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Conclusion

By making Sax in particular struggle with the threat of Mars being terraformed into a tropical mining colony for Earth, Robinson does address the problematic history of human intervention into the production of (first) nature. Unlike Earth, Mars does not bear the full weight of this history. Mars represents the possibility of a different direction, one that is not marked by an attempt to subsume the rest of nature into the human fold. Sax and Ann, in their own ways, give up the idea that humans can dominate nature. Sax abandons the notion that humans can fully master the evolution of life or transformation of an environment, while Ann comes to accept that human intervention does not necessarily extinguish nature. By tracing the transformation of Sax and Ann, and speculating on the process of terraforming, the Mars trilogy opens a window on third nature, one that makes it possible to perceive the possibilities of a truly integrated relationship between human and non-human nature. Robinson creates a human culture where the central questions are: what does it mean to live in a place, and how can the human species use its abilities to enhance the life of that place? That these questions are difficult to answer is not in itself significant. What matters is that the questions are asked and the answers are meaningful and consequential. The struggle toward this type of social-cultural context is what Robinson elaborates in *Red, Green* and *Blue Mars*. It is also the struggle, and fundamental basis, for third nature.

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Contents

experience. She and Sax sail on one of the inland seas, taking in the emerging Mars, one made blue as well as green and red by an earlier deal between them that resulted in Sax removing the final part of the solar heating arrangement.

As the final chapter begins, the reader is introduced to 'A ne\ Ann. A fully Martian Ann at last' (Robinson 1997: 754). In a public way, this transformation is represented by Ann speaking in favor of allowing legal Terran immigration to Mars in order to avert a war that would destroy the still-developing, life-sustaining Mars. More privately, the closing paragraphs bring both Ann and, symbolically, humanity into a state of free nature with Mars.

Ann, Sax and a host of family and friends make a home out of the original settlement. On the beach, after bringing ice cream back for everyone and experiencing a brief, terrifying moment where she thinks she is experiencing quick decline, Ann is confronted by a child looking at the water, sky and passing pelicans. 'Innit pretty? Innit pretty? Innit pretty?' Eventually Ann answers 'Yes', but her reflection continues internally.

> Oh yes, very pretty! She admitted it and was allowed to live. Beat on, heart. And why not admit it. Nowhere on this world were people killing each other, nowhere were they desperate for shelter or food, nowhere were they scared for their kids. There was that to be said. The sand squeaked underfoot as she toed it. She looked more closely: dark grains of basalt, mixed with minute seashell fragments, and a variety of colorful pebbles, some of them no doubt brecciated fragments of the Hellas impact itself. (Robinson 1997: 761)

Mars is forever changed, but the Mars they inherited is still there, beneath her feet, mixed with what humans have, if not fully created, then set in motion. In the end, for both Sax and Ann, the desire to inhabit this particular place leads them to overcome their original states of alienation.

> *its surface naked and survive. It's amazing! It makes us part of an ecology. It deserves to be rethought, this process. You should go out to consider it, to study the process of areoformation.*
>
> [Ann:] *That's just a word. We took this planet and plowed it under. It's melting under our feet.*
>
> [Michel:] *Melting in native water. Not imported from Saturn or the like, it's been therefrom the beginning…*
>
> (Robinson 1997: 252, italics in the original)

Ann resists Michel's arguments but this exchange does send her out on a trip around the planet, both in and out of human company. It is also evident that Michel has raised difficult questions about terraforming. The discussion about water is important because it questions Ann's assumptions about what is and what is not 'natural'. Her trip prompts further reflection on these lines.

The backdrop to Ann's rapprochement with Sax and with humanity on Mars is the changed political situation on Mars. Early in *Blue Mars,* a new, independent Martian government is established. This government exhibits many Bookchinist characteristics, including a confederal structure, common ownership of land, and a system of human and environmental ethics that is reflected in various institutions and limitations on strictly private enterprise (Robinson 1997: 153— 8). This new government taps into Ann's hopes about building a better life, a better form of humanity on Mars.

