New Forms of Space and Spatiality in Science Fiction

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Edited by

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INTRODUCTION

SHAWN EDREI

In the introduction to *Science Fiction beyond Borders*, the precursor to this volume, I began with the following observation: "Space is not the final frontier anymore."

For a collection based on papers produced by Tel-Aviv University's 2014 and 2015 Science Fiction Symposia, this seemed a self-evident claim: so much scholarly work presented at those conferences argued that common perceptions of space and spatiality were outdated, and that science fiction in particular was poised to defamiliarize and re-examine those supposedly ironclad concepts. This book, then, draws on essays submitted to the 2018 Symposium in an attempt to formulate a response: SF, it seems, isn't content to simply challenge our definitions of spatiality, but offers us alternatives, new possibilities of spatial configuration.

As with *Science Fiction beyond Borders*, this volume showcases scholars from a wide range of disciplines, each finding a unique way to engage SF's varied interpretations of space and spatiality. We begin with a discussion on utopias and dystopias – mainstays of the genre – as **Alexander Popov** analyzes revolutionary and utopian topologies as hyperobjects, per Timothy Morton's terminology. Popov constructs a three-part typology of spatial imagery in the works of China Miéville, Samuel Delany and Kim Stanley Robinson, arguing that the revolutionary/utopian hyperobject materializes via the unique spatial configurations depicted in the aforementioned novels.

My chapter shifts the discussion of utopian and dystopian space into the field of video games, where player agency can often have a hand in actively shaping the virtual environment itself. Games in the science fiction genre are of particular interest here, as they tend to position their diegetic spaces on the utopian/dystopian binary, with the player empowered to tilt the balance towards one or the other.

Co-editor **Chen F. Michaeli**, a member of the Symposium's Organizing Committee, concludes our discussion on these particular types of spaces by juxtaposing Ira Levin's *The Stepford Wives* and Disneyland theme parks. Michaeli unpacks the complex ideologies and risks of a bourgeoisie

Capitalist utopia by aligning Levin's illusion of suburbia with the artifice of Disneyland, arguing that these spaces invest the novel with a critique of American society, and the potential alienating aspects of consumerism.

The chapters comprising the next section of this collection analyze works by seminal science fiction authors who have, in their own unique ways, defamiliarized and subverted the concept of "setting" to great effect. **Amit Kardosh** focuses on George R.R. Martin – although Martin's fantasy work is more prominent in the public eye due to the success of *Game of Thrones*, Kardosh suggests the author's SF writings persistently manipulate the Bakhtinian chronotope in order to produce spaces in which the inadequacy of language allows for deep psychological investigation of alien species.

Nitya Datta then shifts our attention to the iconic Philip K. Dick, whose works depict spaces invested with the anxieties of Otherness. Datta analyzes *Second Variety* and *Minority Report* with an eye towards exploring how the very environment – be it urban or post-apocalyptic – is defined by binary oppositions of "us versus them", "insider versus outsider", and "I versus Other".

The City is also of interest to co-editor and Organizing Committee member **Orin Posner**, who compares the unique science-fictional architecture depicted in J.G. Ballard's *High Rise* and Philip Kerr's *Gridiron*. Both texts position the requisite science-fictional novum (vis-à-vis Darko Suvin not in alien encounters but in urban design, producing buildings and city-spaces which hold authority over human society.

The third and final section of this book centers on depictions of posthumanist and transhumanist spaces, where the myriad definitions of "human nature" clash with potential self-generated Otherness. **Laurie Jui-hua Tseng** begins by exploring Cixin Liu's popular *Remembrance of Earth's Past* trilogy, which uses the Earth itself as a space for repeated encounters with alien Others. Using Lacanian psychoanalytical theory, Tseng explores Liu's depiction of the Trisolaran species, culture and language as sources of inevitable spatial confrontation with Otherness.

Sagar Taranga Mandal continues this process of exploring negotiations of space by discussing a pair of graphic novels: *Hyderabad* and *Bangalore*, part of the "Every City is a Story" storytelling initiative. Using the paradigms of Bruno Latour, Mandal highlights the ways in which these cities survive through proliferation of hybridity and mediation between the old and the new, arguing that Latour's proposed barriers of invisibility, unthinkability and unrepresentability break down in the face of radical mediative practices.

Hella Bloom Cohen concludes this collection by exploring the works of Israeli author Orly Castel-Bloom, whose dystopian absurdity fiction foretells the foreclosure of space by imagining it from the perspective of nonhuman life. This chapter proposes that Castel-Bloom embeds judicious portrayals of the Israeli state's preoccupation with certain forms of human life and reproduction at the expense of other organisms, and that – when viewed through critical perspectives offered by Donna Haraway, Rosi Braidotti and others, Castel-Bloom's use of animal suffering produces a uniquely speculative and radical critique of Israel.

The array of interdisciplinary approaches featured herein serve to further rebuke the notion that science fiction is "done" with space. While it may no longer be the *final* frontier, explorations of spatiality remain an endless source of variety and invention for both authors and scholars of science fiction.

