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Postcapitalism in Space: Kim Stanley Robinson's Utopian Science Fiction

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> It's a very peculiar moment in history, because the disastrous future, the dystopia, is quite possible, and we're in many ways on course to it: if we continue to do what we're doing now, we're heading that way. On the other hand, the possibility for utopia is also there. We're powerful thinkers on this planet, and we can think our way out of this one by using the technology that's called "language," "rule of law," and "justice." These are the technical solution.[1]

In the era of global capitalism, Fredric Jameson's famous quip that it's easier to imagine the end of the world than the end of capitalism has become one of the most notorious clichés of critical theory. From Mark Fisher's "capitalist realism" to Subhabrata Bobby Banerjee's "necrocapitalism," neoliberalism's stifling effects on our ability to imagine alternatives has been widely — one might even say exhaustively — diagnosed. Neoliberalism's global trends of industrial deregulation, post-Fordist "just-in-time" delivery systems, and wave after wave of primitive accumulation in the global South are all aspects of twenty-first-century life that have clearly impeded our ability to articulate any meaningful kind of "utopian imaginary."[2]

As slippery and ambivalent a concept as it may be, utopianism is of vital importance to a culture of political resistance. Not only because it holds out the promise of a brighter, better world, but because it insists on imagining alternatives. Or, as China Miéville has put it in his introduction to a new edition of Thomas More's *Utopia*: "Utopianism isn't hope, still less optimism: it is need, and it is desire. For recognition, like all desire, and/but for the specifics of its reveries and programmes, too; and above all for betterness *tout court*. For alterity, something other than the exhausting social lie. For rest. And when the cracks in history open wide enough, the impulse may even jimmy them a little wider."[3] The cultural articulation of utopian science fiction is so important in the neoliberal age because we seem to lack the tools to force the cracks of history wider on those moments when they do seem to open. For even as our cultural, political, and economic realms seem bereft of long-term programs, there has been no shortage of impulses towards organized resistance. The question, then, is how to make these momentary bursts sustainable in the long term.

The traditional Left's decades-long abandonment of political resistance, exemplified by the Clinton/Blair pivot towards the technocratic and business-friendly "Third Way" that typifies neoliberal governmentality, has been accompanied in the cultural realm by a related turn towards texts that reflect and in many ways normalize a pervasive atmosphere of dystopian

inevitability. This is perhaps most obvious in the twenty-first century's increasingly ubiquitous "quality TV" meta-genre, with its structural emphasis on complex characters and elaborate plots that inevitably portray a crisis-prone world in perpetual decline. It is also visible in the surging popularity over the last decade of zombie franchises like *The Walking Dead*, and their ongoing articulation of a bleak and precarious future completely bereft of hope. And it is equally evident in the science fiction film genre's oft-lamented preponderance for dystopian fictions, constantly immersing us in visions of futurity that depict a wide variety of global ecological, economic, technological, social, and political catastrophes.[4]

In this sense at least, science fiction seems to have lost some of the political potential for which philosophers, critical theorists, and literary critics have so often celebrated the genre. Without making overly precise claims about a notoriously "fuzzy" genre, science fiction emerged as a popular genre in the wake of the Industrial Revolution, and provided a cultural vocabulary of imagery and narratives that resonated above all as American capitalism became the defining force in postwar geopolitics. The slick spaceships, intergalactic odysseys, and daring astronauts embodied thoroughly utopian perspectives on a future of uninterrupted growth and technological progress, as interplanetary exploration came to form a dazzling "final frontier" for literally endless colonial expansion.

But in the neoliberal era of looming ecological disaster, unchecked economic crisis, and the swift erosion of a commonly shared public sphere, science fiction's utopian imaginary seems to have been eclipsed and displaced by an *apocalyptic imaginary*. Even when a utopian future is glimpsed, it can only be conceived as something that must be preceded by an apocalyptic nightmare: "This is not quite a dystopia: it's a third form — apocatopia, utopalypse — and it's all around us. We're surrounded by a culture of ruination, dreams of falling cities, a people-less world where animals explore."[5] Nevertheless, in the domain of science fiction literature, affairs are at least somewhat less bleak. As one of the leading voices in American speculative fiction, Kim Stanley Robinson has largely resisted the widespread urge to embrace various forms of sentimental disaster porn, of which Cormac McCarthy's *The Road* may be the pre-eminent example within the literary field. Instead, he has tirelessly worked towards visions of a future that may be described as utopian — not only in the sense that he continues to express hope for a future that has the potential of "betterness," but also because he engages directly with the key question of how to overcome the challenges posed by global capitalism.

In this chapter, I will approach some of the key texts in Robinson's substantial body of work as productive interventions that question, critique, and challenge neoliberalism's cultural logic. Starting with his widely-read "Mars Trilogy"— *Red Mars* (1992), *Green Mars* (1994), and *Blue Mars* (1995) — I will first demonstrate how Robinson constructs a critical utopia in response to the development of global capitalism, while constantly foregrounding the fundamentally political nature of futuristic world-building. I will then contrast this specific type of critical utopia with his later novels *2312* (2012) and *Aurora* (2015), which struggle to maintain his earlier work's optimism while also engaging more directly with the vanishing horizons of neoliberal capitalism that has become increasingly global and increasingly futureless. Throughout the chapter, I will refer to some of his other speculative work to offer a more

complete picture of Robinson's literary project, and how it relates back to the genre's increasingly beleaguered utopian potential. But first, I must sketch out the larger context of neoliberalism, and how specific aspects of this cultural logic inform my own approach to literary science fiction.

A Futureless World: Science Fiction and Neoliberalism's "Indebted Man"

When the end of the Cold War inspired Francis Fukuyama to celebrate the passing of Really Existing Socialism as the "end of history," the term had a utopian resonance that has been notably absent in the actual historical era that followed. In the 1990s, the brief illusion of a global capitalism that would allow for limitless growth and accumulation was soon punctured by a tsunami of crises that revealed the material reality of globalization: a landscape of radically uneven development, growing socioeconomic inequality, and a thoroughly unstable and crisis-prone economic system.

