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BA Thesis

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Iterations

Utopian Science and Politics in the Mars Trilogy

How are we going to approach the impending *incarceration*

brought on by Progress without lapsing into despair over this

finiteness that contemporary globalization portends?

– *Paul Virilio*

Contents

1 Introduction

Kim Stanley Robinson's Mars trilogy presents an incredibly detailed narrative encompassing two hundred years of alternate (future) history. The scope of his novels allows for the exploration of various scientific and political models. His rich fiction, infused with references to political, cultural and scientific histories, draws readers into a narrative that imagines a radical future for our world and the other, Red world.

The premise of his trilogy is the colonization of Mars. In 2021 a group of one hundred scientists and one stowaway establish a permanent settlement on Mars. More settlers follow soon after. Over the course of two-hundred years, the settlers' technologies become ever more advanced. Their scientific discoveries are shown to have a profound influence on the relationships between them and their surroundings. While most of them strive to create a 'green', Earth-like planet, Terran forces attempt to exploit Mars for its minerals and most importantly its potential living space. As capitalists and scientists transform the planet, new political forms are developed to counter influences from planet Earth and democratize Mars.

Attempts at revolutions fail and succeed to various degrees. Out of the interplay of scientific and socio-political interventions, new democratic forms are fashioned. The scope of Robinson's novels affords him the space necessary to represent the complex processes that continuously determine and change the Martian landscape and the social forms of its inhabitants. Throughout, the Martians are set against an Earth struggling with tremendous ecological problems and economic disparity. When the Martians finally decide on their desired form of planetary politics, there is such a qualitative difference between Mars and

Earth that the conditions for human life are said to be much better on Mars.

This thesis focuses on the representation of political and scientific practices as constitutive for the possibility of a utopian world. Its research question is: can we read the *Mars* trilogy as a utopia? And how do scientific an political processes contribute to this utopian reading? Presenting scientists with political goals and politicians using scientific models, Robinson asserts the possibility of a world changed for the better through human agency. His characters provides multiple perspectives on the scientific discoveries and political struggles that shape both Mars and Earth. They often have a stake in both scientific and political processes, and their efforts to improve the conditions of life on Mars are most effective when political and scientific thought converge. To change Mars, they continuously experiment, trying out new models for revolution and using new technologies to create political opportunities. A distinctly utopian aspect of the trilogy shows in their repeated efforts to change the outcome of history by their interventions. A failure to establish a perfect world does not dissuade them from trying. As they progress, the Martians examine historical data and their core beliefs, set up new parameters and reiterate their experiment. As they learn, the world they create becomes more democratic, egalitarian and just.

2 Theoretical Framework

2.1 The Heuristic Device

In the discussion of the utopian qualities of the *Mars* trilogy, a clear definition of utopia is of importance to us. We will use the concepts of both utopia and science fiction to assemble a structure that guides the interpretation of the trilogy. As we will see, the novels do not always fit our definition and contain certain elements that are different and unfamiliar. The theoretical models given by Suvin (1979) and Jameson (2005) will be used to examine the *Mars* trilogy and its peculiarities.

The analysis of the novels follows from a theoretical framework. Two statements regarding utopia are of importance for this framework. In *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*, Darko Suvin describes utopia as 'a heuristic device for perfectibility, an epistemological and not an ontological entity' (52). Suvin stresses that utopia is first of all a work of literature. The aim of this delineation is to set it apart from political agenda's, travel writing and other forms of non-fiction. As Suvin shows, the fictional nature of utopia is one of its great strengths. As an ontological entity, utopia might be questioned for its practical feasibility (can we really build a habitable spacecraft out of fuel containers?) or be dismissed on account of its failed realization at some point in history. But as an epistemological entity, utopia can be used to produce knowledge about the world. We might ask what is so different in this world that this particular utopia does not seem feasible? Being most useful as a heuristic device 'it [utopia] cannot be realized or not realized, it can only be applied' (52).

In order to better understand the application of utopia, it is necessary to discuss utopia as a sub-genre of the larger category of Science Fiction. What sets Science Fiction apart from other genres is its epistemological function: 'Science Fiction [is] the literature of cognitive estrangement' (Suvin 12). This statement can be broken down into two constitutive parts. The cognitive aspects of Science Fiction are to do with its appeal to a scientific understanding of the world. So, readers of Science Fiction must assume that the natural world is not of itself an ethical world - the success of a trip to mars is not dependent on the moral behavior of the travelers. Predestination, myth and magic are not considered functional devices of Science Fiction narratives, nor are they present anywhere, aside from the character's discourse. The basic assumption is that the presented world can be cognitively grasped and has the internal consistency of, say, Newtonian physics. Even though more complicated environments can be and have been postulated, the point is that the reader must assume that the natural world is governed by natural laws - even if they are not known - rather than being the result of some metaphysical imperative (e.g. divine intervention).

The second half of Suvin's description is concerned with estrangement. A reader of Science Fiction can only interpret such a text as meaningful with recourse to an understanding of 'the "zero world" of empirically verifiable properties' around her (18). That is to say, some things are necessarily familiar. The distinguishing quality of Science Fiction is that it presents a world to be approached cognitively - the reader hypothesizes a logical, consistent framework governing relations between characters and their surroundings (18) - while at the same time presenting phenomena that are not empirically verifiable. Suvin's hypothesis is that this provides readers with a heuristic device, 'a theoretical structure based on analogy' (17), the

analogy here being between the 'zero world' and the narrative world. In applying the heuristic device, the 'zero world' is revealed as historically contingent and alternative configurations seem possible, even if not necessarily probable. Of these models, Suvin considers those centered on alternative socio-economic structures to be utopias. While there are other (more) perfect worlds in writing, utopia is especially concerned with the human relations that make up the world. Other perfect worlds, such as the land of cocayne, are closer to fantasies of basic wish fulfillment than cognitively structured alternate worlds.

Having discussed Science Fiction, estrangement and the particular topic of utopia, we can begin to use Suvin's definition.

> Utopia is the verbal construction of a particular quasi-human community where sociopolitical institutions, norms, and individual relationships are organized according to a more perfect principle than in the author's community, this construction being based on estrangement arising out of an alternative historical hypothesis. (49)

With this definition in mind, we must be attentive to the relation between the narrative and our own world. When we encounter the fantastic, desirable or horrible plots and descriptions of Earth and Mars, they are always themselves arising out of the conditions of our 'zero' world. It is through the mediation of a literary form insisting on the possibility of countless alternative configurations that they seem to us at once as unreal and as possible as our current condition. However, they can never be completely beyond our cognitive horizons. Fredric Jameson posits the dilemma of utopia's political viability as follows: 'the more surely

a given utopia asserts its radical difference from what currently is, to that very degree it becomes, not merely unrealizable, but, what is worse, unimaginable' (*Archaeologies of the Future* xv). Calling utopia a 'device of perfectibility' then seems too optimistic for Jameson. Instead, he suggests that 'at best, Utopia can serve the negative purpose of making us more aware of our mental and ideological imprisonment' (xiii). As far as its value as a political program is concerned, utopia or indeed the *Mars* trilogy would appear to be in a double bind, never practical enough and yet never sufficiently radical. In our historical reality, the end of all human suffering is, for instance, unimaginable. On the hand, it would not do to conclude that such a world is impossible or even undesirable - we can not know this either way. Giving practical schemes for the realization of a better world, we are necessarily rooted to the materials and ideals at hand; the unimaginable, perfect world is radically different and therefore beyond practical thought. Utopia for all its estrangement might be impractical as a political program. Asking if such criticism holds for the novels at hand would amount to a return to the ontological reception of utopia. Nonetheless, it forces us to acknowledge that the heuristic device itself can be critically analyzed.