CHAPTER ONE

THE UTOPIAN HYPEROBJECT: REVOLUTIONARY TOPOLOGIES IN SCIENCE FICTION

ALEXANDER POPOV

Utopia in Science Fiction Theory

Utopia has been inextricably bound with the history and theory of science fiction (SF). This relationship has been articulated in multiple forms and to multiple ends. However, the concept of utopia remains blurry and problematic – not least because of the irreconcilable paradoxes in its core. In this essay I want to propose a new model with which to think utopia and to validate it through readings of three important utopian SF texts. This model is provoked by the ecological crisis of modernity and derived from modern ecological thought. In applying tools from ecological thinking, the suggested approach effectively extinguishes the telic component of utopias. With regards to utopian implementation, it reconfigures utopia as an even more ambitious project. The essay will first summarize several influential views on utopia in SF. It will later demonstrate that the proposed model is able to accommodate all of them, while adding analytical power to the existing theory.

Darko Suvin identifies literary utopia as an ancestor of SF, but also as "the sociopolitical subgenre of science fiction" (Suvin 2016, 76). He conceptualizes SF as wider in scope than literary utopias. As a "verbal construction" (ibid., 54), utopia is "always predicated on a certain theory of human nature" (ibid., 69), which implies that "one man's perfection is another man's (or class's) terror" (ibid., 76)[1]. SF, on the other hand, operates within a potentially self-reflective cognitive framework. According to Suvin, SF is bounded between the horizons of utopia and dystopia. Utopia takes on a double function – as an imaginary place or time, but also

as a hermeneutic method, which "cannot be realized or not realized – it can only be applied" (ibid., 67).

Utopia as method has its provenance in the work of Ernst Bloch, who has reinterpreted utopia as "the hope principle": a psychological drive toward the Not-Yet, akin to Freud's pleasure principle in its irreducibility (Bloch 1986, 51-64). Only a hope principle that is collective can be truly future-oriented and not a mere wishful image. Freedman (2000) explicitly analyzes this sense of the utopian in relation to SF, as opposed to its generic and political uses. The hope principle powers "a utopian hermeneutic [that] construes fragmentary prefigurations of an unalienated […] future in the cultural artifacts of the past and present" (Freedman 2000, 64). "Utopia, in the philosophical and hermeneutic sense, cannot be seen straight on, but only in fractional prefigurations" (ibid., 73). Utopia in this sense is an ever-moving horizon that utopians must never let slip away. Inherent in this formulation is also the notion of critical utopia (Moylan 2014), which can grasp and modify the mechanisms of its own production, as if the future horizon reaches back to generate its own self. Whereas literary utopia is inherently ideological, the utopian method must remain open-ended and resistant to totalizing world building, precisely because utopia is always beyond the revolutionary change that constitutes it (Freedman 2000, 84).

This hermeneutic is called into question by the problem of utopian representation. Jameson (2005) grapples with this flaw in the utopian genre. How can we imagine something radically new if anything we can imagine is always going to be constrained by our biology and experience? But in the conclusive stages of his argument it is precisely this "barrier in time" (Jameson 2005, 85-106) that is transformed into the greatest political strength of utopia: it forces us into a "meditation on the impossible, on the unrealizable in its own right" (ibid., 232). Within the utopian method there is inevitably buried the inescapably human vision of a localizable utopia. Jameson emphasizes a concept of utopia not as a commitment to a particular utopian implementation, but as a "commitment to imagining possible Utopias as such, in their greatest variety of forms" (ibid., 217), which neutralize each other in a positive sense. Much like in Bloch, causality is reconceptualized not as a mental category, but as a narrative one, "as an immense synchronic interrelationship" (ibid., 88). Utopia as the source of the "utopian leap" (ibid., 147) can be thought of "as a message from the future" (ibid., 99).

Access to the fragmentary images of utopia is fundamentally misaligned with human consciousness and traditional narratives. A different model for organizing our experience, however, might allow for

another kind of access. Ideally, it would preserve theoretical insights into utopia: as a genre and as a hermeneutic method. It must also be consistent with a cognitively structured view of the material reality and suited to analyzing literary narratives. I will argue here that such a model is already available in the concept of *hyperobjects*.

Uncanny Alignments: Hyperobjects and Utopia

Timothy Morton uses the term "hyperobject" to describe entities "that are massively distributed in time and space relative to humans" (Morton 2013, 1). He argues that globalization and climate change have forced the sciences to invent ways of perceiving those entities. In the past humankind had no means for thinking about systems like climate, the Anthropocene, capitalism, Earth's biosphere. These things are simply too vast to be grasped by the human mind; but with the onset of modernity, their impact on everyday life intensified to such an extent that their existence could no longer be ignored.

Morton defines several properties that help us think about hyperobjects. An overall quality is that they are *viscous*. Entities inside hyperobjects are phenomenologically stuck to them; hyperobjects annihilate the psychological illusion of distance (ibid., 27). We are already inside them, where objects once seen as stable entities become eerie and emit their own temporalities. There is no "Away" space to offload waste to – in the hyperobject of the biosphere everything leaves an "aesthetic trace" that haunts us (ibid., 31).