But at the same time, this post-historical perspective continues to ring true in neoliberalism's fundamentally futureless sensibility. The combination of an increasingly imperial political and economic structure of "flexible accumulation" and the ongoing imposition of austerity policies has resulted in an intensification of capitalism's fundamental unsustainability.[6] As Marc Augé has reflected in his theoretical intervention *The Future*,"The real problems with democratic life today stem from the fact that technological innovations exploited by financial capitalism have replaced yesterday's myths in the definition of happiness for all, and are promoting an ideology of the present, and ideology of the future *now*, which in turn paralyses all thought about the future."[7] In the context of global capitalism, this paralysis clearly impedes our ability to relate to the future as a horizon for change, hope, or improvement. Augé connects this post-historical structure of feeling to neoliberalism as a system of social relations that isolates the individual from any kind of meaningful sense of collectivity. It is the direct result of the clear-cut ways in which neoliberalism reduces individuals to the level of competitors who are forced to act as "entrepreneurs of the self": constantly having to reinvent, re-educate, and rebrand themselves within a flexible and thoroughly precarious environment, where the future has no promise to offer but that of endlessly diminishing returns.[8]

This evaporating horizon of neoliberalism's cultural, political, and economic logic lies at the heart of Maurizio Lazzarato's figure of "the indebted man" as global capitalism's "existential condition."[9] Neoliberal economy is structured entirely upon the debtor/debtee relationship, as the financialization of postindustrial capitalism has created a system in which the vast majority of profits are the product of speculation rather than labor, and in which debt creation "has been conceived and programmed as the strategic heart of neoliberal politics."[10] Examples abound of the many ways in which the debtor relationship has been used as a powerful tool to discipline individuals, communities, and even entire nations, from the European Union's abject humiliation of Greece to the ways in which hedge fund owners profited from subprime mortgage forfeitures in the 2008 financial crisis.

This figure of the indebted man — or, to put it less phallocentrically, the indebted person — is crucial to understanding neoliberalism's futureless world, because our perpetual present is in a

very real and quite literal sense already living in a time that is thoroughly out of joint: the precarious wealth and privilege of the Western world is created not on the basis of labor, but of capital that has been "borrowed" from an increasingly dire-looking future. Little wonder, then, that our ability to conceive of any kind of future outside of an ever-more oppressive form of capitalist realism and universal indebtedness has been so thoroughly compromised. Therefore, in this world without alternatives, we not only have great need of speculative narratives that articulate a utopian future, but we have also developed a suddenly-urgent interest in thought experiments that are emphatically *postcapitalist*.

More than any other literary genre, science fiction has a long and varied tradition of expressing utopian motifs in a variety of constellations. While utopian fiction isn't necessarily science-fictional, the political potential of science fiction as a genre makes it particularly productive as a vessel for utopian speculation. For even if some claims about science fiction's privileged relationship to critical theory are perhaps exaggerated, one can nevertheless clearly recognize in its non-fantastic forms of cognitive estrangement an irreducibly political platform for speculating about the future.[11] Moreover, the very genre traditions that have long disqualified science fiction as a legitimate literary form for the vast majority of scholars and critics enhance this political potential: science fiction literature has tended to favor descriptions of complex political, social, and technological systems over psychologically "realistic" representations of individual characters, and have all too often sprawled across multiple volumes.

Key works in this register can be located in American science fiction from the 1930s "Guernsback Age" of pulp fiction through to the 1960s "Second Wave" of the genre. Authors from Edgar Rice Burroughs and Robert A. Heinlein to Isaac Asimov and Arthur C. Clarke drew heavily on industrial capitalism's utopian imaginary of progress through technology and limitless expansion.[12] It is surely no accident that the most iconic embodiment of this particular variety of science fiction was the TV series (and transmedia franchise) *Star Trek*, which was grounded in the spirit of industrial capitalism and its "faith in rationality and long-term planning…and, above all, by the very gigantism of organizations."[13] *Star Trek*'s sleek, shiny surfaces and post-scarcity melting-pot society expressed a utopian vision that was firmly interlocked with a triumphalist postwar capitalism, its widely appealing vision of the future based on what Raymond Williams described as science fiction's "civilizing transformation, beyond the terms of a restless, struggling society of classes."[14]

Despite the seemingly obvious colonialist implications and uncomfortable militaristic tendencies of *Star Trek*'s particular brand of science fiction, the franchise did also help popularize the genre in a way that foregrounded its progressive agenda and liberal politics, especially within the lively and diverse fan communities that fostered it and kept it alive for many years.[15] Beyond the rather limited ideological reach of the series, or, indeed, beyond that of the most popular literary science fiction of the twentieth century, the genre in this period helped sustain a vision of futurity that was progressive, if only in a somewhat limited and mechanical sense: even the most politically reactionary science fiction authors (of which there have been many) based much of their work on a concept of the future in which humanity had miraculously survived the long twentieth century, emerging into a wide variety of futures that routinely extended beyond the constraints of

capitalist exploitation, colonialist oppression, petty geopolitical conflicts, and material scarcity. And in a great many of the now-canonical works in the science fiction tradition, this utopian future was indeed expressly connected to politically progressive social and cultural values.

Therefore, whatever political objections one might justifiably raise against any individual work of science fiction, or even to how the genre's utopian imaginary has also maintained many social, cultural, and economic hierarchies, science fiction has struggled to express utopian alternatives to global capitalism from the 1990s onward. The post-Cold War order in which any system but capitalism was declared irrelevant has stymied the genre and the important cultural work it has always performed. Even as speculative fiction has been increasingly gentrified, readers and critics have frequently complained about the "dystopian trend" that has so clearly afflicted science fiction in the twenty-first century. In literary fiction, as in other media, fantastic fiction has not only been made more fashionable, but also — critically — more "realistic."

