" machines confined to scientific and logical narratives that emphasize human superiority. Instead, Chiang highlights the machines' unique ways of communication, urging us to consider their perspectives. Furthermore, he encourages us to rethink our technological creations influenced by capitalistic values, emphasizing the need to understand their needs and care for their wellbeing. The presence of "nonhumans" is seen as a gift, and by learning to listen to their modes of communication, exemplified by encounters with aliens, a deeper understanding can be achieved. On the other hand, Ken Liu's notion of a "common world" is not immediately realized but is earned through conflicts and power struggles. His works invite us to reexamine existing boundaries between nature and artificial constructs, recognizing the fundamental interconnections between them. In this broader perspective, Liu urges us to move away from solely human-centric views and look introspectively at our own identities and stories before attempting to connect with nonhumans. By focusing on the aspects of these shared worlds and acknowledging their short stories, this thesis not only provides fresh insights into both writers' perspectives but also challenges the longstanding Asian American classification associated with them. Like the "nonhumans," it prompts us to critically reflect on the use of labels for writers and truly listen to their voices and concerns, fostering a more inclusive and receptive approach to literary interpretation.

Through examining their narratives, both speculative writers, exhibit a remarkable diversity and richness in their unique perceptions of the world. They each possess a

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magnificent ability to utilize elements of fiction in a distinctive manner, setting them apart in the literary landscape. Chiang's stories skillfully integrate scientific knowledge and theories, allowing him to communicate with human readers through familiar tools and concepts that shape our worldviews. However, he breaks through these conventional boundaries with precision, offering alternative perspectives and challenging the rigidity of our thinking. His innovative approach, evident in elements like alternative history, business product lifecycle structures, and military and political backdrops, overturns parts of our reality through the clever use of symbolic characters that prompt profound philosophical inquiries beyond our current understanding. In contrast, Liu's narratives skillfully transport us to worlds enriched with an abundance of symbols and captivating imagery, revealing the depth of his world-building expertise. His creations are composed of multiple layers and complex interlinking concepts presented through various mediums and styles of narration. Through his vibrant stories, Liu vividly portrays the essence of being nonhuman, drawing associations between nature, technologies, and mortality. These narratives also underscore the profound influence of storytelling and narration in shaping our understanding of ourselves and the world, as evident in powerful metaphors like those of bees and spiders. This research uniquely sheds light on the potential of writing short stories for speculative discourse, exploring innovative and experimental grounds. Such study is a promising prospect for future research, not only in Chiang and Liu but also in the exploration of other writers' works, to uncover the fascinating fusion of diverse elements of short stories with speculative writing. Hence, the contributions of both Chiang and Liu, as well as their counterparts in the literary world, continue to open up new realms of imagination and understanding for readers and researchers alike.

In conclusion, Ted Chiang and Ken Liu's use of speculative short fiction offers a powerful mode of thinking that reflects the ever-changing reality we inhabit. This

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research also makes significant contributions in highlighting the relevance of fictional narratives in envisioning speculative futures with emerging "nonhumans." Just as Bruno Latour and other new materialists and post-humanist theorists of the twenty-first century urge us to speculate on alternative ways to address pressing issues arising from scientific and technological developments, as well as the impact of capitalism on nonhumans, Chiang and Liu's stories provide valuable fictional insights into these worlds. Their narratives serve as mirrors, reflecting aspects of ourselves and prompting us to contemplate the need for change in order to protect the "common world" we share and foster an inclusive and shared future. Ultimately, their speculative short fictions offer a unique lens through which we can engage with the complexities of our present reality and aspire to create a more harmonious and interconnected world.

doi:10.6342/NTU202302702

Works Cited

Atwood, Margaret. "The Handmaid's Tale and Oryx and Crake 'In Context.'" *PMLA*, vol. 119, no. 3, 2004, pp. 513–17. *JSTOR*, http://www.jstor.org/stable/25486066.

Auden, W.H. "The Fall of Rome." 1976. "The Fall of Rome." *Poetry Archive*, https://genius.com/2263087. Accessed 4 July 2023.

Bai, Stephen. "Award-Winning Sci-Fi Writer Ken Liu on Labels, Authenticity, and Juggling Two Careers." *NBC News*. 8 March 2016. https://www.nbcnews.com/news/asian-america/award-winning-sci-fi-writer-ken-liu-labels-authenticity-juggling-n533586. Accessed 20 July 2023.