For now, we will bear in mind the theoretical limits of the concept of utopia and begin to establish the structural aspects of the narrative most pertinent to our analysis.

2.2 Structural Characteristics

Suvin's discussion of utopia is accompanied by his examination of the structural characteristics he observes. First, utopia is a 'isolated locus'. Second, 'a formal hierarchic system

becomes the supreme order and thus the supreme value in Utopia'. Third, the organization of this isolated locus, its system, must be articulated 'in a panoramic sweep' and a '*dramatic strategy*' (50).

However, neither *Red Mars*, *Green Mars* or *Blue Mars* put forth just one isolated locus regulated by a totalizing system. Trying to shoehorn these novels in Suvin's model, the best we might say is that the isolation of the locus of 'universe' is historical (the novels are set in future times), the system is human history (with the assumption of a hidden structure) and the panoramic sweep is the novels from start to finish. But this does not properly account for any of the trilogy's narrative developments. We are much more inclined to say that Earth and Mars are two loci, closely connected and under radically different social orders.

As we will see, this does not detract from our use of the *Mars* trilogy as a heuristic device, nor does it disqualify it as a utopia. Rather, we have already teased out a particular quality of Robinson's vision. For it is the multiplicity of communities and the development of the relations between them that finally results in the idyllic (to a fault) chapter at the close of *Blue Mars*. Instead of waking up to a blossoming tree, readers are put on a "road of history" (Seed 545) along which social injustices dissolve and economic yokes are cast off. On this road, humans and their communities contribute to the emergence of new social relations and organizations and provide the basis for future change. Besides the obvious tribute to a literary tradition that these novels rely on, Robinson's representation of settlements called utopia and Bloch's Hope as geographical locations implies the possibility of working out several utopian schemes side by side.

The Mars trilogy is what Wells called a 'kinetic Utopia', not a 'permanent state' but a

'hopeful stage, leading to a long ascent of stages' (13) We are given not the result of some historical development leading to radically different socio-political relations, but the attempt at a break from a history that is considered debilitating and dehumanizing: 'it is the attempt repeatedly to begin history over again which is the very subject of the work' (Jameson, *Archaeologies of the Future* 412). These attempts, whether they fail or succeed, engender new attempts and new 'stages'.

The structural characteristics that we are starting to discern are closely tied to two simultaneous impulses to the narrative. On the one hand the continuous development and application of technological possibilities tends to destabilize the Martian terrain. The most effective interventions are terraforming, the space elevator and the gerontological treatment. Such discoveries are typical of Science Fiction, and Suvin calls them 'nova'. A novum is '"totalizing" in the sense that it entails a change of the whole universe of the tale' (64). The application of these nova *in medias res* is a part of the 'road of history' structure Robinson employs. By historicizing technological phenomena, he points out both the power and the ethical responsibility that rests with the humans able to develop and deploy them. The next chapter examines this subject in more detail.

Next to scientific developments, the narrative is structured along the development of a political system that all Martians eventually adhere to. To the political issues confronted by the Martians, technological means are both problematic and empowering. The (re-)establishment of a space elevator 'is the persistent emblem of the threat of Terran politics and intervention, and the dilemmas of autonomy and "delinking" on Mars' (Jameson, *Archaeologies of the Future* 412). To counter both the destabilizing and unpredictable

impulses of technology and the 'neuroticism' of Terran communities, Martian politics are developed. The third chapter gives a more expansive analysis of the political developments in the *Mars* trilogy.

3 Martian Science

3.1 The Positivist Universe

In *Archaeologies of the Future*, Jameson observes that science and politics seem to alternate chapter by chapter as the structuring disciplines of Mars's historical development. Indeed, Robinson delays the hard, pseudo-realistic Science Fictional topics until he has set up a dramatic socio-political sphere that envelops the scientific endeavors of the settlers from the start. Nevertheless it is precisely the first encounter with Mars and the home-making efforts it entails that provide the initial scientific paradigm for reading the *Mars* trilogy. The Martian scientists approach the planet as a space for experiment, but their actions have ramifications beyond their laboratories. As the narrative advances, the political consequences of scientific agents are increasingly important.

The prologue to *The Crucible*, the third chapter of *Red Mars*, tells of the formation of Mars and its 'mineral existence'. In a few paragraphs, Robinson meticulously describes the formation of Mars and its evolution into the frozen red planet it still is today. Two aspects of this description are of critical importance to understanding the representation of science. As a process, the history of Mars is the interaction of minerals on a vast timescale. '…fifteen million human generations. Rocks banging together in space, and then coming back and holding together …' (*Red Mars* pt. 3, prologue). The expression of billions of years in human generations signals the relatively short history of human life on earth. Besides the unimaginable timescales, the impressive Martian terrain is being constructed as the result of a very basic interaction of physical elements. Even the great volcano Olympus Mons is a

slowly shifting collection of minerals.

In the narrative that follows, a rain of high-tech tools and machines lands on the planet to have an impact not unlike the meteor fall of the prologue. The appearance of man-made objects is presented as one more contingency in the history of Mars. As Nadia Cherneshevsky's feet hit the ground, they leave boot tracks 'surrounded by small systems of radial fractures' (*Red Mars* pt. 3, ch. 1), changing the planets surface like so many meteor strikes. Nadia's perceives the landing vehicles as a 'long-abandoned alien spaceport' and her fantasy that the Terran spaceport 'Baikonur would look like this, in a million years', (pt. 3, ch. 1) Jameson calls such observations temporal inversions (*Archaeologies of the Future* 394), and we can take his cue to consider the way these objects are historicized. The descriptions of an alien spaceport or Baikonur in a distant future are phrased as possible conditions: 'as if'; 'would look like this'. We are reminded of Suvin's cognitive estrangement as Robinson plays with the reality of the landing vehicles' short history on Mars and the possibility of a time beyond time on Earth. In both cases the author gives a record of history that diminishes human agency. Human presence on Mars is given as a merely material occurrence, much like the landscape of Mars is given as a historically contingent configuration.