Morton continues through three categories of hyperobjects: *non-locality*, *time undulation* and *phasing*. The local manifestations of a hyperobject are not equal to the hyperobjects themselves, therefore hyperobjects are *non-local*. Climate change appears everywhere around us – in the meat we eat, in the vehicles we drive, in our enjoyment of an unusually warm day in December – and yet none of these appearances are the hyperobject itself (ibid., 38). Hyperobjects are so massively distributed in time that they bend and *undulate*, though we can't ever see beyond them; "Space can no longer be construed as an absolute container" (ibid., 56) – time and space begin to emerge *from* things. And finally, hyperobjects are *phased*. When the time emitted by one entity intersects with the time emission of another, an interference pattern emerges. Hyperobjects occupy high-dimensional spaces and thus remain unseen to us, until we are able to observe them with powerful enough instruments. A process is simply an object in n+1 dimension, where the added dimension is time. The phase space of a dynamical system is such a mathematical space that can describe all possible variations of that system, like a Lorenz

Attractor is a plotting of weather events in "suitably high dimensional space" (ibid., 70-1). Phasing is thus simply an indexical sign of this high-dimensional object – an artifact of the observational equipment perceiving an apparent change in the phase space (ibid., 77).

These qualities of hyperobjects force us into apprehending the *interobjective* space everything exists in, of which human intersubjectivity is just a tiny part:

> The mesh of interconnected things is vast, perhaps immeasurably so. Each entity in the mesh looks strange. Nothing exists all by itself, and so nothing is fully "itself." […] Our encounter with other beings becomes profound. They are strange, even intrinsically strange. Getting to know them makes them stranger. When we talk about life forms, we're talking about strange strangers. The ecological thought imagines a multitude of entangled strange strangers. (Morton 2010, 15)

Hyperobjects make apparent characteristics of all objects that had previously remained masked. Objects can overlap and be nested in one another, without any of them making the rest any less real. A human therefore is made of many objects: bacterial colonies, DNA shared with daffodils, radioactive materials, memes, prosthetics. The human is irreducible to any of these, and their own reality, in turn, is not dependent on the existence of the human.

What this means is that everything is real, but also that every object presents itself to the rest in different ways. Objects exchange information in lossy ways, just as an MP3 is a lossy representation of the original sound wave (Morton 2013, 77). These *strange strangers* are accessible to others only through their appearance, i.e. aesthetically, never in essence. The human anthropomorphizes the table she is sitting on, just as the table table-morphizes the human. Heaps of objects can form new objects that are in a material sense larger, but are actually ontologically smaller. Humankind is ontologically smaller than all beings that make it; Earth ecology is ontologically smaller than all of its separate components. Hyperobjects *subscend* the objects that make them, rather than transcend them (Morton 2017, 101). Objects are riddled with gaps between appearance and being, worlds are ragged and incomplete (ibid., 91).

The uncanny alignments between the concept of hyperobject and utopia are perhaps best encapsulated by the following passage:

> Hyperobjects are agents. They are indeed more than a little demonic, in the sense that they appear to straddle worlds and times, like fiber optic cables or electromagnetic fields. And they are demonic in that through them causalities flow like electricity. (Morton 2013, 29)

The hyperobjective view is capable of cognitively mapping the double nature of utopia: both a superhuman agent (the collective character of the hope principle) and a construct localizable in time and space (literary utopias). It provides a spatial interpretation of the utopian hermeneutic as an object distributed in time. Seeing the utopian horizon – those futural fractional figures – means that the observer is already in the hyperobject and is accessing a particular slice of it. Therefore, it makes sense that there cannot ever be a unified utopian template. This view of utopia marries it to revolution, and not merely as a plot of significant events, but as *permanent revolution*, a "heavily diluted" distribution of violence across the mesh within the hyperobject, "an attempt to avoid violence altogether" (Morton 2017, 176), "a host of micro-violences […], rather than a pantheon of macro-violences." (ibid., 179)

Focusing revolutionary violence through the agency of a narrowly constructed human *subject* and away from the *symbiotic real* squishes the utopian hyperobject into totalitarianism or other forms of anthropocentrism. The more things we allow to be "real", the greater access to utopia that we have. Thus, the model correctly describes the utopian method not as a particular utopian implementation – these are singular cuts of the hyperobject, viewed at the specific scale and temporality of the objects it subscenes – but as a coexistent, non-violent, dialectical neutralization of these different utopianisms. Utopia is "ontologically tiny" (Morton 2017, 105).

The utopian/revolutionary hyperobject is itself analyzable through spatial models: mathematical and formal, symbolic and figurative. I will examine three such models that describe the hyperobject at different complexity scales. These are, from simplest to most complex: *the circle*, *the network* and *the phase space*. The explorations will be grounded in concrete SF texts, each of which can be usefully read through all three topological models, but crucially depends on one in particular.

The Dispossessed: Revolution as Return

First, I will examine how cyclical motions (or more colloquially, circles) are inscribed in Le Guin's classic utopian novel *The Dispossessed*. In graph theory, a cycle is defined formally as a path via which a vertex is reachable from itself. In terms of the fictional text, I define cycles as follows: two narratively prominent points between which the directed cyclical motion is performed, where the movement from A to B within the text is structurally analogous to the inverse movement from B to A. Within the utopian reading, these figurative circles can be interpreted as the

hermeneutic generated by the utopian Novum – the genesis of the utopian drive from the Not-Yet-in-Being. In *The Dispossessed*, a crucial mirror relation of this kind is the tension between the Sequence and Simultaneity theories of time that Shevek seeks to unify, standing as a placeholder for utopia's property of sending traces of itself backward in time. The linear vs. circular view of temporality corresponds to the hyperobject's time undulation: its wholeness as a spacetime manifold in n+1 dimension; the hyperobject as a causal infrastructure.