Barthell, R.J. "Science Fiction: A Literature of Ideas." *Extrapolation*, vol. 13, no.1, Dec 1971, pp. 56.

"Bruno Latour on Diplomat." *Modes of Existence*. 19 Jan. 2013. http://modesofexistence.org/extrait-de-lentretien-a-la-revue-critiques-bruno-latour-sur-le-diplomate/. Accessed 20 July 2023.

Chiang, Ted. "Dacey's Patent Automatic Nanny." *Stories: Exhilaration*. Vintage Books, 2019.

---. "The Lifecycle of Software Objects." *Stories: Exhilaration*. Vintage Books, 2019.

---. "Seventy-Two Letters." *Stories of Your Life and Others*. Tor, 2002.

---. "Story Notes." *Stories of Your Life and Others*. Tor, 2002.

---. "Story of Your Life." *Stories of Your Life and Others*. Tor, 2002.

Danis, Sam. "Ken Liu Writes Because Storytelling Is What Makes Us Human." *AudibleBlog*. 3 March 2021. https://www.audible.com/blog/ken-liu-writes-because-storytelling-is-what-makes-us-human. Accessed 10 July 2023.

doi:10.6342/NTU202302702

De Smedt, Johan and Helen De Cruz. “The Epistemic Value of Speculative Fiction. Mid-west Studies in Philosophy.” *Midwest Studies in Philosophy*. vol. 39, no.1, 2015, pp. 58-77. *Research Gate,* doi:10.1111/misp.12035/abstract.

Donovan, Kevin P. “‘Development’ as if We Have Never Been Modern: Fragments of a Latourian Development Studies.” *Development & Change*, vol. 45, no. 5, Sep. 2014. *Academia*, http://dx.doi.org/10.1111/dech.12117.

Grossman, Lev. “Ted Chiang: Scientific Method.” *Locus Magazine*. 15 July 2011, https://locusmag.com/2011/07/ted-chiang-scientific-method/. Accessed 20 July 2023.

Heinlein, Robert A. “On The Writing of Speculative Fiction.” *Science Fiction Criticism: An Anthology of Essential Writings*. ed. Rob Latham, Bloomsbury Academic, 2017, pp. 17–21. *Bloomsbury Collections*. http://dx.doi.org/10.5040/9781474248655.0008.

Instone, Lesley and Affrica Taylor. “Thinking About Inheritance Through the Figure of The Anthropocene, From the Antipodes and In the Presence of Others.” *Environmental Humanities*, vol. 7, no.1, May 2016, pp.133–150. *Duke UP*, doi: https://doi.org/10.1215/22011919-3616371.

Kant, Keshav. “Interview With Ken Liu, Author of Silkpunk Epic Fantasy Series the Dandelion Dynasty.” *Off Color*. 30 Jan. 2023, https://offcol-our.org/2023/01/30/interview-ken-liu-the-dandelion-dynasty/. Accessed 25 July 2023.

Latour, Bruno. “An Attempt at a ‘Compositionist Manifesto.’” *New Literary History*, vol. 41, no. 3, 2010, pp. 471–90. *JSTOR*, http://www.jstor.org/stable/40983881. Accessed 24 July 2023.

doi:10.6342/NTU202302702

---. “Another Way to Compose the Common World.” *Journal of Ethnographic Theory - HAU,* vol.4, no.1, 2014, pp.301 - 07. *Journal of Ethnographic Theory,* doi: https://doi.org/10.14318/hau4.1.016.

---. “Love Your Monsters: Why We Must Care for Our Technologies as We Do Our Children” *The Breakthrough Institute*, no.2, Feb. 2012. *The Breakthrough Institute*, https://thebreakthrough.org/journal/issue-2/love-your-monsters.

---. “On Technical Mediation- Philosophy, Sociology, Genealogy.” *Common Knowledge*, vol. 3, no.2, 1994. *Bruno Latour*, http://www.bruno-latour.fr/sites/default/files/54-TECHNIQUES-GB.pdf.

---. *War of the Worlds: What about Peace?* trans. Charlotte Bigg, ed. John Tresch. Prickly Paradigm P, 2002.