The problem, then, in terms of the social and political meaning-making that goes on around a genre like science fiction is that "realism" has become virtually synonymous with "capitalist"— and therefore if not dystopian, at the very least thoroughly anti-utopian. The neoliberal epidemic that has roughly coincided with the age of global capitalism has instilled in us what Fisher has called a "business ontology," in which it is simply taken for granted that nothing makes sense unless it is part of a market and organized for profit.[16] I have described this increasingly ubiquitous embrace of "post-ideological" capitalist realism elsewhere as a kind of *fantastical capitalism*: "'fantastical' because — superficially at least — they present us with story-worlds totally unlike our own, and 'capitalism' because they incorporate and strengthen capitalism's most basic social and cultural logic, while alternatives are systematically rejected as 'unrealistic.'"[17]

The supreme challenge, then, for speculative genres like science fiction in the neoliberal era is to articulate meaningful alternatives that are neither nostalgic pastiches of Space Age techno-futurism, nor the despairing extensions of neoliberal thinking that typify most current varieties of fantastical capitalism. Or, to put it differently: in order for science fiction to regain at least some of its utopian power, it must find ways to counter neoliberalism's futureless mindset with speculative visions that acknowledge capitalist realism's cul-de-sac without falling prey to its omnivorous spirit. Kim Stanley Robinson's Mars Trilogy provides a good starting point for examining some of the ways in which this important cultural work can be accomplished.

"They Could Do Anything": 1990s Utopianism in the Mars Trilogy

"Get Your Ass to Mars!" Arnold Schwarzenegger said it best when his video image addressed his brainwashed self in Paul Verhoeven's iconic science fiction classic *Total Recall* (1990). This eagerly-quoted line — a favorite among film trivia buffs — expresses more than the Austrian Oak's familiar tendency to interrupt violent action movies with idiosyncratic quips and one-liners: the phrase also plays on the genre's longstanding obsession with the Red Planet as a projected space of radical alternatives to our own reality. From the deadly reverse-colonialist invasion of H.G. Wells's *The War of the Worlds* (1898) and its many adaptations to Edgar Rice Burroughs's thrilling adventureland of Barsoom in his *John Carter of Mars* cycle (1912–1964) to Ray Bradbury's *Martian Chronicles* (1950) to the recent paean to neoliberal austerity politics

in *The Martian* (2015), the red planet has occupied a privileged position in the genre's long history. And as the most frequently discussed object of potential planetary colonization, getting one's ass to Mars is by now commonly understood to be the most obvious first step towards a human future that extends beyond planet Earth.[18]

Kim Stanley Robinson's Mars Trilogy gave new life to the planet's prominent position within speculative fiction, and definitively established its author's reputation as the most widely acclaimed and politically engaged working within the genre. The hugely prolific novelist has developed an impressively diverse body of work over the past three decades, publishing a long list of speculative works about theology, alternative history, prehistorical human society, near-future fiction, as well as the more traditional type of "hard sci-fi" about rocket ships, space exploration, interplanetary colonization, artificial intelligence, and other well-known science fiction genre tropes. Additionally, he has been actively involved with scholarly work on science fiction studies and climate change, speaking with some frequency at academic conferences, contributing work (both short fictional works and nonfictional essays) to academic publications,[19] and co-editing the scholarly collection *Green Planets*.

The Mars Trilogy constitutes an ambitious attempt to bring together the adventurous space-exploration epics of classic science fiction with more contemporary debates and fantasies about space exploration and resource management. Across three sprawling volumes and the companion volume *The Martians* (1996), the books detail the incremental colonization and terraforming of the planet across a period of 200 years. Like many other works in the hard sci-fi register, long sections of the books are devoted to elaborate descriptions of technological innovations that make human life on other planets possible. The deployment of enormous floating "sun mirrors" that help warm up the Martian atmosphere offers a good example of the books' consistent focus on explanations of how things work, in a way that is familiar from any number of science fiction precursors.

But while Robinson's obviously passionate interest in technology and "hard science" is in many ways typical of the genre and its audience, his treatment of its role in space exploration differs substantially from the aforementioned *Star Trek* tradition. In Robinson's work, technology never represents the straightforward extension of human abilities. Like any good historical materialist, he regards technological innovation not as the positivistic means through which a liberal-humanist ideal of "progress" is made possible. Instead, the books' many futuristic technologies are consistently treated as contingent upon the shifting organization of human social, economic, and political relations, and often as unpredictable in the long-term effects of what Williams describes as science fiction's "technological transformation" of human societies.[20]

While it is notoriously difficult to articulate this perspective in the literary novel, with its stubborn focus on the individual human psyche, the science fiction genre lends itself unusually well for precisely this kind of framework. The serialized world-building book cycle has a particularly strong potential for such an approach, as it has often privileged the generation-spanning description of evolving *systems* of political, social, and economic relations over the detailed specifics of psychological verisimilitude or formal experimentation.

As a trilogy of formidable novels and an expansive anthology of short fiction, the Mars books vividly illustrate Robinson's grand ambition of constructing utopian fiction in the context of neoliberalism. As Philipp Wegner has pointed out, their appearance in the 1990s places them within a unique historical tension: while the unholy geopolitical alliance between Clinton and Blair marked the virtual annihilation of traditional left-wing politics in the richest countries, the end of the Cold War as an expression of global capitalism's fabled "end of history" also opened up a space for dynamic new anti-globalization movements.[21] In other words, while this era certainly saw the swift rise of a new imperial order united under neoliberal doctrine, it was also a moment of possibility for artists, activists, and, indeed, science fiction novelists to explore alternative possibilities. In this sense at least, we can appreciate the Mars books as an elaborate and sophisticated meditation on the radical alternatives that surface as the immanent result of a complex set of economic, political, and technological transformations.

For the uninitiated: the trilogy roughly charts the colonization and terraforming of the red planet, from the arrival of the first manned expedition (populating the planet with the initial group of settlers popularly dubbed the historic "First Hundred") through an eventful 200 years, culminating in the establishment of Mars as a fully habitable ecosystem teeming with diverse life-forms and a thriving post-capitalist society. The first book, *Red Mars*, narrates the development of the first human settlements, focusing on the one hand on the realistic application of speculative science, and on the other on the complex social and political debates that finally erupt into a full-blown revolution on Mars and a devastating world war back on Earth. The second volume, *Green Mars*, introduces the first generation of Mars-born humans, whose radically different life experience yields new social, cultural, and political practices that are reflected metaphorically in the ongoing terraforming around them. Finally, the third book, *Blue Mars*, builds towards a second, more successful political revolution, as the now-habitable Mars establishes its independence from Earth, while also opening itself up further to immigration from humanity's increasingly impoverished and inhospitable home planet.