As more machinery is gathered, the crates and landers blend in with the Martian scenery.

> Red rocks were scattered all around in their uncanny regularity; voices chattered on the common band: "Hey, I found those solar panels!" "You think that's something, I just found the goddamn nuclear reactor." (Robinson, *Red Mars* pt. 3, ch. 1)

Finding the technological means for their survival and development constitutes the base situation for the settlers. The planet is presented to settlers as raw material including the tools necessary for its manipulation.

To Nadia with her engineering skills most situations appear as solvable problems. Nadia's goal in this early stage is the construction of living spaces; her only imperative is the continued survival of the settlers. But her architectural work (influenced by her socialist friend Bogdanov) already creates the conditions for the social and political distributions that are to follow. Focused on the material conditions of the settlers, she only discerns the fringes of the arguments that will come to structure the ethical and political oppositions that, in turn, determine the course of history.

If Nadia's use of the technological toolkit seems ethically and politically neutral, Robinson undermines the assumption by showing that the toolkit is itself loaded to decide certain arguments. For instance, the use of a nuclear reactor instead of windmills is decided by the availability of the former rather than the latter. The biologist Hiroko's Japanese phrase *Shikata Ga Nai*, there is no other choice, is used to dismiss such hypothetical arguments. As much as this sanctifies the choices made, it also points to the historically determined impossibilities the settlers face. Comments on the manufacturing of certain tools and factories down to the brand names are there to remind us of the Terran capital behind the mission.

We are shown that, even if this seems a neutral and undifferentiated state of mere survival, of building the necessary homes and creature comforts, the settlers are not outside of history. Even Bogdanov's repeated advocacy for self-determination negatively affirms the powerful hold of their Terran origins. Sax's idea that 'It's like the first second of the universe,' (*Red Mars*

ch 3, ch. 1) is characteristically naive. The prologue has described Mars's existence long before humans came to be, and the settlers themselves are deeply rooted in Terran history.

3.2   Science and Agency

One of the most important topics throughout the *Mars* trilogy is the terraforming of Mars. Robinson lays the ground work for a binary opposition between the 'Green' terraformers and the 'Red' preservationists early on in *Red Mars*. The physicist Sax is a strong proponent of terraforming. His stance is positivistic and anthropocentric. Ann is a geologist opposing terraforming, advocating the study and preservation of a planetary surface that is older than anything on Earth. The ensuing arguments between them bring the different ethical and philosophical positions concerning technological intervention sharply into focus.

Responding to Ann's call for the preservation and study of Mars as it exists in 2027, Sax argues that there is no meaning in the minerals themselves, and that 'The beauty of Mars exists in the human mind' (*Red Mars* pt. 3, ch. 5). According to Markley, 'Sax emphasizes our inability to imagine beauty, or knowledge, or usefulness without giving in to a mystical anthropocentrism.' Markley also offers a sharp criticism of this position: 'Yet Sax's insistence on the anthropocentric nature of meaning in the universe ironically reveals the accuracy of Ann's criticism: the basis of terraformation, of Baconian science itself, is an adolescent faith in human significance, a will-to-play (and play God) with the universe' (784). Markley's comment implies that there may be limits to our understanding of the universe and indeed to large-scale technological interventions such as terraforming. As the narrative progresses, the

complexity of this process, especially in relation to other processes, steadily increases.

Commenting on Sax's ambitions to terraform Mars, Franko notes that 'the operational myth here is not "Hubris clobbered by nemesis"' (546). On the contrary, science is a benign, powerful and necessary practice that Robinson represents with as much reverence as the red planet. Especially in the shape of terraforming, 'Robinson delivers a dynamic view of Utopia and a positive view of science as a powerful tool necessary for the creation of a decent human civilization' (545). But then, with all Martians being stakeholders in the process of terraforming, the matter is drawn into the political arena and thereby subjected to a semi-democratic process almost immediately. A number of other such arguments is never presented, or cut short by the sudden intervention of some scientific discovery. Sax secretly disperses a strain of lichen to raise the Martian temperature. It is at long last 'not one of his better efforts' (Robinson, *Green Mars* pt. 4, ch. 5), but his individualistic attitude is representative of several other independent, isolated scientists who drastically change social conditions.

One such change is caused by the introduction of the longevity treatments by Vlad and Ursula. The introduction of the treatment has great socio-political consequences and it initially produces only inequalities. The Acheron group, much like the later Da Vinci group, has set its own agenda and ethical standard. At this stage in *Red Mars*, more people have settled on Mars and the idealistic politician John Boone has been traveling to build support for independence. Unbeknown even to this political forerunner, Vlad and Ursula have released bacteria that will alter the biosphere and given out treatments without hesitation. Boone is shocked by their imprudence, imagining the effect of their discovery on the 'teeming billions'

on Earth. 'We are the experiment', says Ursula, having decided to 'leave the decisions to the authorities down there' (*Red Mars* pt. 5, ch. 5). Much later, studying Terran history, Sax 'decided that it was the longevity treatment which had pushed things over the edge' and sent Earth into a downward spiral (*Green Mars* pt. 4, ch. 6). The scientists however have made the distinction that while the process of developing the treatment is a scientific affair, its application a political one.

Besides terraforming and the longevity treatment, another technological novelty is of importance. Early on, Phyllis Boyle makes plans for a space elevator. Phyllis is an American prospector working for several *transnats*, Terran transnational corporations that increasingly overshadow national economics. Over the course of the narrative, the transnats grow into *metanats*, subsuming national politics and economics. With Phyllis as their agent, these corporations seek to exploit Mars for its resources. They develop the space elevator as a cost-effective way to transport goods and labor to and from Earth. Sax welcomes the space elevator as it 'will cut the costs of terraforming,' but John Boone is more sensitive to the political consequences of a fast connection to Earth and warns him that whoever pays for the elevator 'calls the shots' (*Red Mars* pt. 5, ch. 2). In the revolutions, the space elevators become contested sites of power, since they allow the opening up and closing off of Mars to Terrans.

Taken together, the three Martian innovations - terraforming, the longevity treatment and the space elevator - largely define socio-political relations between the two planets and on them. Of the three, only terraforming is defined as a political issue from its conception. Both the longevity treatment and the elevator are the result of independent projects of respectively

the Acheron group and the Terran metanats. The scientific developments leading up to them are lead by characters mostly absent from the narrative, only appearing once the work is done. Vlad, Ursula and Marina, but also Hiroko and sometimes Sax, operate in a space that Robinson has cleared for them and that is barely represented. Jameson is right to 'interpose the reminder that the novel offers a mimesis of science and scientific activity and not the thing itself' (*Archaeologies of the Future* 393), and even the mimesis offers only a careful selection. The elisions of crucial developments from the narrative allows technological and scientific efforts by individuals and small groups the potential to suddenly impact the narrative. Kenneth Knoespel comments on these elisions, writing that

> 'Although technology is omnipresent, it is not accompanied by a detailed account of how such feats were possible or how they are even economically viable. Technology is portrayed in ways that appear simultaneously realistic and marvelous. Such magic suspension creates a mythos not of a particular artifact, but of the technological systems themselves.' (130)

As an example of this, the scientists synthesizing new materials are referred to as alchemists. Their abilities are necessary for human survival on Mars, but the intricacies of their work remain hidden. The pervasiveness of technological innovation suggests a scientific force constantly transforming the human environment. But the histories of the three major technological interventions also beg the question if increasingly 'god-like' powers can be entrusted to any one scientist. As the trilogy develops, the (political) responsibility of the scientists becomes an important topic.

