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A Book Review: A Pathbreaking Study of Terraforming in Science Fiction

Benjamin R. DeVries

Pak, Chris. *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction*. Liverpool University Press, 2016. ISBN: 978-1-78138-284-4

In her introduction to *The Left Hand of Darkness*, Ursula K. Le Guin is at pains to counter views of science fiction (sf) that figure the genre as "[s]trictly extrapolative" (xxiii). While granting the importance of extrapolation as a creative tool, she maintains that many celebrated sf texts do not primarily aim at prognostication but instead read like a literary thought experiment, a mode of inquiry directed not toward some probable future but at the present. In his 2016 monograph on terraforming, Chris Pak echoes Le Guin's approach to the genre. Framing sf as a "literature of epistemology" (6), Pak's *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction* takes up its futuristic subject—the transformation of alien planets—and uses it to think through questions that are as current and Earth-y as they get: How does sf reflect on and challenge our relation to nature? How did (and does) sf participate in scientific and popular discourses about the environment?

Published by Liverpool University Press as part of its Science Fiction Texts and Studies series, *Terraforming* charts the development of ecological thought in twentieth-century sf. As such, the book proceeds chronologically. Pak approaches a battery of works from across the century—everything from Sir Arthur Conan Doyle's "When the World Screamed," to Frederick Turner's *Genesis*—as a series of case studies whose depictions of Earth and, more often, alien planets respond to and even anticipate shifts in the ideological tectonics of environmentalism. In particular, Pak focuses on how this succession of texts treats terraforming. Less interested in terraforming's technological what's and how's than in its qualities as a literary trope, Pak uses terraforming to animate a robust and far-ranging analysis that touches upon topics as diverse as ethics and genre, capitalism and aesthetics, deep-space colonialism and narrative space-time. This scholarly expansiveness, however, generally returns Pak to his principal ecological investments:instrumentalism and nature's otherness.

Chapter one of *Terraforming* explores these investments directly, in its discussion of pre-1950s sf. Focusing on works from the interwar period, Pak considers examples of early terraforming stories like H. G. Wells's *The Shape of Things to Come* and Edmond Hamilton's "The Earth-Brain," and argues that terraforming in these stories often frames the natural world as a space to be "landscaped" to meet human needs. Counterintuitively, however, this impulse to landscape, or master, also acknowledges nature as a site of dangerous excess, such that it requires mastering in the first place. As Pak puts it: "The endeavour to govern nature […] is symptomatic of humanity's fundamental dependence on a hostile environment" (23). For Pak, then, terraforming stories of the

interwar period dramatize the kernel of nature's otherness that humankind cannot overcome. Like a return of the repressed, that otherness irrupts into these stories in the form of the sublime and through what Pak calls the "proto-Gaian living world motif" (38). Anticipating John Lovelock's 1965 Gaia hypothesis, this motif figures prominently in Pak's book and frames planets as complex, self-regulating systems produced through the interaction of organic and inorganic matter.

Later chapters build on the ecological concerns of chapter one and weave them into a larger account of sf's history. Chapter two, for instance, traces the development of instrumentalism in sf from the interwar period into the 1950s. Here, Pak situates writers like Ray Bradbury and Arthur C. Clarke within the American pastoral tradition in order to illustrate how, by the end of the 50s, "a distinct engagement with the politics of imperialism, nationalism and utopia" had soured the technocratic optimism that marked terraforming tales of the 30s and 40s (89). This more critical encounter with the terraforming motif characterizes the direction that sf takes after the 1950s, according to Pak. Indeed, as he moves from the mid- to the late twentieth century and from there (briefly) to the twenty-first century, Pak observes the ways in which sf increasingly figures the terraforming motif in relation to ethics, politics, and human/alien otherness.

Yet while these later discussions of Kim Stanley Robinson's *Mars* trilogy or James Cameron's *Avatar* will prove interesting to some readers, it is Pak's examination of terraforming in the 1960s, 70s, and 80s that merits the most attention. In particular, it is here that ecologically minded sf begins to take explicit shape.A development catalyzed by American counterculture, sf writers during these three decades pushed against the genre's earlier instrumental tendencies in order to produce a "distinctly 'green discourse" (137). In his discussion of that discourse's beginnings in the 60s and 70s, Pak focuses on the resurgent popularity of the proto-Gaian living world motif and on the terraforming stories of authors like Le Guin and Frank Herbert. This discourse, in turn, solidifies in the 1980s as environmental theories (like Lovelock's Gaia hypothesis) become a feature of the cultural mainstream.

Framed in this manner, *Terraforming*—especially its chapters on sf of the 1960s through 80s—should prove useful to scholars of speculative fiction, particularly those interested in plotting sf's evolution. Akin to the work of Ursula K. Heise and Eric C. Otto in that it too recognizes sf as a site for environmental inquiry, Pak's diachronic approach to the terraforming trope expands the conversation by clarifying the genre's changing relationship with ecological thought. For this reason, I also suspect that the book would be valuable to ecocritics curious about how ecological theories are anticipated, adopted, and shaped in popular contexts. Indeed, in the very process of talking *about* ecology and sf, Pak *performs* a kind of textual ecology,drawing endless connections between sources and practically reveling in the never-settled dialogic relationship between and within science and sf.

Of course, for readers who prefer a more narrow or restrained treatment of sf and ecology,the analytical sprawl engendered by Pak's readings may prove frustrating.Moreover, it can be tempting to equate *Terraforming*'s breadth with exhaustiveness, which certainly is not the case. For one, although Pak reflects productively on many, many sf texts, the texts themselves are predominantly authored by men.Likewise, since Pak sets aside discussions of pantropy (the technological adaptation of the human body to the environment), scholars will have plenty of room to elaborate the intersection of planetary and bodily landscaping.For its part, however, Pak's decades-spanning analysis of terraforming is an impressive work. It finds in sf an opportunity for a"disciplined thought experiment" (Pak 8)—a space for speculations about the future, yes, but also and especially for reflections on the present.

Works Cited

Le Guin, Ursula K. “Introduction”. *The Left Hand of Darkness,* by Ursula K. Le Guin. Penguin Books, 2016, pp. xxiii-xxvii.

Biography: Benjamin R. DeVries is a graduate student at the University of Illinois in Urbana-Champaign and will be starting his PhD coursework on twentieth-century American literature in the fall of 2017. In addition to his interest in speculative fiction during and after that period, his research focuses on Americanness as a concept, and on how modernization and globalization have challenged spaces deemed formative of American identity, like the American West. With its discussion of place, pastoralism, and American sf, Chris Pak’s *Terraforming* constitutes an extension of the questions that motivate DeVries’s research.