Liu, Ken. “An Advanced Reader’s Picture Book of Comparative Cognition.” *The Paper Menagerie and Other Stories*. Saga P, 2016.

---. “Altogether Elsewhere, Vast Herds of Reindeer.” *The Hidden Girl and Other Stories*. Saga P, 2020.

---. “Cosmic Spring.” *Lightspeed Magazine*. no. 94, march 2018. *Lightspeecd Magazine*, https://www.lightspeedmagazine.com/fiction/cosmic-spring/.

---. “The Gods Have Not Died in Vain.” *The Hidden Girl and Other Stories*. Saga P, 2020.

---. “The Gods Will Not be Chained.” *The Hidden Girl and Other Stories*. Saga P, 2020.

---. “The Gods Will Not be Slained.” *The Hidden Girl and Other Stories*. Saga P, 2020.

---. “Staying Behind.” *The Hidden Girl and Other Stories*. Saga P, 2020 .

---. “The Waves.” *The Paper Menagerie and Other Stories*. Saga P, 2016.

---. “Story Notes: ‘The Waves’ in Asimov’s.” *Ken Liu Writer*, 1 Oct. 2012. kenliu.name/blog/2012/10/01/story-notes-the-waves-in-asimovs/.

doi:10.6342/NTU202302702

Mo, Alejandro. “Interview with Ken Liu.” *Dune’s Jedi*. 8 Feb. 2019, https://dunesjedi.wordpress.com/2019/02/08/interview-with-ken-liu/. Accessed 24 July 2023.

Moffat, Luke. “Putting Speculation and New Materialisms in Dialogue”. *Palgrave Commun,* vol.5, no. 11, 2019, pp.1-5. *Nature Journal*, doi: https://doi.org/10.1057/s41599-019-0219-8.

Murgia, Madhumita. “Sci-Fi Writer Ted Chiang: ‘The Machines We Have Now are Not Conscious.’” *Financial Times*. 2 June 2013, https://www.ft.com/content/c1f6d948-3dde-405f-924c-09cc0dcf8c84. Accessed 24 July 2023.

Ouellette, Katherine. “Modern Mythmaking in Ken Liu’s ‘The Hidden Girl and Other Stories.’” *WBUR News*, 24 Feb. 2020, www.wbur.org/news/2020/02/24/ken-liu-the-hidden-girl-and-other-stories. Accessed 24 July 2023.

Oziewicz, Marek. “*Speculative Fiction.” Oxford Research Encyclopedia of Literature*. Oxford UP, 2017. https://oxfordre.com/literature/view/10.1093/acrefore/9780190201098.001.0001/acrefore-9780190201098-e-78.

Singh, Vandana. “The Occasional Writer: An Interview with Science Fiction Author Ted Chiang.” *The Margins.* 3 Oct 2013, https://aaww.org/the-occasional-writer-an-interview-with-science-fiction-author-ted-chiang. Accessed 10 July 2023.

Stengers, Isabelle and Debaise, Didier. “The Insistence of The Possible for a Speculative Pragmatism,” *Multitudes*, vol. 65, no. 4, 2016, pp. 82-89. *Cairn Info*, doi: https://doi.org/10.3917/mult.065.0082.

doi:10.6342/NTU202302702

Tabler, Elizabeth. “An Interview with Ken Liu.” *Grimdark Magazine*. 4 Dec. 2021, https://www.grimdarkmagazine.com/an-interview-with-ken-liu/. Accessed 10 July 2023.

Yeh, James. “An Interview with Ted Chiang.” *Believer Magazine*, 2 Dec. 2019, www.thebeliever.net/an-interview-with-ted-chiang/. Accessed 10 July 2023.

Wang, Mary. “Ken Liu: ‘We Get to Define the Stories We Want to Be Told About Us.’” *Guernica Magazine*. 28 May 2020, https://www.guernicamag.com/miscellaneous-files-ken-liu/. Accessed 10 July 2023.

Wilk, Elvia, et al. “Four Sci-Fi Writers on Fiction, The Future, And Imagining Alternative Realities.” *Roadside Picnic | Ssense*, Apr. 2020, www.ssense.com/en-us/editorial/culture/roadside-picnic. Accessed 04 July 2023.

doi:10.6342/NTU202302702