3.3 Politics and Emergence

The great potential for global change present in the scientific ventures of the Martians initially falls within the positivist paradigm. Modifying the planet's atmosphere and heating it using giant mirrors are calculable, practical matters. Moreover, technological and scientific development is done mostly in a private space, outside of any communal politics. As more parties are beginning to exert their influence on Mars, this changes. Science becomes politicized and its interventions are more often represented as complex and interrelated. A new scientific paradigm is introduced to address these increasingly complex and intertwining processes.

In 2061, a violent revolution against the metanats breaks out, destroying many Martian settlements but yielding little political results. After the revolution has failed to expel the transnats from Mars, many of the First Hundred go into hiding. Sax resurfaces to continue his work, disguised as Stephen Lindholm. In 2102, Sax visits the annual conference on terraforming in Burroughs. He is an authority on terraforming, but his disguise forces him to abandon his influential position and limits him to a role as observer. Before attending the first lecture, Sax looks at poster displays on a number of different topics, from 'Post-Pumping Subsidence in Southern Vastitas Borealis.' to 'A Method for Assessing Occupational Exposure to Chlorophenates Through Analysis of Contaminated Work Clothing' (*Green Mars* pt. 4, ch. 5). We become aware of the fact that many scientists besides Sax are and have been applying themselves to all aspects of terraforming. But Sax is focused on his own influence and so 'the posters that held him the longest were those that described aspects of

the terraforming that he had initiated, or ones had a hand in' (pt. 4, ch. 5).

The first lecture Sax attends gives the state of affairs in terraforming Mars. It examines 'the various heating methods that had been tried …Sax had initiated every single one of these processes in the 2040s and '50s.' It is finally concluded that little synergistic effects have occurred in the implementation of the various interventions. The lecture seems to appeal to Sax because it grants him an important position in the manipulation of a mechanistic world. But as the conference goes on, Sax becomes progressively dismayed with the arguments over future terraforming efforts. 'The pure play of scientific discourse which he so enjoyed (and which admittedly was never quite pure) was now more and more diluted'. On the one hand, Sax discerns the increasing political influence of Terran transnats.'They were entering that unfortunate zone where science began to drift into politics' (Robinson, *Green Mars* pt. 4, ch. 5). On the other hand, he is aware that the 'monster projects …were going to have such major impacts that they affected almost everyone else's programs' (pt. 4, ch. 5). If there were no synergistic effects before, the conference shows that multiplicity of inputs into the Martian system make its transformations highly unpredictable. The paradigm of mechanistic positivist science is beginning to falter as 'different people were hacking about with different ideas and different toys, arguing and working against each other, bringing ever more powerful and expensive methods to bear, but with ever less coordination. They were going to ruin his plan!' (pt. 4, ch. 5)

A more suitable scientific paradigm is already being introduced in the narrative at this point. As a part of his disguise, Sax needs to change his social interactions. This forces him to study social behavior, 'the calculus of human interaction being so much more subtle

and variable than any physics, somewhat like the emerging field of math called cascading recombinant chaos, only less simple' (*Green Mars* pt. 4, ch. 2). The concept of cascading recombinant chaos is later used by other characters to designate systems beyond total understanding and control, such as the recurring revolutions. These systems, says Sax, can be used to model, but not to predict. In *Blue Mars*, emergence theory starts to appear in the characters discourse as they discuss the horizons of predictive models and the limits of understanding complex systems. Both cascading recombinant chaos and emergence theory seem to have their correlates in contemporary chaos theory and systems theory. They do not necessarily discard a mechanistic perspective but show it to be ineffective in long-term predictions or describing highly complex systems.

When Sax is discovered as an impostor, metanat security forces torture him and damage his brain. After his convalescence, Sax's interest in language, psychology and the weather signal a departure from a totalizing, mechanistic scientific understanding and intervention. Modeled after emergence theory, Robinson writes that meteorological phenomena 'had predictable effects, perhaps, but in combination they made Martian weather a very hard thing to understand, and the more he watched, the less Sax felt they knew. But it was fascinating, and he could watch the iterations play out all day long.' (*Blue Mars* ch 9, 1) As a correlate of terraforming, the unpredictable Martian weather illustrates Sax's inability to control all the effects of his interventions. Even if the original intervention can be understood as the sum of its parts, its consequences are unpredictable, cascading and interacting with other processes.

The technological marvels Robinson presents have the potential to benefit the Martians and Terrans. However, as their application repeatedly shows, their effects further down

the 'road of history' can not predicted by the scientists and engineers that developed them. Moreover, the various perspectives on goals, means, and ethics signify that scientific development is never unequivocally positive. Jameson directs his discussion of the Mars trilogy away from the concept of indeterminacy (*Archaeologies of the Future* 395) precisely because of this well-known idea: that science is a *pharmakon*. The *pharmakon* is, in Derrida's words 'both remedy and poison', a 'spellbinding virtue ... - alternately or simultaneously - beneficent or maleficent' (70). And we can certainly find that science in itself is presented as ethically 'void', with the terraforming resulting in the death of several characters but still ultimately affording decent living space. We are thus shown that technological power can be used both to positive and negative effect. The reason for Jameson's insistence on the concept of overdetermination is that we cannot disregard the interactions between science and its social, economic and political environment. The initial description of the settlers' toolkit is already indicative of this, as Terran historical trajectories find their way to Mars in the form of brand names and ideologies. These trajectories are always already there, so that the scientists and their various utopian plans are always 'falling into history' (Robinson, *Red Mars* pt. 5).

4   Martian Politics

4.1   Internal and External Pressure

The *Mars* trilogy shows a general transition towards global, democratic politics. Along the way, several defining moments pass. Each time, Martian politics are restructured, providing input for the next moment. Robinson presents a view of politics that prefers negotiation and direct democracy over violence and hierarchy. Over time, the prominent political powers try to learn from past mistakes and victories. Large democratic conferences are held to establish a set of common values and rules. The (attempted) revolutions are increasingly effective and, eventually, less violent.