The trilogy winds down with Sax devising a memory treatment to address one of the symptoms of the extreme old age made possible by the longevity treatments and Martian gravity. Many of the remaining First Hundred begin to die off, suffering a 'quick decline', with memory loss being one of the harbingers. Sax gathers together those who are left at their original settlement to undergo the treatment. Ann uses this as an opportunity to focus on Mars as it was before the terraforming, and emerges fully transformed from the

While science fiction most often conjures up images of technology and the so-called 'hard sciences', writers in the genre also address human social relations. One of the exemplars of this tradition is Kim Stanley Robinson. In his award-winning Mars trilogy, *Red,Green* and *Blue Mars,* Robinson uses the idea of transforming Mars into a habitable planet to explore the ethics and limits of the human ability to (re)produce nature. Philosophically and theoretically, Robinson's writing has particular relevance to the work of social ecologist Murray Bookchin.[1] The Mars trilogy provides a fruitful exploration of what Bookchin refers to as third or free nature, a synthesis of first (bio-physical) nature and second (human social) nature wherein humans 'co-operate' with first nature and directly participate in the evolution of life.

This chapter is divided into two main sections. The first sketches out Bookchin's 'dialectical naturalism' and considers a particular critique of the idea of third nature. The second section introduces Robinson's Mars trilogy and interprets those works as an exploration of free nature.

Bookchin's Philosophy of Nature

Intellectually, Bookchin falls in the Western tradition of dialectical thought represented by Aristotle, Hegel, Marx and the Frankfurt School. Bookchin's relationship with Marx is largely oppositional; he rejects the centrality of class struggle, focusing on a more general struggle with hierarchy/domination (for example, 1971 and 1989;Purchase 1994: 57–70). At the same time, Bookchin clearly

[1] The connection between Robinson and Bookchin is more than incidental. The Mars trilogy is peppered with explicit references to Bookchin's work. *Pacific Edge* (1990), one of the Three Californias books, is a slice-of-life story about a Bookchinesque municipality. Robinson's first post-Mars-trilogy book, *Antarctica* (1999), tackles social ecology themes such as what it means to inhabit a place, distinctions between radical, reformist and (arguably) misanthropic ecology, and the promises of collective self-management.

draws insights from Marx's analysis of capitalism (Kovel 1998:37–48). His early work on cities, *The Limits of the City,* directly builds on Marx's observations regarding uneven development between city and country (1974: vi-xi, 4, 101). Similarly, Bookchin draws on Adorno and Horkheimer's critique of instrumental reason in developing his own critique of domination, both human *on* human and human on nature, but criticizes their work for reducing nature to a passive, crude object transcended by the human species (1982: 270–80). Bookchin develops his notion of 'eduction', or reasoning that draws out the developmental potential of things in nature, and nature itself, from Aristotle and Hegel, though he argues that their dialectics require a sense of natural evolution to be truly ecological, that is, a sense of nature as a 'flowing continuum' rather than a static ladder of Being' (1995: 124, also 119–33; Purchase 1994: 68–70). Perhaps the critical distinction between Bookchin and his influences, especially Marx and the Frankfurt School, is that Bookchin reasons that the domination of nature by the human species was preceded by, and emerged from, the domination of human by human (hierarchy), rather than in the reverse (Merchant 1994: 8–9; Bookchin 1990: 154)

Politically, Bookchin's closest predecessor, both historically and substantively, is the anarchist Peter Kropotkin. Kropotkin contributes several historical and theoretical themes to Bookchin's work, notably the rooting of cooperation (mutual aid) and ethics in nature, historical connections between cities and human freedom and the image of a free world made from regional confederations of cities and towns (which, in turn, are organized as grassroots confederations) (Macauley 1998; Purchase 1994: 57–70; also Bookchin 1990: 154 and 1992b: 152–3). It is out of this synthesis of an 'ecologized' dialectical tradition and anarchist communism that Bookchin develops his philosophy of nature.

