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Book Review: Chris Pak, *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction* (Liverpool UP, 2016), 243 pp.



Terraforming, a word coined by science fiction author Jack Williamson in the 1940s to describe the transformation of alien planets to make them habitable for human beings, is among the grandest of all of science fiction's tropes: corps of engineers and explorers greening the red deserts of Mars, clearing the poisoned skies of Venus, and conjuring bountiful new worlds from hostile landscapes through sheer will and technological savvy. Depending on the degree of self-reflexivity they bring to the trope, terraforming stories act either as expressions or as critical explorations of the basic human desire to make a home by adapting the world around us to suit ourselves and our needs. And as Chris Pak demonstrates in *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction*, the futuristic alien landscapes of terraforming stories thus provide opportunities for examining contemporary attitudes towards a variety of "ecological, environmental, and geopolitical issues and concerns" (1) here on our own planet. Pak argues that because "terraforming [can] be used to magnify issues connected to technologically based environmental projects and to examine the moral shortcomings that give rise to ecopolitical conflict," this literature is particularly suited to "contemporary environmental philosophical speculation" (9), offering casual readers, ecocritical scholars, and environmental philosophers alike the opportunity to "reframe[e] orientations and perspectives towards the habitation of Earth" (2).

Pak approaches science fiction as a kind of arena for staging thought experiments, arguing that "narratives of terraforming offer imaginative spaces for reflection on fundamental issues regarding our place in relation to Earth" (8). By displacing human figures into unfamiliar landscapes and ecologies, terraforming stories set on other planets provide readers with a defamiliarized perspective on human relationships to more familiar landscapes, "encod[ing] a conception of humanity as fundamentally alien to Earth" (2). Thinking about humanity as alien to the environments we inhabit casts familiar activities in a new light; Pak argues, for example, that the clearing of fields can be thought of as indicative "of an impulse to shape the planet for human-centred purposes" (2), and that weeding a backyard garden plot and artificially creating the conditions required for plant life on a barren alien moon can thus be understood as two intimately connected manifestations of the same kind of world-making activity. In this way, Pak suggests, terraforming narratives "allow us to examine and evaluate our historical relationship to our home planet and to postulate alternatives to current practices" (7).

Central to Pak's analyses of individual terraforming texts is the idea that such stories all deal in one way or another with a conflict between two opposed desires: to understand and control the nonhuman world in order to promote conditions favourable to human life, and to acknowledge the autonomous existence and inherent value of nonhuman beings. Pak refers to these desires using terminology borrowed from the environmental philosopher Simon Hailwood: "landscaping" and "the recognition of nature's otherness." Landscaping refers here to the "physical and intellectual processes" through which human beings shape and interpret environments (11); nature's otherness refers to the idea that natural systems "possess an aspect that cannot be reduced to the social sphere" (20) and which exists outside of the human systems through which we attempt to landscape, comprehend, and control it. The five chapters of *Terraforming* outline a history of 20th-century terraforming stories organized around changes in the ways authors have dealt with the tension between the desire to landscape nature and the imperative to recognize nature's otherness.

Chapter 1, "Landscaping Nature's Otherness in Pre-1960s Terraforming and Proto-Gaian Stories," focuses on interwar science fiction that explores themes of planetary holism, "living worlds," and environmental transformation. Pak identifies two opposed reactions to nature's otherness in these texts: the first, exemplified by H.G. Wells's *The Shape of Things to Come*, is motivated by "Promethean fear" of the "asymmetry between humankind and nature" (54) and expresses a desire to overcome nature's otherness by using technology to control the environment; the second, exemplified by the novels of Olaf Stapledon, "challenges the colonial anthropomorphism of the war on nature theme . . . by offering vectors for recognising nature's otherness" (55). Chapter 2, "The American Pastoral and the Conquest of Space," examines mid-century novels of interplanetary migration and settlement that draw on or respond to the "convergence of the colonial and the utopian" (59) in American discourses of the frontier. The three sections of the chapter focus on texts that celebrate the opportunity to extend the cultural adventure of American manifest destiny through planetary colonization, texts that offer dystopian visions of political fragmentation and failed colonies, and texts that use the trope of encounters with indigenous alien civilizations to raise moral questions about terraforming and colonial politics.

The third chapter, "Ecology and Environmental Awareness in 1960s-1970s Terraforming Stories," reflects on the influence of countercultural political movements on the terraforming tradition. The first half of the chapter argues that the "living world" trope was detached from fear of nature's threatening autonomy and transformed into a vehicle for environmentalist and anti-colonial discourse in the 60s and 70s; the second half consists of extended readings of major novels by Robert Heinlein, Frank Herbert, Ursula K. Le Guin, and Ernest Callenbach, which Pak argues shaped and were shaped by the mixture of technophilia and mysticism that characterized the early environmental movement. Chapter 4, "Edging Towards an Eco-Cosmopolitan Vision," examines texts from the 1980s that explore tensions between visions of the environmental future articulated at local and global scales. The chapter draws on Ursula Heise's argument that contemporary environmental crises demand the development of models of

“environmental world citizenship” that integrate relationships to local ecologies with global perspectives (*Sense of Place*, 10). Pak’s fifth chapter, “Kim Stanley Robinson’s *Mars* Trilogy,” reads Robinson’s terraforming epic as a “megatextual” re-writing of the entire terraforming tradition. Pak draws on literary critic Jed Rasula’s image of the canon as a “compost library” of texts that “collapse into one another . . . by constant recycling” (17) to argue that Robinson’s terraforming stories thematically and formally model “an ecological approach to habitation” (203) based on adapting traditions and technologies to new circumstances. Finally, in a short conclusion, Pak turns to terraforming stories published in the first decades of the 21st century “to demonstrate how the motif continues to offer resources for ecological and socio-political thought” (205).

There are points in *Terraforming* where Pak’s attempt to periodize a small corpus of texts written over a relatively short period of time leads to a multiplication of categories that is more confusing than enlightening. In the third chapter, for example, he divides the “terraforming texts of the 1960s-1970s” into three categories: “those narratives that present a clear continuity with the stories of the 1950s,” “the proto-Gaian narratives distinctive to [the 60s and 70s],” and stories that “engage in dialogue with the earlier 1950s tradition of terraforming stories and look forward to those of the 1980s-1990s” (101); there is also a fourth category that focuses on adapting human settlers to alien landscapes. The utility of such a minutely subdivided taxonomy is not immediately clear, and the chronological schema Pak uses to organize his chapters seems to be causing more trouble than it is worth; a more straightforward classification based on the dominant ideological orientation or thematic preoccupation of different terraforming texts seems as if it would be simpler and more useful. There are other points in *Terraforming* where the line of Pak’s large-scale arguments gets lost in the details of individual readings, as for example in the long discussions of Herbert’s *Dune* and Robinson’s *Mars* books in the third and fifth chapters. Overall, however, *Terraforming* offers a usefully detailed history and theoretically sophisticated analysis of an important tradition in contemporary environmental thought. The book will be useful to all scholars of science fiction and, more broadly, to anyone interested in the various ways that literary works shape and are shaped by environmentalism and environmental politics.

Works Cited

- Hailwood, Simon. *How to be a Green Liberal: Nature, Value, and Liberal Philosophy*. Acumen, 2004.
- Heise, Usula. *Sense of Place and Sense of Planet: The Environmental Imagination of the Global*. Oxford UP, 2008.
- Rasula, Jed. *This Compost: Ecological Imperatives in American Poetry*. U of Georgia P, 2002.