Because Robinson lets Earth's social, political and economic situation deteriorate rapidly as the trilogy progresses, Mars becomes a more desirable place merely by contrast. The revolutions then serve to stave off the potentially destructive Terran influence. Especially threatening are the capitalist system and the Terran cultures that psychologist Michel calls 'neurotic at their core' (*Blue Mars* ch 12, ch. 4). The former threatens the destructive exploitation of both Mars and Martians; the latter, according to Maya, threatens to distort social relations by letting 'all the xenophobia and misogyny in those old cultures break out again' (ch 12, ch. 4). These are the negative influences that the Martians resist during the revolutions. They give a negative political agenda, stating there must be no capitalist exploitation and no hierarchical inequality.

At the conferences a positive political agenda is worked out. If Earth has turned into a dystopia, these conferences are where several utopian visions are presented simultaneously.

Although the negative political agenda, concentrated on external pressures, suggests a homogeneous group, attempts at imagining a Martian future reveal the Martians as politically and culturally heterogeneous. Consequently, rather than arriving at a culturally unified system of human relations, the Martians find commonly held moral principles among distinct Martian communities. At the conferences, utopia takes the shape of a multiplicity of voices struggling for harmony, like 'Arab ululations harmonizing with yodels' (Robinson, *Green Mars* ch 7, ch. 1). Art Randolph is there to convince us of the possibility of reaching a global consensus: '"They don't agree about much," he admitted. "But it always starts that way."' (pt. 7, ch. 1).

These two movements, the revolutions on the one hand and the conferences on the other, are closely related. The latter are held to establish internal coherence, to figure out the defining principles that will be held on Mars. The revolutions are there as a resistance to Terran influence. Terran history comes to be external to Mars, and like under the geodesic domes, internal pressure needs to be exerted to protect the division between inside and outside, Mars and Earth. Imagining an alternative to Terran history both requires and produces resistance.

The previous chapter has shown that science becomes increasingly politicized as its interactions with its environment become more complex. Politics, on the other hand, are influenced by the scientific perspectives provided by the trilogy's protagonists. As the Martians build their resistance against Terran forces such as the metanats, their political strategies vary in a way reminiscent of scientific experimentation. This is most apparent in the reflection on previous revolutions and their consequent stagings. In this chapter the

success of the revolutions is shown to depend on the evaluation of the preceding ones to arrive at different, more perfect revolutions. Finally, the shifting scientific perspective provides possible analyses of the democratic processes in the *Mars* trilogy.

4.2 The Second Revolution

The first chapter of *Red Mars* dramatically poises John Boone's utopian ideals against Frank Chalmer's harsh cynicism. Cho argues that, rather than physically, 'In Robinson, separation is accomplished symbolically when the First Hundred ignore the parameters of the UN charter.' (67). To idealist Boone, this separation suffices to assure a crowd of followers that they had all become 'fundamentally different beings' (Robinson, *Red Mars* pt. 1, ch. 1). To his antagonistic long-time friend Frank Chalmers, however, these are 'all lies', 'but lies were what people wanted; that was politics' (pt. 1, ch. 1). Not much later, Chalmers orchestrates Boone's murder. Markley calls it 'an act of near-biblical betrayal' (788), pointing out both the would-be brothers' ethical disparity and Earth's long history of violence. With this murder, then, Robinson has successfully lowered our expectations of a clean break from history. Chalmers recognizes the spiritual influence of the Martian terrain: 'How to say that they alone in all that rocky world were alive, their faces glowing like paper lanterns in the light?' (Robinson, *Red Mars* pt. 1, ch. 1) But his contempt for the Arab faction that he uses to murder Boone reminds us that there can still be destructive Machiavellian politics in the new world.

The build-up to the first revolution is described with more overt historical references. Arkady Bogdanov revitalizes socialist ideals and emphasizes the possibilities of an autocratic

settlement: 'Everything should be redesigned from the beginning, with our own thinking expressed.' (*Red Mars* pt. 2, ch. 2). So, Arkady tries to influence his peers and fashion a socialist utopia. But the Terran metanat's power on Mars grows, and Arkady assures Boone that 'It will take something much more radical to stop these people, John. Direct action …Seizure of some property, or of the communication system - the institution of our own set of laws, backed by everyone here, out in the streets …Mass demonstration and mass insurrection are the only things that will beat them, history shows this' (pt. 5, ch. 8). An outspoken revolutionary, Arkady is eventually killed in the revolt of 2061. As Cho explains, 'the first revolution …is a complete and total failure' because of the vulnerability of Martian settlements (68). All such towns are domed by translucent plastics, and these fragile biotopes are easily poisoned by letting oxygen out or adding it and then setting the air ablaze. Arkady is killed in a firestorm in Carr Crater and here 'Robinson is clearly uninterested in glorifying or romanticizing revolutionary violence' (68). One dead among many, Arkady is not a martyr and the revolution brings only destruction.

And yet, another revolution breaks out 'only' 66 years later, in 2127. Despite the disillusionment of the failed first revolution, especially among the First Hundred, the Martians try again, twice. Drawing from Slavoj Žižek and Ernst Bloch, Cho argues that this repetition is an important part of Robinson's utopian agenda.

> An action's failure creates the conditions of possibility for its success thus enabling, even begging, its repetition …On this utopian account of repetition, Robinson's technique is in fact an attempt to reclaim the revolutionary method's

utopian kernel. As a result, the revolution in Green Mars redeems what is missed,

what remains Not-Yet, in the monstrous Revolution of 61 ... (71)

But trying for the same goal again is not simply a matter of repeating one's actions. When the Dorsa Brevia conference is held to produce a declaration of commonly held principles, the failed revolution is a hot topic. At the conference, imagining Mars as a community and imagining effective forms of resistance are two sides of the same coin. Of two daily, general meetings, 'One ... would focus roughly on the problems of achieving independence, the other on what came after ...' (Robinson, *Green Mars* pt. 7, ch. 1). Art Randolph talks of 'means and ends meetings', and the revolution of 2061 is one of the means under scrutiny. As Cho writes, 'the fact that [it] failed in the past is not evidence that it is outmoded or incompatible with Utopia' (72).

Of the Dorsa Brevia conference and the Constitutional congress of 2128, Robert Markley notes that '[they] are foreshadowed, in some respects, by the scientific conference on the progress of terraformation'. Here, scientific discussion is tainted by (Terran) political influence. But this 'blasted ideal of disinterested politics,' according to Markley becomes 'the animating force behind the efforts ... to broker an ecologically sensitive politics ... What finally succeeds at Dorsa Breva and the constitutional conference is the process of compromise itself, a kind of Utopia by committee.' (Markley 791)

What is of interest is that the adjustment to a more political frame of mind does not necessarily impede the scientific prowess of the protagonists. In fact, the Dorsa Brevia conference presents scientific modeling and experimentation as a definite means to finding

solutions to political problems. The conference is organized by 'the Swiss', Robinson's model (bordering on stereotype) for rational diplomacy. By dividing the conference into different *workshops*, they cast Mars's future as a set or system of separable engineering problems.