Formally, the most prominent circle is to be found in the construction of the narrative. The story moves like a pendulum between past and present, Anarres and Urras. One chapter ends with the image of Anarres as seen in the night sky or Urras; in the next one the narrative segues directly into past events on Anarres (Le Guin 2002, 77). The two planets are the extreme points in another kind of cycle – the physical journey of Shevek framing the novel.

Circles are present at the micro scale of personal relations and physical encounters. This is most prominently figured in the pair of Shevek and Takver, especially when they are reunited after their long separation due to the famine:

> The first time they both came as Shevek came into her, the second time they struggled and cried out in a rage of joy, prolonging their climax as if delaying the moment of death, the third time they were both half asleep, and circled about the center of infinite pleasure, about each other's being, like planets circling blindly, quietly, in the flood of sunlight, about the common center of gravity, swinging, circling endlessly. (ibid., 265)

The hermeneutic circle is activated in a startlingly powerful way in the relation between humans and nonhumans. Shevek comes to Urras from a world almost completely devoid of fauna. His every encounter with animals on Urras is thus a novum in and of itself. In these points of contact it becomes clear that Odonianism does not privilege humans as transcendental subjects. Le Guin's language aligns almost uncannily with the notion of the gap between appearance and being:

> The otter sat up on its haunches and looked at him. Its eyes were dark, shot with gold, intelligent, curious, innocent. "Ammar," Shevek whispered, caught by that gaze across the gulf of being— "brother." (ibid., 127)

Circular relations also provide a reference framework within the larger galactic context. The Urras-Anarres system is itself embedded in cyclical historical movements – in relation to the worlds of Terra and Hain. In the words of the Terran ambassador, herself a metonym for Earth:

> "I don't understand—I don't understand," she said at last. "You are like somebody from our own past, the old idealists, the visionaries of freedom; and yet I don't understand you, as if you were trying to tell me of future things; and yet, as you say, you are here, now!..." (ibid., 288)

Shevek's theoretical breakthrough, which will lead to the invention of the ansible, is in turn partially based on the work of a Terran physicist from the past, "Ainsetain". Cyclical motions are generated with regards to the Hainish civilization as well, which is the principle engine of cultural contact in Le Guin's larger fictional universe. The Hainish Ketho embarks on his own journey at the end of the novel, as Shevek is completing his:

> "You're sure you want to walk through this wall with me, Ketho? You know, for me, it's easy. Whatever happens, I am coming home. But you are leaving home. 'True journey is return....' "
> "I hope to return," Ketho said in his quiet voice. "In time." (ibid., 318)

Circular motion within the utopian hyperobject brings communication from the future, to break through walls and restore the networked interior of the permanent revolution.

Coupled with Odo's famous words – "To be whole is to be part; true voyage is return" (ibid., 77) – the cycles in the novel signal that Urras is deeply embedded within the hyperobject of utopia/revolution. Revolution does break out at the end of the novel in the country of A-Io, in part as a consequence of Shevek's journey. The cyclical motion restores a vision of the true scope of the utopian project; it is a return to the true Odonian values. The circle is the most basic of the spatial models posited here, but precisely this simplicity makes it appropriate to describe the restoration of wholeness. The seemingly attenuated connection between parts of the hyperobject, as seen in linear time, is reinforced by the power of Shevek's individual effort:

> Sacrifice might be demanded of the individual, but never compromise: for though only the society could give security and stability, only the individual, the person, had the power of moral choice—the power of change, the essential function of life. The Odonian society was conceived as a permanent revolution, and revolution begins in the thinking mind. (ibid., 274)

The individual is sucked into the futural hermeneutic by the power of the collective vision, but individual will is what generates the hope principle in the first place.

The other two spatial models are also significant in *The Dispossessed*, albeit due to their inaccessibility. Network formation on Anarres is constrained by the very utopian values of its society. Scarcity severs connections, even between partners, while unofficial power hierarchies remain entrenched. Networking between Anarres and Urras is virtually nonexistent, the only connections are kept as private channels of communication for the unofficial bureaucrats. Shevek's efforts to establish a new publishing syndicate and his journey to Urras catalyze the regrowth of connective tissue. Access to the phase space too is extremely limited on Anarres, which can be described as a "reduced" world (Jameson 2005, 271). Scarcity conditions are unambiguously identified as the source of deformation of Anarresti life[2]. Severing the links to the symbiotic real is antithetical to utopia, as it forecloses the future horizon. Restoring the principle of permanent revolution becomes a necessary step in reclaiming utopia.