Throughout the 200 years of future history these books map out across a good 2,200 pages, over two dozen main characters emerge, and countless conflicts, debates, disasters, experiments, innovations, and setbacks constitute an obviously crowded narrative that it would be pointless to summarize in further detail. As a triptych made up of three consecutive novels, the Mars trilogy offers remarkable narrative and thematic coherence due in part to Robinson's most pragmatic *novum*[22]: the introduction of a "longevity treatment" that radically extends the human lifespan, thereby allowing several of the first book's main characters to experience the trilogy's entire chronological span.

In terms of the work's formal qualities as a work of literature, this particular novum facilitates the reader's emotional investment in Mars's future history, as this technological intervention simplifies the seemingly inevitable onslaught of new and unfamiliar characters in most multigenerational epics. Without the structural and emotional continuity provided by a recurring set of characters, such series all too easily descend into the kind of techno-determinism of Isaac Asimov's influential *Foundation* cycle, articulating strangely mechanical utopian trajectories made artificial and unattractive by projecting a weirdly "impoverished form of

human life."[23] The Mars trilogy's longevity serum thus kills two birds with one stone by addressing a formal problem in a way that fits elegantly within the books' generic framework. But above all, the way this scientific innovation is developed throughout the cycle offers an ideal illustration of the dialectical role played by technology throughout Robinson's work. What could all too easily become a simplistic way of imagining a posthuman future in which technology provides the easy fulfillment of human needs and desires, is marked here by the messy, unpredictable, and fundamentally political questions that technological advances tend to raise once they start interacting with human communities.

The genre's dominant liberal humanist tradition has largely embraced the Kurzweilian perspective, in which "health, wealth, and immortality — not to mention the coolest computer games and simulations ever — will be available, at no cost, to everyone."[24] But while the promise of a post-scarcity future remains a meaningful ideal for utopian politics, the means by which this is accomplished opens up many ideological pitfalls that play directly into the neoliberal project and its ideological agenda. Or, in other words, approaching science and technology as agents that operate outside of a material, economic, and political context sweeps under the carpet the combined and uneven development of global capitalism. The risk of science fiction's post-Singularity storyworlds is therefore the suggestion of a frictionless utopia that is magically brought about "without incurring the inconvenience of having to question our current social and economic arrangement."[25] If the political function of fantastic and speculative literature is indeed to reflect on possible alternatives to our own social and material conditions, the explicit questioning of political and economic arrangements is therefore obviously a crucial ingredient.

The longevity treatment in the Mars trilogy evades this trap precisely by operating as an *actor* (in the Latourian sense) rather than as the equivalent of a magic bullet. Firstly, the treatments soon prove to be flawed, introducing unexpected side effects that undermine the easy extension of human lifespans. Another complicating factor is the technology's impact on human subjectivity and social relations, as the co-existence of older and younger generations creates a novel and often volatile societal dynamic with — again — unforeseeable and fully immanent consequences. But finally, and most crucially, the longevity treatments are consistently presented as a sign of privilege that is only available to a small elite within an increasingly polarized society. As Martian terraforming takes shape, the distinction between the once-red planet and Earth increasingly resembles the combined and uneven development of contemporary global capitalism, where only the most obscenely wealthy are guaranteed access to advanced technology and life-extending health care.

This move consistently returns the books' focus from the futuristic application of new technologies as straightforward extensions of human abilities to markers of social status and economic privilege. The revolutions, interplanetary conflicts, and civil wars that ultimately pave the way towards a more utopian future — contested and unstable as it may be — revolve primarily around this issue, as the increasingly desperate populations left on Earth constitute a new proletarian class that is understandably anxious to relocate to the flourishing Martian colonies. In other words, Robinson's careful optimism manages to articulate a human future of

possibility, struggle, and choice that springs forth from the 1990s' ambivalent "post-historical" moment.

The trilogy's depiction of political struggles like this one makes its utopian energy so meaningful in its specific moment within the larger context of neoliberalism's historical and cultural development. It established Robinson as a distinctly utopian voice within the larger field of contemporary science fiction. But in his more recent novels that revisited the trilogy's physical and thematic terrain, the author has consistently tempered the grandiose world-building ambitions of his most popular and widely read work. In this chapter's second section, I will therefore draw on the two major science fiction novels Robinson published in what Gerry Canavan has described as his "middle period": *2312* (2012) and *Aurora* (2015).

"The Command to be Free Is a Double Bind": *2312*'s Dialectical Accelerationism

If the 1990s marked the dawn of absolute global capitalist hegemony, it also constituted a clear moment of possibility. But the emergent anti-globalization movement, which peaked in 1999 with its successful disruption of World Trade Organization (WTO) meetings in Seattle, was soon undercut and displaced in the wake of the terrorist attacks of September 11, 2001. Using the tried and tested neoliberal enforcement techniques described by Naomi Klein as "the shock doctrine," the attacks became the political justification for a global shock-and-awe campaign that doubled down on capitalist imperialism.[26] The resulting post-9/11 order identified new enemies to justify its never-ending War on Terror, while the 2008 subprime mortgage crisis ended up showing not so much the vulnerability of finance capital, but the extreme lengths to which the political establishment would go to maintain that very system.

Now, after several decades of global austerity and neoliberalism's "There Is No Alternative" (TINA) mantra, utopian scenarios are in short supply indeed. After decades of privatization and deregulation have effectively ruined the publicly funded resources and facilities that made up the welfare state, economic resentments have formed an unholy alliance with the War on Terror's anti-Muslim rhetoric. As a result, the biggest threat to the neoliberal order is no longer the politically progressive anti-globalization movement, or the radical "folk politics" of the various Occupy campaigns: instead, the emergent "populist" fascism of the reactionary far right has forced even Christine Lagarde, president of the International Monetary Fund (IMF), to concede that the neoliberal rulers underestimated how much damage the brutal imposition of austerity policies would inflict.[27]

Thus, even as neoliberal hegemony seems like it might be on its last legs, the past 15 years of capitalist realism have obviously diminished our ability to articulate meaningful alternative futures. Having followed the Martian cycle with the similarly optimistic near-future "Science in the Capital" trilogy (2004, 2005, 2007),[28] Robinson returned to the realm of interplanetary colonization and world-building with the ambitious novel *2312*. While it isn't presented as an official sequel to the Mars books, *2312* takes place in a storyworld that shares many specific elements with his best-known work, including the mobile city of Terminator on Mercury, the

availability (again, only to the most privileged group) of longevity treatments, space elevators, and a thriving post-capitalist society on Mars. But while *2312* is stylistically much more ambitious than the Mars Trilogy, its thematic focus is narrower, and its investigation of technology introduces new elements that complicate a straightforward utopian reading of his ongoing future history.