As noted in the introduction, Bookchin conceives of nature as developing through three forms. Initially, there is first or bio-physical nature. In this form, nature strives for self-awareness, providing

> *We are making a better way to live.* (Robinson 1997: 2, italics in original)

While still not persuaded that the terraforming is anything but a small-minded endeavour, it is significant that Ann would be talking not about restricting human action on Mars, but about the possibilities of making a better human life on the planet. The break with Earth distances Mars from what are, in Ann's estimation, the most selfish and grasping aspects of second nature.

There are several places in *Blue Mars* where Ann engages in close observation of human life on Mars. While these observations are not wholly positive, her curiosity about how humans are living on the planet is a crack in her shield against the idea of truly inhabiting, as opposed to simply studying, this new place. She finds herself concluding at one point 'People's faces, staring in concert; this ran the world' (Robinson 1997: 16). This thought indicates a recognition that humans have added value to Mars rather than simply taking value from it.

There is one particularly important moment in the book where Ann starts to make a turn away from her alienated relationship with humanity on Mars and the Martian environment. This moment is a conversation with Michel Duval, another of the First Hundred, who, at Sax's urging, has engaged her in conversation about possible suicidal tendencies. Perhaps because he has more distance from Ann, or perhaps because of his psychological training, Michel is able to talk to Ann in ways that Sax is not.

> [Michel:] *There is so much of Red Mars that remains. You should go out and look! Go out and empty your mind and just see what is out there. Go out at low altitude and walk free in the air, a simple dust mask only. It would be good for you, good at the physiological level. Also it would be reaping a benefit of the terraforming. To experience the freedom it gives us —that we can walk on*

ing the human species with the Martian environment, while Sax has undergone a significant transformation in consciousness, ethical awareness and judgement. No longer overwhelmingly enamoured of human capabilities, and freed from the belief that human second nature can freely bend other forms of nature to its will, Sax has moved to an understanding of the ethical and practical limits to human interventions into the production of nature. Most significantly, he has come to appreciate the value and role of the native Martian landscape in guiding the evolution of life on the planet.

Mars itself undergoes yet another revolution in *Green Mars,* only this time Mars breaks free from Earth. In *Blue Mars,* the independence movement must now address issues of Martian governance and what sort of relationship to establish with Earth. Both of these decisions shape the context for addressing Sax's and, especially, Ann's personal transformations and their respective relationships with the planet that has become their home. Indeed, in *Blue Mars,* Sax and Ann emerge as the trilogy's principal characters. Sax's focus in *Blue Mars* is on deepening his understanding of Ann's connection to Red Mars and finding an entry to persuade her that life on Mars is not a blight, but a beautiful and right thing.

It is clear in *Blue Mars* that Martian independence from Earth plays an important role in bringing Ann to an accommodation with the human presence on, and even transformation of, Mars. Most sections of the trilogy are introduced by the thoughts and descriptions of an unnamed observer. *Blue Mars* begins with one of these passages. The observer is describing a scene where Ann Clayborne is smiling, addressing a group of Reds. The heart of her message is recorded by the observer:

> *We came from Earth to Mars, and in that passage there was a certain purification. Things were easier to see, there was a freedom of action that we had not had before. A chance to express the best part of ourselves. So we acted.*

the basis for the emergence of the human species. With the human species comes second or social nature. In second nature, the development of life, as represented by the human species, and the interaction between life and its environments become self-conscious and self-directed, rather than instinctive and guided primarily by deep evolutionary memory. However, because human and nonhuman nature do not actually break from one another, but remain intertwined, it is necessary to bring social nature into conscious synthesis with first nature. Bookchin refers to this synthesis as third or 'free' nature. Here, human-defined second nature is integrated with first nature so that the human species actively participates in the differentiation and evolution of life.

Third nature is *'free* nature —that is, an ethical humanly scaled community that establishes a creative interaction with its natural environment' (Bookchin 1992b: xvii, italics in original). This integration of first and second nature heals the (illusory) split between 'the social' and 'the natural' that occurs in the elaboration of second nature. According to Bookchin:

> Both are in a very real sense *natural,* and their naturalness finds its evolutionary realization in those remarkable primates we call human beings who, consciously responding to a sense of obligation to the ecological integrity of the planet, bring their rational, communicative, richly social, imaginative, and aesthetic capacities to the service of the nonhuman world as well as the human. (1992b: xvii—xviii, italics in original)

Thus, in reaching third nature, humans realize their potential as 'nature rendered self-conscious' (Bookchin 1982: 315—16). In second nature, humans emerge as a species able to think and act in and for itself. This achievement lays the ground for the human species to think and act in and for the world, or nature, at large (see 1982, 1986, 1992b and 1995).