Iron Council: Networks of Resistance and Remaking

Next, I turn to China Miéville's *Iron Council* in order to examine the role of networks in revolution, but also the network as a more general spatial model than the circle and as bridge to utopian phase change. Miéville's novel of a fantasy[3] revolution is about the violent struggle between the old hierarchies of New Crobuzon and the emergent, "horizontal" networks of the moving revolution. Here is a description of the center of the old power network:

> The city's five railway lines emerged from its mouths, or perhaps they congregated there, perhaps their motion was inward and they coiled together like a rat-king's tails and knotted and made the edifice that housed them, Perdido Street Station. A ganglion of railroad. (Miéville 2008, 308)

This central nervous system to which the periphery is subordinated is contrasted with the inter-objective quality of the revolutionary narrative, where agency flows horizontally through the revolutionary hyperobject:

> —We don't give up what we have, says Ann-Hari. Judah's golem's legs shudder. —We give up nothing. All our blood and muscle. All the dead. Every hammer blow, the stone, every mouthful we eat. Every bullet from every gun. Each whipping. The sea of sweat that come from us. Every piece of coal in the Remade boilers and the boiler of the engine, each drop of come between my legs and my sisters' legs, all of it, all of it is in that train. (ibid., 211)

There is no transcendent "we" that governs the revolutionary project. The Iron Council is a subscendent object, itself part of the utopian/revolutionary hyperobject. This ontological parity is signaled on multiple occasions. For instance, during the railway workers' strike Ann-Hari, the leader of the prostitutes, not only defends the Remade slaves as equal in the endeavor, but kisses their leader, thus making possible a kind of transgressive network growth (ibid., 199).

This aspect of the revolution is most apparently figured in the character of Judah Low, who, as a consequence of his stay with the Stiltspear tribe annihilated by New Crobuzon's expansion, acquires a "good thing" (ibid., 172). This "thing" is at times described as a "grub" inside Judah; "the oddity in him"; "a strong goodness"; "a constructed non-life, a giant anthropoid wind"; and "his thing inside, his innard good" (ibid., 168, 232-4). It sways him to take part in the revolution, and makes him appear to the reader as something other than human. It is tempting to read this presence metaphorically, as a mere rhetorical effect, since it is never identified as a material entity. But Miéville's faithfulness to detailed and reasoned materiality compels us to read it as its own object. This is a possible figure for the new utopian actor – a human-nonhuman assemblage that subscends the conjunction of Judah and his Stiltspear part. At the micro-level, this hybridization also functions as a figure for the colossal network of nations, cultures, species, territories, movements, organizations and supernatural agents that coalesces around the Iron Council.

The remaining topological models can be used here as well. Moments of access to the full manifold of utopia-revolution are key to the plot; they are represented as indexical signs of rupture in the heart of being. One source of access is the figure of the Weaver, the giant, dimension-hopping demigod-spider. The Weaver appears only once in *Iron Council* – immediately before the first outburst of the revolution – and very briefly. This appearance, though on the surface causally isolated from the narrative, has a profound impact when interpreted from the point of view of the utopian hyperobject. This is encoded in the language that describes the Weaver's intervention:

> Judah feels a tug as if the world is tethered by silks the Weaver is gathering as it turns. […] They are all draped in threads from the Weaver's spinnerets. They are knotted in a new configuration. (ibid., 186-8)

This resembles the description of a topological transformation – a mathematical operation whereby an object is translated to a new form. Just as a stereographic projection maps a sphere from which one point is excised into a plane, the Weaver performs a topological transformation on

the railway workers – and suddenly there is an abrupt, tearing change as the situation phases from a wage strike to a revolution.

Figurative access to the phase space of possibilities is also provided by *the Cacotopic zone*, through which the Iron Council must travel:

> A badland beyond understanding. Where men might become rat-things made of glass and rats devilish potentates or unnatural sounds and jaguars and trees might become moments that could not have happened, might become impossible angles. (ibid., 219)

This brings us back to Suvin's observation that SF is bounded between utopia and dystopia. Miéville remains a pragmatist about the possibility of representing these extremes – access to the unimaginable is transcribed via metaphysical placeholders that remain resistant to narrative instruments (Freedman 2015, 80-81).

Here too, the circle restores the unity of the revolutionary network. It reconnects the Iron Council with the Collective in New Crobuzon, two entities whose genesis is entangled in a way that flies in the face of causality. The revolutionary train inscribes an actual geographical circle across the whole Rohagi continent, before returning to the metropole. The novel ends with the image of the train frozen inside Judah's time golem – awaiting the right historical moment. It becomes a utopian monument, but also a revolution – condensed and wound-up like a spring. It is the polar opposite of the Cacotopic zone; a *Calo-topia* of sorts, a *beautiful* place or moment; an Eu-topia, a good place; and a U-topia, an impossible place. Judah's intervention serves as another placeholder for the unrepresentability of utopia:

> The time golem stood and was, ignored the linearity around it, only was. It was a violence, a terrible intrusion in the succession of moments, a clot in diachrony, and with the dumb arrogance of its existence it paid the outrage of ontology no mind. (Mieville 2008, 441)

The *Mars* Trilogy: Toward an Ontology of Potentiality

Kim Stanley Robinson's *Mars* trilogy can be read as a "gigantic laboratory" for "ontological realism" (Jameson 2005, 395, 399). Arguably no other SF before or since its publication has achieved a comparable level of detailed sociopolitical representation, while maintaining a commitment to critical utopian writing. It is a text that invokes many utopian staples, but situating them in a fully cognitive framework of world and story construction. This

effect is made possible by the trilogy's development of "an analogon of historical time itself" (ibid., 396).

The story of the colonization of Mars is told from multiple perspectives and stretches across two centuries fraught with historical events. The crucial feature for tricking the reader into the illusion that historical time is aligned with narrative time is the longevity treatment invented in *Red Mars*. The First Hundred – the initial colony of scientists and engineers who first land on the planet – remain a stable reference point throughout the trilogy, through which the reader experiences the ontological transformations necessary to confront the issues of colonization, revolution and utopia.