Contrary to the sprawling Mars Trilogy, with its dozens of characters and its 200 years of geoengineering, revolution, philosophical debate, and civil warfare, *2312* is devoted to a single protagonist and a straightforward narrative arc, which mostly takes the form of a police procedural. The plot revolves around artist and former terrarium designer Swan Er Hong, whose body has not only been transformed by the longevity treatment, but who has also undergone many other forms of elective enhancement and hybridization, including the addition of a penis, a splicing with feline DNA that allows her to purr, and the experimental ingestion of alien microbes, which have taken up residence in Swan's intestines. The book's narrative is set in motion by the death of her step-grandmother, which is followed by a series of mysterious terrorist attacks, one of which brutally destroys the city of Terminator.

As Swan's investigation leads her to unsettling new forms of artificial intelligence, the narrative is repeatedly interrupted by text fragments drawn from computer systems and forms of "mechanical writing" that establish a kind of dialogue with the vocabulary of 1920s American modernists — most notably the fragmentation pioneered by John Dos Passos in his USA trilogy. Like its literary references, *2312* is thoroughly preoccupied with technological acceleration and its utopian implications, but also more emphatically with its alienating and disruptive effects. Thus, in addition to building upon modernism's utopian tendencies, Robinson connects this cultural legacy to twenty-first century anxieties about mechanization, surveillance technology, and posthumanism.

In the context of neoliberalism, labor's perennial "struggle against machinery" has taken on new forms of expression that are fundamental to capitalism's never-ending process of accumulation.[29] In current debates about the necessity to break away from this unsustainable and exploitative cycle, the term *accelerationism* has come to occupy a central position. As Benjamin Noys has explained it, accelerationism has attracted so many theorists of post-capitalism because it suggests a radical embrace of technology rather than the traditional hostility towards mechanization that typifies classical Marxism. And for those of us who worry about the effects of mechanization on wages, unemployment, and global proletarianization, one can certainly understand the attraction of a theoretical framework in which the central premise seems to propose that "the only way out of capitalism is to take it further, to follow its lines of flight or deterritorialization to the absolute end, to speed-up beyond the limits of production and so to rapture the limit of capital itself."[30]

Following the basic logic of what we might call a kind of "banal accelerationism," we can easily identify the obvious correspondence with Kurzweil's techno-fetishism, seeing in technological innovation the easy answers to a post-scarcity future that can come about without sacrificing our ongoing love affair with smartphones, tablets, and corporate-owned social media. In this sense, science fiction in the liberal humanist tradition can all too easily offer a tempting utopian vision

that encourages us to double down on our current use of technology without reflecting on it as an active agent within capitalism as a hegemonic system of social relations. In other words, the key tension within the accelerationist debate is the true impasse of neoliberalism, leaving us "neither able to go forward into the 'streamlined' future, nor return to the 'stability' of the Fordist past."[31] Thus, while Robinson's novels clearly present a future that can be described as more "streamlined" in its approach to technology, the key to understanding his politics is precisely the fact that it simultaneously foregrounds technological innovation as a site of struggle.

This ambivalence about technology in a post-capitalist future is much more pronounced in Robinson's middle-period novels like *2312* than it was in the more straightforwardly utopian Mars Trilogy. Always conscientious about showing how technological "progress" rarely occurs without substantial sacrifices, drawbacks, and unforeseen consequences, the 200-year chronology of the Mars books nevertheless reassures us — to misquote Dr. Martin Luther King, Jr.— that the arc of history is long, but still bends towards full communism. In the emphatically post-9/11 *2312*, Robinson expresses a more contradictory (indeed: more properly dialectical) approach to these questions of technological progress and the promises of a notably Janus-faced accelerationism.

These two faces are most clearly articulated in the novel's careful layering of protagonist Swan Er Hong's complex relationship with futuristic technology. Like the best works of science fiction, *2312* works both as an attempt at speculation and extrapolation about the future, and as a metaphorical exaggeration of thoroughly contemporary tensions and anxieties. To illustrate: Swan's quixotic accumulation of physical "enhancements" through technological intervention presents a rationally imaginable future, while at the same time articulating our current tendency to approach these technological hybridizations as consumer choices that are experienced as purely individual forms of liberation and experimentation. The matter-of-fact way in which the book's now-commonplace modification of human bodies has more or less eradicated the traditional gender binary expresses a meaningful (and thoroughly utopian) aspect of current debates about civil rights, gender, and social justice.

By the same token, Swan's physical incorporation of a miniature quantum computer (or "qube") corresponds rather obviously with our growing dependence on mobile technology that we carry on (or even inside) our bodies. Relatable anxieties about such invasive technological enhancement are displaced at least in part, again by using familiar tropes: giving names, voices, and other human-seeming attributes to these new technological agents makes them seem more like pets or servants, and therefore less likely to disturb the traditional binary of power, in which technology is no more than a straightforward extension of human agency. But through the main plot, in which Swan's investigation into the attack on Terminator points her towards Singularity-like developments of exponential AI growth, she becomes more aware of technology's more threatening implications.

We witness this tension firstly through Swan's growing suspicions about her embedded qube, nicknamed Pauline, who she comes to realize is both more alien and less controllable than she had always assumed. After her first encounter with fully artificial human bodies driven by powerful networked qube AI ("Quebes"), Swan discovers that the Terminator attack could only have been carried out by almost immeasurably complex qube calculations, thus raising the

question whether quantum computers had been merely complicit in this violent act, or whether it constituted an act of war by this new posthuman intelligence. Therefore, by intensifying the Mars Trilogy's Latourian approach to technology as an active agent within complex social networks, *2312* rejects the positivist Kurzweilian perspective on the Singularity, offering in its place a dialectical conception of this familiar science fiction motif.