Bookchin's account of third nature is heavily weighted towards describing human social relations and structures. His description of how first and second nature can, and will, be integrated is much less developed. This leaves his work open to the criticism that third nature is, at best, recklessly vague, and, at worst, plays to human hubris regarding non-human nature. Eckersley (1992: 137) argues that 'Bookchin's vision of stewardship does not qualify how and to what extent our responsibility is to be discharged'. She proceeds to provide a list of potentially disastrous human interventions into the evolution of life (wholesale introductions of new species, the 'greening' of deserts, etc.), not to mention the cumulative history of past and present human interventions. Furthermore, while acknowledging that Bookchin's social ecology advances beyond a simple anthropocentrism, one that justifies the use of non-human nature for strictly human ends, she questions the extent to which Bookchin's world-view remains focused on humanity to the potential detriment of other species. She asks whether 'we now know enough about these processes [of natural evolution] to *foster and accelerate* them' (Eckersley 1992: 142, italics in original). In other words, there seem to be grave risks in moving humans to actively, and as a matter of course, intervene in the evolution of non-human nature, especially with the intent of promoting certain characteristics.

It can be argued, as Bookchin has (1992a), that critics such as Eckersley are uncritical sceptics and unimaginative about the reconciliation of first and second nature and the transcendence of inherited histories. Nonetheless, Bookchin's discussions of third nature tend to be either highly abstract, advocating the use of 'eductive' reasoning to understand first nature (1995), or superficial and technical (see 1971, 1980 and 1982). Significantly, the technical innovations that Bookchin writes about, renewable energy technologies and bioregional urban design and architecture for example, do not directly address what human *participation* in the evolution of nature might be like. Such innovations may adapt second nature to

> For them every collapse was a sign that things were going wrong rather than right. In the past, Sax would have shrugged them off; mass wasting exposed frozen soil to the sun, warming it and revealing potential nitrate sources and the like. Now he was not so sure … The collapse of landforms were considered no more than an opportunity, not only for terraforming which seemed to be considered the exclusive business of the transnats, but for mining. (Robinson 1995: 217–18)

Sax comes to believe that the terraforming effort has become something other than a noble attempt to bring life to Mars, but a means for turning the planet into a raw materials colony for Earth.

Eventually, Sax's identity is uncovered by the Earth-based authorities on Mars. He is tortured and brain-damaged. After he is rescued by the underground, his mind and body are reconstructed, albeit not perfectly. He decides to take down one part of the solar mirror-lens arrangement to slow down the heating of the surface. His success leads to another exchange with Ann, a person that he has come to think about a lot. Until the end, this exchange is much like the others between the two of them. Sax defends the terraforming in principle. He reasserts a plan for a 'human-viable surface to a certain elevation' and a slower approach to transforming the surface and the atmosphere. Ann is curious about his decision to knock out the one portion of the heating device, but is still bitter about the terraforming and Sax's commitment. But this time Sax ends with this admission: 'I was wrong… We should have waited. A few decades of study of the primal state. It would have told us how to proceed. I didn't think things would change so fast.' Ann, nonplussed, simply responds: 'But now it's too late' (Robinson 1995: 415). This exchange, Ann in bitter alienation from Sax and what she believes he represents, and Sax expressing remorse and a desire to reach out to and understand Ann, sets the scene for *Blue Mars*. Ann continues to be uncomfortable with the idea of integrat-

sifying and speeding up the warming of the planet, but making it uninhabitable for animal life. 'As if warming the planet was the only goal! But warming was not the goal. Animals on the surface was the goal' (Robinson 1995: ISO). His commitment to life, articulated in *Red Mars,* sharpens here. It is not only human life, but life in general that matters to Sax. However, many of the more drastic, and apparently ascendant, terraforming plans are centred on a heavy industrial model that would heat the surface and thicken the atmosphere as fast as possible. This would make the planet eminently exploitable, unveiling mineral ores and enabling activities on the surface otherwise inhibited by cold, but it would not support the introduction of life in general, most likely only technologically or genetically enhanced humans.