The positivist perspective on Mars discussed in the previous chapter becomes an influential force at this point. Markley draws our attention to 'Robinson's oxymoronic phrase "historical simulations"' (775). As he explains, simulation is essentially creation, albeit it creation of a simulacrum. Even if simulation does not change our material world, it is real in the sense that it presents another cognitively structured, perceptible world. Always already alternative to our world, 'sci-fi does not represent historical experience but generates simulations of what that experience may become.' (774). We can argue that the scientists at the Dorsa Brevia conference do exactly this: imagine history (past, present and future) according to a rigid cognitive framework. In the workshop on the revolution of 2061, different models are compared and hypotheses regarding a successful revolution are tested. Among the different voices, Sax surfaces as the dispassionate, disinterested scientific one. 'Sax stood and waved his AI over his head. "Need facts - *first*," he croaked. "Then the dialysis - the *analysis*."' (*Green Mars* pt. 7, ch. 1)

Among the most important simulations are those on different types of terraforming. Moving beyond the ecological impact of certain interventions, the Dorsa Brevia conference considers the matter in political terms. Interestingly the external pressures of Terran influence are used as arguments both for and against terraforming. The workshop on 2061 has posited the atmosphere on Mars as a determining factor in the failure of the revolution because tented cities were easily destroyed. Robinson describes the unavoidable argument over terraforming

between Ann and Sax as ending up 'in a dialectic nearly drained of anger'. But by trading the ethical arguments against terraforming for political ones, Ann practically hands Sax the necessary synthesis of science and politics. The ethical arguments against terraforming can not be overcome, as their discussions repeatedly show. The political ones, however, offer themselves to Sax as solvable, scientific problems.

When the second revolution begins, Nadia anticipates: 'Now came the chaos. 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.' (*Red Mars* pt. 10, ch. 1) It is only during this chaotic period that we learn of all the efforts made in preparation for the revolution. It becomes clear that 'General Sax' has developed a revolutionary toolkit of weapons, satellites and co^2-masks. Art Randolph's integrated pest management concept seems to aptly describe his strategy: 'a variety of methods of varying severity are used to deal with the pests you have' (*Green Mars* pt. 7, ch. 3).

As a repetition of 2061, the second revolution is successful because the protagonists have, in good experimental fashion, adjusted certain parameters. The most symbolically important of these is the viability of the surface that Sax predicted would be crucial. By growing 'fireseed trees' and a strain of lichen that produces a lot of oxygen around Kasei Vallis, the surface becomes closer to viable as well as highly oxygenated. The intervention is perfectly poised between the violence of 2061 and the non-violent resistance of the final revolution of 2212. First, the oxygenated air allows Sax to set fire to the metanat's security compound; retribution for both his own torture and the burned civilians of 2061. But second, the oxygen levels (in concert with a spell of high atmospheric pressure) allow yet another tactic. When the

settlement Burroughs is flooded by an act of misdirected violence, Sax's face masks allow the evacuation of the city and, according to Jameson, 'symbolically "walking away" (G 523) from the old system, the old way of life.' (Jameson, *Archaeologies of the Future* 415)

The second revolution ends up between violent and non-violent, successful but not without bloodshed. In the final stage, the last stand of the Terran forces around the space elevator becomes a bloody battleground where the most violent Red revolutionaries lose their lives. They represent the remaining attitudes of the first revolution, using one destructive tactic for every situation. Moreover, they are the most ideologically entrenched group, opposing not only the Terrans but many Martians as well. In *Blue Mars* the planetary ecology and climate stabilize, resolving the opposition between *Reds* and *Greens.*

4.3   The Constitutional Congress

After the second revolution has temporarily abated the Terran influence on Mars, a constitutional conference is held. The problems on the table at the constitutional conference are most aspects of daily life. Internal consistency rather than a successful revolution is the goal of the conference: 'They were in a bubble in history, a moment only; it could collapse anytime' (Robinson, *Blue Mars* pt. 3, ch. 3).

William Burling likens the democratic process in *Blue Mars* to the radical politics described in Laclau and Mouffe's *Hegemony and Socialist Strategy: Towards a Radical Democratic Politics* (1985). He offers the difference between the revolutions and the congress as one between 'popular struggle' and 'democratic struggle'. The former is 'always and only

two-sided', as in the Mars - Earth opposition. The latter arises in 'capitalistic societies where a "variety of possible antagonisms" exists, many "in opposition to each other"' (78-79). The democratic struggle is where these antagonisms together construct a political consensus while not necessarily being resolved. When the Martians arrive at a constitution it does not fix the discussion on terraforming, but rather the various parties agree to create a common space for having this discussion and settling specific debates.

The constitutional congress is divided into different topics, evidently using the same structure as the Dorsa Brevia conference. The different topics reflect the different aspects of life that the constitution must weigh against each other. Social engineering emerges as the appropriate method for balancing the different groups and interests on Mars. As Nadia works to provide an all-inclusive political structure, '[S]he was encouraged by the options Charlotte had described; they were structures after all. Engineering of an imaginary sort, which nevertheless resembled real engineering.' (Robinson, *Blue Mars* pt. 3, ch. 4) There is a precedent for the analogy between engineering and politics in Arkady's remarks on the social functions of architecture: 'Buildings are the template of a society' (*Red Mars* pt. 2, ch. 2). The constitutional congress similarly attempts to engineer a template of Martian society.

Robinson dwells on the evidently utopian possibilities of the different ideas and models presented at the conference: 'The potential was so delicious . . . To go from that to the mundane problematic of the constitution as written was an inevitable letdown . . .' (*Blue Mars* pt. 7, ch. 7). Eventually, however, Nadia decides it is 'time to drop the keystone in the arch' (pt. 7, ch. 7) and asks all parties to finish their part of the constitution. The (engineering) metaphor is in keeping with our consideration of the congress as an attempt to provide

internal structural consistency. The keystone holds up the arch by balancing it against itself; the constitution holds up Mars's socio-political structure by balancing different interests.

For the complexities of the Martian population are atomizing to such a degree that there seem to be more differences than likenesses between its constituents. Burling recognizes the multiplicity of voices, but argues that '[The Martians] are used to the idea of multiple perspectives, and genuinely respect the existence of such views.' (82) More importantly, because of 'the political melange, the impossibility of block voting, or of even thinking in the normal constituencies'(Robinson, *Blue Mars* pt. 3, ch. 6), there are no fixed political alliances at the conference. This does not result in a deadlock of incompatible opinions. Instead, the constitutional text emerges out of the interplay of the different groups.