This contradiction is emphasized by shifting the Mars Trilogy's ongoing debate about political change from purely human/humanist coordinates to the terrain of radical posthumanism. This, too, builds upon a longstanding genre tradition, the best-known example of which is surely Isaac Asimov's *I, Robot* cycle of short stories. But Robinson inserts this dynamic into a narrative context where the contradictions inherent in accelerationist thought are constantly foregrounded — most obviously in the competing de- sires between the individual's practical usage for and affective attachment to advanced mobile technology on the one hand, and the larger social, political, and economic threats posed by post-Singularity AI on the other. This double bind would be pushed even further away from the Mars cycle's expansive utopianism in Robinson's next science fiction novel, *Aurora*.

Earth: The Final Frontier — *Aurora*'s Eternal Return

Throughout his rapidly expanding literary oeuvre, Robinson has always tempered his utopian optimism with a sustained interest in the material constraints that stubbornly impose themselves on science fiction's flights of fancy. This is evident not only in the dialectical organization of his future histories, but also in his many novels that explore the past, present, and immediate future: the alternative-history *The Years of Rice and Salt*, the Paleolithic coming-of-age narrative *Shaman*, and the near-future "Science in the Capital" trilogy all share an obvious interest in exploring humanity's most basic needs — not only in terms of technologies and material necessities, but also and even especially in creative, social, sexual, emotional, and spiritual well-being. This richness of lived experience gives expression to Robinson's own form of cultural materialism, as he uses the context of speculative fiction to approximate the communist ideal Marx and Engels so famously described as actual freedom: "to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticise after dinner…without ever becoming hunter, fisherman, herdsman or critic."[32]

If Robinson's work can be described as an ongoing effort to create story- worlds that make this kind of utopianism imaginable if not realizable, the focus in his middle period has shifted to the material constraints that hold back this "communist horizon."[33] As he has repeated throughout his many academic keynotes and public lectures, utopia is not only worth aspiring to, but is credibly realizable through the deployment of existing human technologies such as language, the rule of law, and justice.[34] But at the same time, he has emphasized again and again that this utopia is *not* compatible with a capitalist system. The problem therefore once again becomes how to move beyond the increasingly narrow constraints of austerity policies and neoliberal dogma towards a post-capitalist future that is not merely desirable, but necessary for humanity's survival. It is one thing to joke about refusing to settle for anything less than Fully Automated

Gay Space Communism; it's another to comprehend that the alternative seems to be an uninhabitable planet.

Where *2312* illustrated how rapid mechanization and the Singularity trope also introduce new problems that relate back in complex and ambiguous ways to post-9/11 neoliberalism, his more recent novel *Aurora* goes even further in emphasizing the precariousness of human life and our own indebtedness to planet Earth. While both the Mars cycle and *2312* share key components — most notably the longevity treatments — that ground them in similar storyworlds, *Aurora* depicts interplanetary colonization in ways that are simultaneously more ambitious and more constrained. The notable absence of this recurrent Robinsonian trope is in fact key to the novel's narrative organization: it depicts the final stages of a 200-year voyage to one of the nearest habitable planets, aboard a starship on which multiple generations of humans have lived and died over the course of this long journey.

The political issue, then, represents a remarkable inversion of the historical dynamic of the Mars Trilogy: while *Aurora* deals with a similar period and the tantalizing promise of a radically new utopian future, the characters' agency is profoundly limited by their "normal" lifespan. The fact that none of the main characters have experienced life outside of the generation ship even becomes a crucial plot point, as some come to suspect that their revolution may not be the first; in fact, they discover a secret history of failed revolutions pointing towards an undocumented voyage history that has been far more unstable and tumultuous than the strictly linear (and indeed, quite literally teleological) spatial and temporal trajectory they had grown up with. As with the competing political and ecological visions in the Mars Trilogy, the tension mounts on board between those who insist on seeing the original mission to its end, and those who ultimately decide to turn the ship around and return to Earth. While we never learn the fate of the colonists who persist despite the increasingly dire warning signs, the novel's position is abundantly clear:

> Maybe that's why we've never heard a peep from anywhere. It's not just that the universe is too big. Which it is. That's the main reason. But then also, life is a planetary thing. It begins on a planet and is part of that planet. It's something that water planets do, maybe. But it develops to live where it is. So it can only live there, because it evolved to live there. That's its home. So, you know, Fermi's paradox has its answer, which is this: by the time life gets smart enough to leave its planet, it's too smart to want to go. Because it knows it won't work. So it stays home. It enjoys its home. As why wouldn't you? It doesn't even bother to try to contact anyone else. Why would you? You'll never hear back. So that's my answer to the paradox. (Chapter "In the Wind")

To no one's surprise, many science fiction fans didn't take kindly to what felt to some like a disingenuous dismissal of several of the genre's key narrative tropes, rejecting in one fell swoop both the long-held prospect of first contact with alien life *and* the final frontier of planetary colonization and terraforming. What is more: some have taken this rejection as a turn away from science-fictional utopianism and towards the kind of grim capitalist realism that continues to define the neoliberal era of austerity, precarity, and constantly-diminishing horizons.[35]

But *Aurora*'s politics are more complicated, and indeed far more progressive than such a superficial reading would suggest. For while the ongoing financial crisis continues to build up our debt towards the future with financial derivatives and other forms of speculative finance, the ecological crisis of disastrous climate change is further aggravated by global capitalism's futuristic ambitions. In this sense, proliferating "smart city" initiatives for the wealthy and the rhetorical hyperbole of libertarian "visionaries" like Elon Musk and Peter Thiel resonate uncomfortably with the science fiction genre's tradition of limitless expansion. This kind of techno-futurism all too easily yields bizarre neoliberal fantasies, like the staggeringly obtuse design plans for a skyscraper suspended from an asteroid orbiting Earth, making a "daily pass" over downtown Manhattan.[36]