This distinction in terraforming goals illustrates the practical and ethical differences between remaining in second nature and transitioning to third nature. In the former, human knowledge and technology are employed to bend the Martian environment to serve human needs. In the latter, those same capabilities are employed for the benefit of other species and, at some level, preserving the integrity of the Martian landscape.

These differences also come into relief at an annual conference on terraforming. The push to heat and thaw the surface in all haste disturbs Sax. He begins to doubt even his own initial plans for making a fast jump to a human habitable surface. The extent to which terraforming now seemed to be driven by developing an environment exclusively convenient to human purposes and tastes, and by the pursuit of profit, shakes Sax's faith in the political disinterest of science. He becomes even more aware of the drastic changes to the Martian landscape resulting from the terraforming. Significantly, he thinks:

> All of *this* was as Ann had predicted to him, long ago. No doubt she was noting reports of all these changes with disgust, she and all the rest of the Reds.

first, but, if anything, they are tools for minimizing, rather than heightening, the impact of human development on non-human nature. If Eckersley is too chained to the past or the world as it is, Bookchin appears too confident in his own sense of the *process* of nature (see also Kovel 1998). At the very least, the questions raised by Eckersley suggest a need for a more satisfactory accounting of how third nature is to emerge and what it would mean for humans to overcome their one-sided relationship with first nature.

There *is* also the issue of the relative specificity with which Bookchin addresses the two dimensions of third nature. While Bookchin's consideration of first nature in third nature tends to take the form of general principles with a smattering of specifics, his account of second nature and its revolutionary transformation is rife with detail (see 1980, 1990 and 1992b; Biehl 1998). Furthermore, in the 1990s, Bookchin turned much of his attention to beating back perceived misanthropic tendencies in the ecology movement, that is, tendencies which blame humans *per se* for ecological and environmental degradation, rather than social structures (see, for example, 1994). Bookchin's extensive effort to articulate the specific conditions for human freedom, while leaving the actual integration of first and second nature to the unfolding of 'the Dialectic', underscores the criticism that third nature is a hazy, if noble, idea fraught with potential difficulties if not disasters.

It is in addressing the criticism that his work fails to sufficiently elaborate on the content of third nature that Kim Stanley Robinson's Mars trilogy offers the greatest insight for Bookchin's social ecology.

Robinson and Bookchin

Operating in the realm of social theory and philosophy, it is difficult for Bookchin to get around the largely negative history of

human intervention into bio-physical nature and its environments, especially, though not exclusively, since the onset of the Industrial Revolution. Noting a lack of imagination in getting past that history on the part of critics such as Eckersley is not sufficient. By working in fiction, Robinson is able to take the question of third nature into new contexts for examination. Through the literal removal of humans from the bonds of the Earth, he presents the human species with a new beginning in its relationship with first nature.

In Mars, Robinson presents an environment that appears to require outside intervention for life to evolve (or, perhaps, to re-evolve). Mars possesses key elements necessary for life as humans know it, an atmosphere, albeit a thin one, and water, though locked up in ice and permafrost, but there are no signs of actual life or evolution. This puts a new perspective on possible human participation in the production of nature. The biological aspect of bio-physical first nature requires action out of second nature to exist, while second nature is extremely limited without completing first nature. Not surprisingly, in the trilogy, the issue of *whether* to use human technology and knowledge to release Mars's latent capacity for life, 'terraforming', quickly gives way to the question of *how* to transform the planet. The question thus becomes: will humans terraform Mars in order to reproduce an environment convenient to human activity, or will they choose to terraform in a manner that co-operates with the Martian environment and gives rise to a unique order of life? In more Bookchinist terms, will humans annex Mars to second nature, or will the species foster a third nature that transcends the legacy of human social nature on Earth?