The Martians write up a constitution that is itself constituted of the various (dis)agreements that the congress produced. The topic described in the most detail, however, is the transition from capitalist economics to eco-economics, a model developed by Vlad and Marina. In eco-economics, energy efficiency becomes the supreme value. As Marina says, 'Everyone should make their living, so to speak, based on a calculation of their real contribution to the human ecology' (*Red Mars* pt. 5, ch. 6). This calculation is not to be 'arbitrary' but built 'on principles that make sense in scientific terms' (pt. 5, ch. 6). The constitution effectively adopts eco-economics as the mandatory model for Martian economies. At the same time, an environmental court is instituted to democratize environmental disputes such as those over terraforming. As a result, scientific models will be used as a basis for judicial rulings on economic and ecological disputes. Science becomes a source for political power, while scientific practice is definitively subordinated to democratic decision making. Later,

presenting one such environmental issue, Robinson writes that 'the days were long gone when Sax or anyone else could choose a terraforming project and then go out and do it' (*Blue Mars* pt. 7, ch. 4). The work that is done, however, is done more effectively as financial influence is kept to a minimum. 'With scientists in control of their work, to a degree never seen in [Sax's] youth on Earth, the work itself had an unprecedented rapidity and power.' (pt. 13, ch. 4)

Knoespel's comments on the elision of the workings of technological systems in the previous chapter also pertain to economics. 'Although economic theories are considered, the finance systems that enable the Martian cities to be sustained are not described. As a consequence, technological apparatus …contribute to an ideological trajectory.' Rather than have a market or financial interests decide on the development and application of technologies, the Martians insist on strict democratic control of the systems (technological or financial) that they rely on. With economics and science being yoked together and subsumed under the Martian democratic struggle, another ideological trajectory offers itself up. For the representation of the democratic process itself relies on elisions of crucial moments to move towards the resolution of apparent binaries such as Reds (anti-terraforming) and Greens (pro-terraforming). Nadia's insistence on a final draft 'revealed something that had not been clear before, which was that most of the issues had been resolved to the satisfaction of most delegations.' (*Blue Mars* pt. 3, ch. 7)

To understand this as an 'ideological trajectory' we can again turn our attention to Burling's comparison. His interrogation of the Martian democratic process produces two observations. First, the various political positions expressed are always fluid, subject to constant change. We can see this in the heterogeneity of the Martian political landscape,

allowing for every possible combination of (for example) ethnicity, cultural heritage and political stance. By presenting a multitude of possible identities for every individual, Robinson avoids the factionalization of identity politics and instead opts for political positions based solely in ideology. This means that every position is itself subject of political discussion, rather than being fixed and given as absolute difference.

The second observation follows from this and has to do with the aim of the democratic process. According to Burling, 'The establishing of a provisional *hegemony* ... becomes the only possible goal and measure of political success and social agreement simply because the relationships and the identities of the antagonists and their differential elements are forever "incomplete and pierced by contingency".' (83) There is no end to the political process insofar as it reflects the different political agents that are always in flux. These different agents and the various positions they may occupy need to be balanced against one another, but do not necessarily need to be resolved. What the Martians finally agree to is a society that is never finished but instead takes the form of a constant democratic process. At the heart of their constitution are the environmental court and eco-economics that demand a sustainable ecology to ensure the continued possibility of this process.

While we can distinguish the constitutive elements of the Martian democratic process, we can not account entirely for the agreement reached between the different delegations. The introduction of emergence theory into the narrative is suggestive on this point. Through the trilogy, Robinson implements a shift from a mechanistic view of the universe to one that integrates the limits of predictability and human consciousness in the form of emergence theory. What remains is the assumption that the universe is constituted of material,

knowable things. History, as Suvin's theory of science fiction demands, is a changing material configuration. By analogy, the political agents active during the congress are part of a configuration out of which a new configuration will emerge.

The strongest arguments for this analysis come from the trilogy itself, as the characters in *Blue Mars* reflect on the political history of their time. Sax's interest in the humanities leads him to examine history and politics. He thinks that 'One could try to regard politics as a kind of science - a long series of experiments in communal living … Certain constants or principles seemed to have emerged over the centuries …' (*Blue Mars* pt. 9, ch. 2). Charlotte Dorsa Brevia, largely responsible for the organization of both the Dorsa Brevia conference and the constitutional congress, gives a 'metahistory' describing 'a "residual/emergent complex of overlapping paradigms," in which each great socioeconomic era was composed of roughly equal parts of the systems immediately adjacent to it in past and future.' (pt. 11, prologue) Her analysis connects Althusser's concept of overdetermination and emergence theory. Althusser describes overdetermination as meaning 'the reflection in contradiction itself of its conditions of existence, that is, of its situation in the structure in dominance of the complex whole.' (209) The contradiction that for Althusser drives history does not appear in its pure form but as a 'variation' of the historical situation in which it is exists. This means that there is no absolute binary of Mars and Earth, but that the contradiction between them (somewhat analogous to the labor - capital contradiction) is determined by both existing and historical conditions. Following this logic, Vlad thinks of capitalism as 'a version of feudalism in which capital replaces land, and business leaders replace kings' (*Blue Mars* pt. 3, ch. 3) even if the feudal epoch has long passed. Their (Terran) past to the Martians is a 'positive and active structured

reality' (Althusser 115) even on their own planet, and it does not suddenly fall away after the revolution. But Charlotte's model incorporates emergence theory to portray a future that is not historically determined but open to virtually all possibilities that human agency might bring about. The concept of overdetermination can be used to understand history, but the future is the result of interactions of such complexity that it can hardly be predicted.

Jameson argues that 'the scientific problems described in the novel ...offer an allegory, by way of the form of overdetermination, of social, political and historical problems' (*Archaeologies of the Future* 396). Conversely, we can argue that the political process is itself explained according to a developing scientific paradigm. The use of the concept of emergence signals that causal relations do exist, but that they are themselves interrelated. The ensuing interactions are to complex to be properly predictable. There are some references to cybernetics (e.g. 'holonomy. Study of whole systems.' (Robinson, *Blue Mars* pt. 9, ch. 1)) as a possible answer to this conundrum, but more important to our utopian reading of the *Mars* trilogy is the realization that there is a horizon to our understanding of the world. This horizon would then also pertain to our understanding of radically different politics.

Before writing *Archaeologies of the Future*, Jameson wrote of the fear of obliteration in utopia. He asks, 'Is it not possible that the achievement of utopia will efface all previously existing utopian impulses?' ("The Politics of Utopia" 52) We notice something like this when reading Thomas More, namely that the utopians are somehow empty, that they are never represented as recognizable individuals. It may be that the elision in the representation of the Utopians, or the Martians at the end of their radical democratic struggle, is not a sign of some psychological lack or mental void. It may instead be a sign of the failure - the limits -

of our imagination. Confronted by this failure, we might indeed be forced to consider 'the ideological closure of the system in which we are somehow trapped and confined.' (46)

From this we can understand why the paradox of a non-violent revolution, democratic yet spontaneous can hardly be represented:

> 'A gun shot, a bell rung, a choir singing counterpoint.
>
> The third Martian revolution was so complex and nonviolent that it was hard to see it as a revolution at all, at the time; more like a shift in a ongoing argument, a change in the tide, a punctuation of equilibrium.' (*Blue Mars* pt. 14, prologue)

Robinson shows the non-violence of heated negotiations as a repeated attempt: 'they kept it happening' (*Blue Mars* pt. 14, prologue) in a sense that is reminiscent of Cho's argument that the revolutions require repetition. The third revolution is the most successful attempt at 'areogel revolution', a synthetic, non-violent, smooth revolution. And even this revolution needs constant affirmation to succeed, a continuous attempt to '[seize] the moment, and [wrench] it in a new direction' (pt. 14, prologue).