In this context, *Aurora* grounds sf's utopian imaginary in a return to Earth's biosphere that is as alienating as it is invigorating. The book's rejection of space opera's romantic space-exploration trope leads the characters back to the one biosphere that demands our attention most urgently. It is all the more striking that the book's human protagonist Freya — born in outer space surrounded by technology, and "returning" to a completely unfamiliar home after being cryogenically frozen for over a century — emphatically does not experience it as a sentimental homecoming to a more "natural" environment. In a final scene set among the body-surfers enjoying the rough waves on the beach, *Aurora* uncannily reflects the ending of the film *Gravity* (2014), moving back from space into an elemental world of water and air that poses a radically new kind of challenge. If science fiction's most basic logic of cognitive estrangement is about staging strange encounters that cause us to see familiar surroundings with new eyes, then *Aurora*'s provocative return to Earth's gravity well clearly performs this same task. Or, as Hilary Ashton Strang has argued, "It's very hard to picture what it means to belong on a planet, to live on, in, and through a world as we do. Yet it's urgent, and Robinson suggests that we try to do so."[37]

In this case, the book's emphasis on what it means to belong to a planet gives powerful new meaning to the word "debt," which has played such a defining role in the post-1970s development of global capitalism and neoliberal subjectivity. The settlers' failure to colonize the alien world of Tau Ceti posits a limit point to the kind of speculative expansion that has long informed both space opera and the neoliberal project, in different but mostly complementary ways. As we grow increasingly aware of the devastation wrought upon our biosphere by capitalism's insatiable drive towards limitless expansion, subverting and even reversing this dynamic of indebtedness to the future represents an important critical intervention. The debt being called in is not that of neoliberalism's financialized distortions of temporality, with the sole purpose of "possessing the future in advance by objectivizing it."[38] It is rather the existential debt that humanity owes its own biosphere that is reinforced so strongly in Robinson's mid-period fiction.

While *Aurora* therefore might seem like a turn away from the Mars Trilogy's utopian imaginary, it clearly functions as a specifically neoliberal incarnation of Tom Moylan's "critical utopia": it locates the promise for a better future not in science fiction's expansive and imperialist history, but in the recognition of Earth's own environment as our most basic source of meaning and value. At the same time, *Aurora* refuses to collapse back into the reactionary stance that has too

often typified the "Earth First!" movement and many eco-warriors' anti-technological sensibilities. By uniting the primacy of Earth's biosphere with a narrative framework that emphasizes and endorses radical posthumanism, Robinson expresses a utopian vision that is both politically progressive and profoundly anti-capitalist. He proposes that the most important first step for moving beyond capitalist realism lies in the rejection of proto-colonialist frameworks of endless expansion and accumulation. Instead, the far more pressing debt is the one we owe our planet, to which Robinson insists we have no recourse but to return, and return, and return again.

Conclusion

Throughout its long history, science fiction has articulated countless exciting utopian visions of a better future. As a key voice of the genre in the neoliberal age, Kim Stanley Robinson has repurposed some of its most recognizable tropes, and has given them new directions that make them ideologically and politically meaningful in the era of global capitalism. If neoliberalism is indeed defined in many ways by its "futureless" structure of feeling and its apocalyptic sensibility, Robinson has nevertheless found ways of articulating a utopian imaginary that engages directly with global capitalism's defining characteristics.

In the iconic Mars Trilogy, we can recognize the anti-globalization movement's commitment to exploring political and economic alternatives to capitalism in the 1990s. That "interbellum" decade between 1989 and 2001 is now recognized as the period in which neoliberalism became truly hegemonic, as formerly left-wing political parties yielded to global capital's business ontology. But we must also acknowledge that it was at the same time a moment of political struggle and new possibilities, much of which was articulated metaphorically in the Mars books' long road towards an unstable but predominantly utopian post-capitalist future. While the trilogy's sensibility may seem difficult to align with twenty-first-century neoliberalism, the cycle remains insightful in the way it presents its central struggle as an ongoing process with unpredictable outcomes — but nevertheless one in which political alternatives that offer far-reaching improvements to human life are not only debated, but also actively explored.

The author's more recent science fiction novels have clearly emerged from the deeply entrenched neoliberalism of the early twenty-first century: both *2312* and *Aurora* adopt a more mitigated sense of utopian possibility, in which global capitalism's most fundamental threats of proliferating mechanization, climate change, and resource scarcity play ever more prominent roles. Both these novels engage heavily with questions of posthumanism, artificial intelligence, immaterial labor, and environmental crisis, in ways that emphasize different (but complementary) anxieties.

In *2312*, the technological singularity is articulated as a direct threat to humanity's developing utopian future. Cleverly laying bare the economic foundations of the post-9/11 fears about globalization, the novel gives an uncanny reflection of mechanization's profound embeddedness in our daily lives, demonstrating *en passant* how accelerationism offers a tempting fantasy of post-capitalism that all too easily collapses back into neoliberalism's logic of flexible accumulation. Thus, even as it recasts the Mars Trilogy's storyworld from a more critical perspective that mitigates some of the previous books' more teleological utopian tendencies,

2312 also explores the positive effects of a universally embraced progressive identity politics that stands in dialectical counterpoint to fears and anxieties about posthuman forms of intelligence.

Picking up on *2312*'s startlingly utopian final image of thousands of once-threatened animals drifting down from space in balloons to repopulate Earth, *Aurora* offers a more radical depiction that ultimately falls within the recent trend of climate fiction (or "cli-fi"). By his reversal of the traditional "final frontier" logic that has informed decades of science fiction, Robinson turns his ongoing dialogue with contemporary social, economic, and political issues towards questions of scarcity and sustainability.[39] While these more recent works may seem like a retreat from his earlier utopianism, they do stubbornly continue to offer us documents "of hope as much as dread and despair."[40] If these science fictions represent worlds that are broken yet remain hopeful, we find within Robinson's ongoing oeuvre a dedication to utopian alternatives that neither dismiss nor "misunderestimate" the many crises of neoliberalism. To quote China Miéville one last time: "We should utopia as hard as we can." And that is precisely what Kim Stanley Robinson continues to do.