The idea that moving humanity to another planet would be an opportunity to develop new social and physical environments is one that Robinson explicitly introduces in *Red Mars* through the character of Arkady Bogdanov, a space navigator and one of the First Hundred colonists.

efforts in themselves, and the sameness of the colonists' tent cities, imply that areoforming is a bankrupt idea, one that serves to mask the destructive selfishness of human activity on Mars (see 1995: 365–6). This rejection of even the idea behind areoforming represents a rejection of third nature. For Ann, humans should withdraw from Mars as much as possible without leaving entirely. That is the only way to insulate the planet from a selfish and grasping human social nature.

Where Sax is concerned, *Green Mars* is a significant time of transition. Not satisfied with hiding out, he acquires a new identity and a new face. Fundamentally a generalist, he transforms himself into a biologist and goes to work for a Biotech company designing plants for Mars's emerging environments. Whereas, before, Sax was the master planner, working with macro-level design and analysis of terraforming, in his new identity, Stephen Lindholm, he is involved in the ground-level work of terraforming. His observations as a field-worker have a profound affect on his awareness of the Martian influence on human endeavours to change the planet and on the ability of life to develop in unintended or unexpected ways.

In a key passage, Sax takes off on his own to explore a proto-alpine meadow. Dotted with trees and grass, he observes that the trees, mainly white spruce and lodgepole pine, are gnarled and stunted, and this is despite extensive engineering for growth, hardiness and adaptation to Martian soil composition. Taking delight in these trees and the few insects that had been released, he wishes for 'Some moles and voles, and marmots and minxes and foxes' (Robinson 1995: ISO). His reasons are practical: many animals provide useful services to plant life and vice versa, but he also begins to realize that not everyone is engaged in the terraforming for the same reasons. He is especially disturbed by an arrangement of solar mirrors and lenses being used to heat the surface and increase the melt of ice and permafrost. This action not only destabilizes the surface, but increases the amount of CO_2 in the atmosphere, inten-

sentially a Martian Earth First! who practise ecotage against terraforming. Coyote, an unofficial member of the First Hundred who stowed away on the original transport, persuades her to meet with the Reds. Initially, Ann is sceptical about the efficacy of ecotage and is reluctant to involve herself in a political movement removed from scientific debate. Her turning point comes during a trek to the Red base of operations. Witnessing multiple signs of life and environmental transformation, she decides that she should meet with the Reds and arrives a hero. Ann's turn to the Reds is significant because it is a self-admission that her objections to terraforming are not grounded solely in science — too much has already changed for her arguments for further study of the native landscape to hold. Joining the Reds is an emotional and political decision.

> A bunch of radicals. Not really her type, Ann thought, feeling a residual sensation that her objection to terraforming was a rational scientific thing. Or at least a defensible ethical or aesthetic position. But then the anger burned through her again in a flash… Who was she to judge the ethics of the Reds? At least they expressed their anger, they had lashed out. (Robinson 1995: 129–30)

After witnessing the land 'melting' away from the unlocked water, she decides to lash out as well. At this moment, Ann does not perceive humans to be capable of transcending second nature, and, as a result, rejects the idea of a third nature on Mars.

Contributing to Ann's decision to join the Reds is her scepticism about human nature. She expresses the conviction that humans on Mars, whether they were born there or not, are 'human and human we remain'. A significant number of humans on Mars take as an article of faith that as humans terraform Mars, Mars 'areoforms' human nature. Areoforming is defined as a certain sense or spirit of place and life that is uniquely Martian. To Ann, the terraforming

> We have come to Mars for good. We are going to make not only our homes and our food, but also our water and the very air we breathe — all on a planet that has none of these things… This is an extraordinary ability, think of it! And yet some of us here can accept transforming the entire physical reality of this planet, without doing a single thing to change ourselves or the way we live… And so I say that among the many things we transform on Mars, ourselves and our social reality should be among them. (Robinson 1993: 89)

This statement captures the full sense of third nature: the freeing of humanity from a narrow second nature that fosters domination in both human and non-human nature, and a shift to a (more) fully self-conscious relationship to our own nature, the nature of others and the physical environments that tie all forms of nature together.