5   Conclusions

We have examined the scientific and political development in the *Mars* trilogy and noticed that they become increasingly intertwined. Arguing over terraforming, scientists use political arguments; preparing for revolution, politicians use scientific methods. As a conclusion to this examination, we can use the theoretical framework of the first chapter to ask if and how these developments contribute to a utopian world.

Suvin asks that we consider utopia as a product of the historical conditions of its writer. Jameson is adamant that we think of utopia as a negative category, as a way to criticize these historical conditions. Utopias such as Morris's *News from Nowhere* provide intelligible schemes for criticism according to this logic; non-alienated manual labor is good; alienated factory work is bad. Robinson's *Mars* trilogy, as we have already noted, complicates this logic by presenting the development of different socio-political structures rather than presenting them as absolute and ready for our inhabitation. In Morris, the given history nicely accommodates its utopia. In Robinson, history is a powerful force that determines social conditions to a large extent. Like the Martians, readers are never sure of the enduring success of the social experiment.

The alternative is to examine this 'historical simulation' Robinson gives as a model for progress. Robinson has '[defined] science fiction as "a collection of thought experiments that propose scenarios of the future ...They are historical simulations' (Markley 773). In his *Mars* trilogy, the simulation incorporates a historical model that generates constant change. The scientific and political developments he describes are part of history, continuously

redetermining social relations. Over the course of the narrative the Martians become increasingly aware of the limits of their influence on these overdetermined developments. Their experimental approach to politics allows them to determine the effectiveness of interventions and so strive towards their ideals of freedom and equality in all aspects of life.

The cognitive aspects of Robinson's work focus on the portrayal of social relations as historically determined and fundamentally defined by material conditions. The Martians might say that their social relations emerge out of a previous configuration. The utopian promise of the trilogy is that processes of becoming, like emergence, allow a certain measure of agency. Seed cites a 1996 interview in which Robinson says that '"The novel says that people might go [to Mars] for what are essentially false or bad motives ... but then the good motives can eventually overrun them"' (547) In Robinsons trilogy, the future is not historically determined: 'Charlotte was insistent that there was no such thing as historical determinism, but only people's repeated efforts to enact their hopes' (*Blue Mars* pt. 11, prologue). The important role given to hope connects Robinson's idea to Jameson's distinction between Bloch's utopian program and utopian impulse (Jameson, *Archaeologies of the Future*). The idea implicit in Charlotte's theory is that the utopian impulse, the principle of hope for a better future, is always already present in history. The Martians have 'enacted that hope' (Robinson, *Blue Mars* pt. 11, prologue) and experiment with and simulate different possible futures.

As the narrative progresses, the estrangement increases. As a narrative of the historical separation, Robinson begins his trilogy in a world close to the 'zero world' of his time. The mechanistic, positivist scientific paradigm with which the scientist confront Mars is easily accessible. Likewise, the model of revolution as a violent and destructive uprising is familiar.

During his future history, Robinson begins to problematize these views and demands the reader's openness to other perspectives. The scientific paradigm shifts to one that asserts the intrinsic limits of human understanding and so challenges anthropocentrism. The representation of revolution begins to reject violence and moves towards negotiation and inclusive, egalitarian democracy. Towards the end of *Blue Mars* the politics have become so alien that they can only be represented through metaphors.

Combining the cognitive and estranging reading of the narrative with the depiction of science and politics, Robinson offers some strong criticisms. Jameson argues that a 'specific root of all evil from which all the others spring' is found in all utopian narratives (*Archaeologies of the Future* 12). Reading the Martian democratic process in his proposed negative way, transnational capitalism appears to us as the greatest evil threatening the Martians, already having steered the Earth towards catastrophe. The Martians develop eco-economics as the solution to dehumanizing and ultimately unsustainable capitalism. Robinson wields historical points of reference to draw our attention to the ongoing capitalist exploitation of Mars. John Boone's 'the colonial era is over, you have to remember that' (*Red Mars* pt. 5, ch. 6) is more of a warning than a comfort. As Leane writes, 'The Martians realize ...that the economic inequality that is engendered by capitalism is not separable from postcoloniality.' (p.91) and that capitalism is defined by the ongoing attempt to subordinate other systems. In the political struggle that follows, ecological sustainability and capitalism are posited as incompatible opposites. Moreover, capitalism detracts from freedom and equality.

By drawing the analogy between our zero world and the narrative world, the heuristic device we discussed in the first chapter has thus produced a (common) criticism of our

own time. An interesting aspect of Robinson's trilogy is that, besides producing a world that elucidates our own, it describes the transition from the latter to the former. This is why the structural characteristics given by Suvin do not strictly apply to the *Mars* trilogy. Mars is never an isolated locus as it is constantly connected back to Earth both in time and space. The hierarchic system that determines, for instance, More's Utopia is yet to be installed for the most part of the novel, and when it is, it remains open to change. What we do get is a dramatic strategy that uses multiple perspectives to avoid any fixed meanings.

The transition, or separation, that Robinson writes centered on the criticism of both science and politics. To arrive at more perfect socio-political relations, the apolitical disinterested scientists have to become aware of their relation to history and society. The entire movement towards the political subordination of technological development is one that we can read as highly critical of any isolated 'will to play' with scientific discoveries, even more so when they have unpredictable ramifications. The ecological problems on Earth are one example of the possible outcome of a failure to direct technological change towards structural and sustainable improvement. As the installation of the environmental court shows, a certain political awareness of the dangers and opportunities of scientific development is called for - even more so when financial interests threaten to disturb the 'purity' of science.

We began by asking if all this can be said to constitute a utopia. Considering utopia as a heuristic device, we can answer with an unequivocal 'yes'. The process of change Robinson describes is not only one that leads to a desirable world, it is itself presented as something desirable, if only because the trajectory of Earth is decidedly dystopic. At the end of *Blue*

Mars, Ann reflects on what the Martians have achieved: 'Nowhere on this world were people killing each other, nowhere were they desperate for shelter or food, nowhere were they scared for their kids.' (*Blue Mars* pt. 14, 1) Using our theoretical framework we can give a powerful interpretation: Robinson's Mars presents a desirable world, and in that instance reminds us of our own. Then, we need only to invert the statement to see our world as one in desperate need of change.

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