The core problem facing the colonists of Mars in Robinson's trilogy is that of "*areoforming*". This term suggests the utopian character of the trilogy: the task is not to make Mars more human-friendly, but more like itself. Mars as a hyperobject is given its own horizon of becoming; the movement toward it and the puzzle of its nature are the most central themes of the trilogy. Human knowledge systems are met by the resistance of Martian reality and gradually transformed in this interminable struggle (Jameson 2005, 397). Science, over the course of the narrative, is dialectically put on an equal footing with other knowledge-organizing frameworks: art, the humanities, engineering, mysticism, economics. Earth's history is also reconstructed to new purposes: the Martian revolutions, for instance, are clearly modeled after historical events, but their situatedness on Mars transforms them into something new. *Mars* remains rooted in multiple, dynamically changing realisms, but also in the future horizon it is always attempting to model. As per Jameson, the many different utopian visions and enclaves mutually temper themselves and are made non-violent and intermeshed, as a reaction to the problem of representing reality.

Since modeling – of very specific problems, but also as an activity in and of itself – is so deeply embedded in *Mars*, it is possibly the most relevant SF text for the exploration of the phase space as a topological figure. Thinking about the phase space of complex dynamical systems is almost impossible from the point of view of a single human mind. But *Mars* makes a point of putting this struggle in the center of its narrative. The phase space is always felt as a penumbra of potentialities, Mars and the Martians are always on the brink of change. The concept itself is introduced in *Green Mars*: "At the heart of any phase change there was a zone of cascading recombinant chaos. But there were methods to read it, to deal with it" (Robinson 1995, 559). The trilogy is a fictionalized attempt to do just that. The dynamic system is only partially observable by individuals,

but perhaps more so by collective communities. The sheer range of disciplines, political approaches and personality types involved in the attempt, through narrative juxtaposition and the accrued weight of repetition, is eventually organized into a complex and multi-modal apparatus. It becomes a focal modeling instrument for the reader and for the protagonists themselves. The latter gradually acquire an awareness that they are diffracting all thoughts through their own theory-of-mind representations of the First Hundred. The narrative is transformed into a fractal amalgamation of psychological and ideological models modeling other models.

While *Iron Council* represents access to the higher-dimensional space of potentiality through metaphysics, *Mars* takes the reader to the limits of what is imaginable in cognitively plausible terms. The First Hundred become models for accessing the world. They mirror and negate each other, even achieve synthesis, opening up the possibility for a new kind of real. This is what makes *Mars* ontological realism: not the creation of a previously unimaginable reality, but the clearing of the necessary mental space to do so:

> The utopian text is not supposed to produce this synthesis all by itself or to represent it: that is a matter for human history and for collective praxis. It is supposed only to produce the requirement of the synthesis, to open the space into which it is to be imagined. (Jameson 2005, 409)

While the unseen states of the phase space cannot but be glimpsed in fragments, the remaining spatial properties of the utopian hyperobject are figured in straightforward ways. Network formation and functioning is a central motif: The First Hundred are one such network serving as a model for the larger network of the Demimonde, the hidden revolutionary society of Mars. The Demimonde is extremely "horizontal"; within it the image of "the Martian" slowly coalesces from disparate inputs (as is the Martian federalist society created after the successful revolution). In this "half-world" it is not just different political and cultural ideologies that are interlinked; ontological views on the status of the planet itself are brought together in a process of dialectical tension. Revolutionary Mars is as ragged and riddled with gaps as Morton describes the symbiotic real. It is this constitutive inclusiveness which makes possible the successful revolution in *Green Mars*. That revolution is ultimately peaceful due to its total nature, in contrast with the convulsive and violent failure of the one in *Red Mars*.

Cyclical motions of hermeneutic renewal are also important to the novels' movement toward utopia. Ultimately, *Mars*' utopia is shown to be

part of a larger system comprising of Earth as well – not unlike Anarres and Urras. Before that, as early as in the first half of *Red Mars*, Robinson refers to the classic notion of utopia as a localizable place or time. Arkady Bogdanov's lecture to John Boone paints the colony of the First Hundred as an island of scientific utopia, and exposes such a solution as untenable:

> "So a scientific research station is actually a little model of prehistoric utopia, carved out of the transnational money economy by clever primates who want to live well."
> "You'd think everyone would join," John said.
> "Yes, and they might, but it isn't being offered to them. And that means it wasn't a true utopia. We clever primate scientists were willing to carve out islands for ourselves, rather than work to create such conditions for everyone. And so in reality, the islands are part of the transnational order. They are paid for, they are never truly free, there is never a case of truly pure research." (Robinson 1993, 342)

Another utopian staple, the journey back home, is the vehicle that reestablishes the connection between the planetary parts of the hyperobject. Mars is shown to be a mirror to the home planet, and Earth is grasped as "greater even at being Martian" (Robinson 1997, 195). The utopian seed has been sown back on Earth – it is not a Martian invention.