Notes

[1] From Kim Stanley Robinson's lecture "Rethinking Our Relationship to the Biosphere," 2015 Bioneers Annual Conference, https://www.youtube.com/watch?v=489I0gZlepM.
[2] Fredric Jameson, *Archeaologies of the Future: The Desire Called Utopia and Other Science Fictions* (London: Verso, 2005).
[3] China Miéville, "Introduction," Thomas More, *Utopia* (London: Verso, 2016).
[4] Simon Spiegel, "Some Thoughts on the Utopian Film," *Science Fiction Film and Television* 10:1 (2017): 58–59.
[5] Miéville, "Introduction," 21.
[6] David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Oxford: Blackwell, 1990), 147.
[7] Marc Augé, *The Future*, trans. John Howe (London: Verso, 2014), 3.
[8] Maurizio Lazzarato, *Signs and Machines: Capitalism and the Production of Subjectivity* (Cambridge, MA: MIT Press, 2014), 52.
[9] Maurizio, Lazzarato, *The Making of the Indebted Man*, (Los Angeles: Semiotext(e), 2012), 9.
[10] Lazzarato, *Indebted Man*, 9.
[11] Carl Freedman, *Critical Theory and Science Fiction* (Middleton, CT: Wesleyan University Press, 2000), 30.
[12] For a more elaborate discussion of the science fiction genre, see Andrew Milner's excellent historical and theoretical survey *Locating Science Fiction* (Liverpool: Liverpool University Press, 2012).
[13] Luc Boltanski and Eve Chiapello, *The New Spirit of Capitalism* (London: Verso, 2006), 18.
[14] Raymond Williams, *Culture and Materialism* (London: Verso, 2005), 201. See Hassler-Forest, "*Star Trek*, Global Capitalism and Immaterial Labour," *Science Fiction Film and Television* 9:3 (2016): 371–393.
[15] See Henry Jenkins, *Textual Poachers: Textual Poachers: Television Fans and Participatory Culture* (New York: Routledge, 1992).
[16] Mark Fisher, *Capitalist Realism: Is There No Alternative?* (Alresford, UK: John Hunt Publishing, 2009), 17.
[17] Dan Hassler-Forest, *Science Fiction, Fantasy, and Politics: Transmedia World-building Beyond Capitalism* (Lanham, MD: Rowman & Littlefield International, 2016), 70.
[18] Billionaire entrepreneur Elon Musk has similarly presented ambitious colonization plans as a part of his libertarian and thoroughly neoliberal "vision" for a sustainable human future.
[19] See for instance his short story "Mutt and Jeff Push the Button," included in the book-length publication, Fredric Jameson, *An American Utopia* (London: Verso, 2016).
[20] Raymond Williams, *Culture and Materialism* (London: Verso, 2006), 199.

[21] Philipp Wegner, "Ken MacLeod's Permanent Revolution: Utopian Possible Worlds, History and the *Augenblick* in the *Fall Revolution* Quartet," *Red Planets*, eds. Mark Bould and China Miéville (London: Pluto Press, 2009), 149.
[22] Darko Suvin's genre-defining term for the element in a science fiction text that establishes its separation from everyday reality: "SF is distinguished by the narrative dominance of a fictional novelty (novum, innovation) validated both by being continuous with a body of already existing cognitions and by being a 'mental experiment' based on cognitive logic" ("On What is and is not an SF Narration," *Science Fiction Studies* 14:1 (1978)).
[23] Gerry Canavan, "Struggle Forever." *Los Angeles Review of Books* (June 14, 2012). Accessed April 4, 2017. https://lareviewofbooks.org/article/struggle-forever/.
[24] Steven Shaviro, "The Singularity is Here," *Red Planets*, eds. Mark Bould and China Miéville (London: Pluto Press, 2009), 104.
[25] Shaviro, "The Singularity is Here," 106.
[26] Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (London: Picador, 2008).
[27] Nick Srnicek and Alex Williams, *Inventing the Future: Postcapitalism and a World without Work* (London: Verso, 2015), 16.
[28] A condensed single-volume edition of the trilogy was later re-published under the title *Green Earth* (New York: Harper Collins, 2015).
[29] Karl Marx, *Grundrisse*, translated by Martin Nicolaus (London: Penguin Books, 193), 704.
[30] Benjamin Noys, *Malign Velocities: Accelerationism and Capitalism* (Winchester: Zero Books, 2013), x.
[31] Noys, *Malign Velocities*, 98.
[32] Karl Marx and Friedrich Engels, *The German Ideology*, *Marxists.org*. Accessed April 4, 2017. https://www.marxists.org/archive/marx/works/1845/german-ideology/ch01a.htm.
[33] Jodi Dean, *The Communist Horizon* (London: Verso, 2012).
[34] "Kim Stanley Robinson — Rethinking Our Relationship to the Biosphere" Online video clip. YouTube. November 12, 2015. Accessed April 2, 2017. https://www.youtube.com/watch?v=489I0gZlepM.
[35] See Gregory Benford, "Envisioning Starflight Failing," *Centauri Dreams* (July 31, 2015). Accessed April 4, 2017. https://www.centauri-dreams.org/2015/07/31/envisioning-starflight-failing/.
[36] David Freeman, "Firm Floats Plan to Hang Colossal Skyscraper From an Asteroid," *NBC News* (March 28, 2017). Accessed March 29, 2017. https://www.nbcnews.com/storyline/the-big-questions/firm-floats-plan-hang-colossal-skyscraper-asteroid-n739601.
[37] Hilary Ashton Strang, "Utopia Here: On Kim Stanley Robinson's Aurora," *The Blackstone Review* (December 2015). Accessed March 25, 2017. https://www.theblackstonereview.com/articles/utopia-here-kim-stanley-robinsons-aurora.
[38] Lazzarato, *Indebted Man*, 46.
[39] These concerns were addressed even more directly in *Aurora*'s successor *New York 2140* (2017), which hadn't yet been published at the time of writing.
[40] Gerry Canavan, "Utopia in the Time of Trump," *Los Angeles Review of Books* (March 11, 2017). Accessed December 14, 2018. https://lareviewofbooks.org/article/utopia-in-the-time-of-trump/.