Through two devices, a longevity treatment and the benefits of living in a lower gravity environment, Robinson tracks the progress of the human project on Mars (and back on Earth) through a group of characters that live through large sections of the trilogy's 200-year-plus timespan. Two of the trilogy's central characters are physicist Saxifrage Russell (Sax) and geologist Ann Clayborne. The development of these two characters, more than others, captures the transition of Terran-Martian culture from a replicant of Earthly second nature to a unique third nature.

In *Red Mars,* both Sax and Ann are, in different ways, alienated from the Martian environment. Sax's alienation is more straightforward than Ann's. Sax is the archetypal master planner: an ivory tower scientist and technocrat. To Sax, Mars could be any place. What matters is that humanity, with its technology, its knowledge and the superiority of sentience and self-consciousness, has arrived. In one of the early exchanges about the human role on Mars, still on the transport from Earth, two proclamations sum up Sax's early relationship with the planet: 'We'll change it just

by landing' and 'It's dead' (Robinson 1993: 40). Once humans arrive on Mars, the process of change will be underway, it will be irreversible and it will be for the better. Sax elaborates on these sentiments in a debate with Ann.

> Without the human presence it [Mars] is just a random collection of atoms, no different than any other random speck of matter in the universe. It's we who understand it, and we who give it meaning… Not the basalt and the oxides… If there are lakes, or forests, or glaciers, how does that diminish Mars's beauty? I don't think it does. I think it only enhances it. It adds life, the most beautiful system of all … W e can transform Mars and build it like you would build a cathedral, as a monument to humanity and the universe both. (Robinson 1993: 177–8)

While Sax's sentiments are suggestive of third nature, the image of a cathedral or monument implies human control over the production of nature. For Sax, Mars in itself is irrelevant. What matters is the human ability to turn Mars into a habitable place.

In contrast with Sax, Ann is deeply attached to Mars, or, at least, to what it represents: billions of years of geologic history (apparently) uninterrupted by the chaos and disturbances of life. This attachment puts her in conflict. She wants to see Mars up close. She wants to touch and study it, but to do all that she must alter what makes Mars special to her. On a larger scale, the forces that make it possible for her to be on Mars will not allow the planet to remain as it was found. She lets these contradictions out in a conversation regarding how much time to spend on the surface in the face of radiation allowed in by the planet's thin atmosphere. Ann exclaims:

> I look at this land and, and I *love* it. I want to be out on it travelling over it always, to study it, to live on it and learn it. But when I do that I change it —I destroy what it is, what I love in it… I'd rather die. Let the planet be, leave it wilderness and let radiation do what it will. (Robinson 1993: 157, italics in original)

For Ann, there is an essential Mars to which humans, herself included, are anathema. To ease this contradiction, she seeks ways to minimize the human impact on Mars even as she realizes that the planet will never be the same now that humans have arrived, no matter how circumscribed their presence.

The early life of the First Hundred is observed by people back on Earth: a live-action soap opera and political thriller. Sax and Ann come to represent different sides of the terraforming debate, with the physicist representing a majority faction on both Mars and Earth that believes in terraforming Mars 'by all means possible, as fast as they could', and the geologist standing in for a smaller but committed 'hands-off attitude' (Robinson 1993: 169). In the face of overwhelming odds, Ann commits herself to slowing terraforming down, making the case that humans need to study and understand Mars before changing it.

Ann loses this argument and the human population on Mars grows. Many of the new arrivals possess distinct cultural and political identities and have different goals in mind for Mars: cultural autonomy for individual groups versus universal standards of rights and responsibilities, close ties to Earth versus Martian independence. In the end, the United Nations and corporate authorities that funded the Martian expedition assert their authority over the planet. Many of the First Hundred, identified with movements in favour of an independent Mars, are forced underground, including Sax and Ann. This change in circumstance sets the stage for *Green Mars.*

In *Green Mars,* Ann heads into the Martian outback. It is revealed to her that she has, reluctantly and, it seems, unknowingly, become a focal point and hero to a faction on Mars called the 'Reds', es-