The problem of the utopian leap and of historical memory – also circular in narrative terms – is figured in the First Hundred's aging illness. The bicentenarian characters begin to experience sensations of memories seemingly coming from the future, which, in addition to being a metaphor for the impossibility of utopian representation, can be interpreted as the birth pangs of a properly Martian epistemology, the reconciliation of radical opposites: the Red and the Green, John Boone's liberalism and Frank Chalmers' pragmatism, the sciences and the humanities. Healing memory is then a harmonization of the different utopian impulses encoded in the settlers. It leads to the reconciliation between Sax and Ann, the principal antagonists of the trilogy: their falling in love, which, too, has its roots back on Earth, symbolically prefigures some potential positive neutralization of the Red and Green ideologies, somewhere in the futural regions of the utopian hyperobject. Mind and memory bring together in a decidedly utopian image all three spatial models discussed in this essay:

> After all, Sax pointed out, if their memories were returned to them intact, anything might be possible—anything—breakthroughs on other fronts, a defeat of the quick decline, health that lasted centuries more, an ever-expanding community of garden worlds, from thence perhaps up again in some emergent phase change to a higher level of progress, into some realm

> of wisdom that could not even be imagined at this point—they teetered on the edge of some such golden age, Sax told them. But it all depended on wholeness of mind. (Robinson 1997, 698)

Mars mirrors critically the history of the utopian genre, but it also provides a template for utopian revolution, an analogue of which can be found in Morton's work. This permanent revolution of micro-violence is predicated on a new theory of action that Morton calls "rocking": "the inner dynamic of action based on a readily available solidarity that includes nonhuman beings. […] We are wary of letting rocks do things because we are wary of letting agency be about doing things" (Morton 2017, 179-80). In Robinson's critical utopia, rocks and Mars itself must necessarily be integrated in the mesh of the revolutionary hyperobject:

> But as each system passed on to the next, the circle of equal citizens had bloomed wider, by a slight or great margin, until now not only were all humans (in theory, anyway) equal, but consideration was being given to other animals, and even to plants, ecosystems, and the elements themselves. These last extensions of "citizenship" Charlotte considered to be among the foreshadowings of the emergent system that might come after democracy per se, Charlotte's postulated period of Utopian "harmony." (Robinson 1997, 483)

By letting go of the centered subject and opening up agency to all objects, we gain access to the phase space of utopia. This is the hope principle as projected by a vast and heterogeneous collectivity.

Notes

[1] See Miéville (2016) for a detailed discussion on the dangers of universalizing utopias.

[2] For a comparison with Trotsky's analysis of socialist societies under such conditions, see Freedman (2000, 122).

[3] Fantasy was famously excluded by Suvin from the literatures of cognitive estrangement (Suvin 2016, 37). For a wider definition of fantastic fictions as articulations of alterity, see Miéville (2009), as well as Freedman's discussion of the cognition effect (Freedman 2000, 18).

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CHAPTER TWO

SEEKING GOLDEN PATHS: CREATING UTOPIAN AND DYSTOPIAN SPACES IN VIDEO GAME WORLDS

SHAWN EDREI

The process of "worldbuilding" is considered one of the most important elements in the construction of fictional narratives. This is especially true of science fiction, a genre in which detailed extrapolations of existing technologies and philosophical quandaries enable the projection of intricately-designed future scenarios. Adam Roberts frames this as a negotiation of sorts that ultimately comes to define the genre's ontological features:

> It seems that one of the axes of critical enquiry has to do with the degree of proximity of the 'difference' of SF to the world we live in: too removed and the SF text loses purchase, or becomes merely escapist; too close and it might as well be a conventional novel, it loses the force and penetration the novum can possess when it comes to providing newness of perspective. (Roberts 2000, 16)

This tension between convention and escapism may also explain, in part, the propensity of science fiction authors to cast fictional futures as utopias or dystopias – though, as Margaret Atwood points out, one can "scratch the surface a little, and—or so I think—you see something more like a yin and yang pattern; within each utopia, a concealed dystopia; within each dystopia, a hidden utopia, if only in the form of the world as it existed before the bad guys took over" (Atwood 2011, 76). Indeed, as other chapters in this collection demonstrate, utopian and/or dystopian ontological configurations can be found among some of the most popular and enduring works in the genre; these typically display a great amount of internal detail as to how these spaces came to be (most frequently through the widespread use of technology in general and some new untested invention in particular).

In most narrative media, the process of assembling and depicting these spaces occurs before the reader or viewer engages with the work: the novel has already been written, the film or television series has already been filmed. As such, any ontological analysis must speculate as to how the world in question coalesced during the creative process, with the obvious caveat that even first-hand input from the author is not inherently reliable or infallible. However, video games – among the newest platforms for contemporary storytelling – offer a paradigm in which fictional worlds may lean towards utopian or dystopian outcomes in something resembling real time; moreover, these shifts can be attributed to input from the player, an unprecedented dynamic in which the audience's presumed passivity is replaced by intervention in and navigation through diegetic space. This chapter will discuss *2064: Read Only Memories* (2015), *Dishonored* (2012) and its sequel (2016), and *Iji* (2008), all games in which the player's agency manifests not just through control of a virtual avatar, or determining the manner in which a plot unfolds, but through an active, visually-coded shaping of the virtual world towards utopia or dystopia. Whether the result of a single choice or the aggregated sum of player action over the course of the game, these shifts represent a phenomenon that cannot be replicated in other media.

To understand how navigating and partially shaping a virtual fictional world differs from the cognitive processes typically undertaken by readers/viewers of mainstream narrative platforms such as the novel or the film, it is worth reiterating the stance literary theorists have held regarding the reader's function in print and cinematic media. For Lubomir Dolezel, the reader is analogous to a traveler, accessing diegetic spaces via direct engagement with the text in question:

> Actual persons, authors and readers, can access fictional worlds but only by crossing somehow the world boundary between the realms of the actual and the possible. Due to the different ontological status of these realms, physical entry, direct observation and ostension (Rescher 1975, 93) are unthinkable. … fictional worlds are accessed through semiotic channels and by means of information processing. (Dolezel 2000, 20)

For Farah Mendlesohn, speaking on the subject of science fiction readers specifically, the genre is designed from the outset to provoke specific cognitive reactions in its audience, using "the classic double bluff sf: setting up one thought experiment within another, to force the reader to look out of the corner of his/her eye at the context of the adventure, mystery or romance" (James/Mendlesohn 2003, 4-5). While many theoretical and critical models exist that map out reader engagement with

diegetic space in a variety of disciplines (psychoanalytical, feminist, historical, cultural, etc.), these all use as their baseline a particular type of unilateral access – texts that, by their nature, are unable to respond to or interact with specific readers.

Video games, by contrast, offer an entirely unique experience of fictional worlds, with paradigms modeled on active real-time engagement and action rather than passive spectacle. On the one hand, Brendan Keogh points out that even the most immersive games are still restricted by the clear physical separation between player and avatar:

> "I" do not jump while playing *Tearaway*, nor do "I" fight. "I" hold a PlayStation Vita videogame device in my hands, and "I" look at its screen, and "I" listen to the sounds it produces as "I" move my thumbs over its buttons and thumbsticks (miniature joysticks that can be moved with a single thumb). It is Iota who jumps and moves and attacks and throws in response to the movement of my body against a piece of hardware. (Keogh 2018, 1)

Yet it is precisely that bilateral dynamic – the avatar responding and acting in accordance with the player's inputted commands – that problematize attempts to view game worlds as identical to their print and cinematic counterparts: "Any clear distinction between the actual and virtual is destroyed by the perforations my grubby fingers inflict on *Tearaway*'s flimsy world. I tear holes through the videogame's diegesis to look at it, listen to it, touch it, play with it, but never to fully enter it. Videogame play requires a multitude of worlds and a multitude of bodies." (Keogh 2018, 3)

Indeed, the types of influence a player can wield over virtual fictional worlds are practically infinite: from shaping the actual geographical landscape, to enacting political decisions which impact countries and continents, to setting chain reactions in motion that transform the very society in which the story takes place. But in games set in the science-fiction or science-fantasy genres, a more pronounced pattern becomes evident – players are able to use their avatars to steer the diegetic space around them towards utopian or dystopian configurations. More often than not, choice and agency determine which extreme will manifest: the player is asked to direct their character towards taking a particular course of action, in turn altering the world around them.

This is not to suggest that agency and branching narrative structures are mandatory requirements for the transformation of diegetic game space – though, per David Owen's definition, "agency is making decisions and performing actions *that matter* in a consistent diegesis" (Owen 2013, 84).

On the contrary, science fiction games such as the *Assassin's Creed* series feature virtual recreations of famous cities such as Rome, London and Paris, and task the player with gradually assuming control over geographical swathes of the area; this, in turn, implements minor cosmetic changes to reflect the player's success in conquering and maintaining their territories. Other games, such as *Chrono Trigger* (1995) or *Timespinner* (2018), make use of time travel mechanics to subtly alter the appearance of the fictional world: at key points, the player is compelled to make some minor change in the past which alters the present/future, allowing progression into areas that were previously restricted. However, because these changes are predetermined components of their respective narratives, there is no ambiguity or flexibility in terms of their ideological undertones – these alterations do not, in themselves, reflect the player's steering of the virtual world towards some mutually exclusive conclusion. In examining those instances where players are able (and are expected) to express a measure of control over the ascent/descent of the world around their avatar, there is a particular relevance to Neal Tringham's claim that "there may be some connection between sf's affinity for logical extrapolation and (in the words of the critic Robert Scholes) 'structured fabulation,' and the complexly simulative rule systems that underlie many recently developed types of game" (Tringham 2015, 1-2).

2015's *2064: Read Only Memories*, developed by MidBoss, both substantiates and subverts this connection. As a first-person adventure game, *Read Only Memories* prioritizes player interaction with the characters inhabiting a given space – in this case, the futuristic Neo-SF, which the introduction indicates "is on the cusp of not one, but three, technological singularities" (*2064: Read Only Memories*). Specifically, this game projects a fictional world in which cybernetic and genetic augmentation exists alongside advanced virtual reality technology – with the distinct possibility of artificial intelligence imminently achieving sentience. However, *Read Only Memories* distinguishes itself from similar scenarios in science-fictional works within moments, as Neo-SF is not a dystopian landscape formed by misuse of technology. While altered citizens are an ostracized minority, they are opposed primarily by reactionary religious zealots and not by the populace at large. The city itself is bright and colorful, with no evidence of an oppressive totalitarian regime or excessive social devaluing of human life. However, Neo-SF has not quite reached utopian status yet, due to the aforementioned tensions regarding AI as a final Other completely removed from biological origins.

One such AI, Turing – the first truly sapient mechanical lifeform – serves as the player's companion throughout *Read Only Memories*.