BOOK REVIEW

Energy, Ecocriticism and Nineteenth-Century Fiction: Novel Ecologies, by Barri J. Gold (London: Palgrave Macmillan, 2021). XIII, 215 pp. Hardback 103,99€

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The global climate crisis we are currently facing has a history older than perhaps first thought. While the majority of us working in eighteenth- and nineteenth-century studies are well aware of the impact the Industrial Revolution, the turn to the use of fossil fuels, has had, reading the literature produced during this time as a part of the discourse on climate change is a relatively recent development. Barri J. Gold's *Energy, Ecocriticism and Nineteenth-Century Fiction: Novel Ecologies* takes a vital step in highlighting the necessity of re-reading fiction in order to understand and re-evaluate our place as humans within an ecosystem in crisis. As she makes clear, 'neither science nor literature can be disconnected from the larger cultural problems that surround, suffuse, and draw from them. Thus, in a time of both ecological and educational crises, this book also queries the ongoing role in the humanities in addressing problems that seem to call primarily for scientific solutions' (p. 3). Gold argues that if reading literature is to offer a solution to the ecological crisis, we must think of energy, that which underpins said crisis, 'as a *concept*, a form or structure, a way of thinking about the world' (p. 15, original emphasis). In doing so, she demonstrates how working in the humanities has the potential to destabilise the cultural myths that contribute to and sustain our climate crisis.

Novel Ecologies begins by questioning how we read, and how can we read differently in a world driving towards ecological catastrophe. Gold poses that by opening up the borders and crossing between the humanities and science, there may be novel potential for how we navigate nature in the Anthropocene. In exposing the issues related to reading nature/ 'nature' in fiction produced during an increasingly industrial century, evermore relying on fossil fuels, we must rethink our preconceptions of 'nature', those that consistently rely on ideas of borders, closure, backgrounds, stability and separateness. The purpose of this book is to 'essay' a form of experimental reading and thinking that requires us to reconsider ourselves as 'ecological beings' (p. 16).

Following the excellent work done by Val Plumwood and Dianne Chisholm on ecological thinking, and Heidi Scott, Allen MacDuffie, and Michael

Tondre on the social and cultural shifts occurring with movements to different sources of energy or fuel, Gold pushes this discourse further by considering the nineteenth-century understandings and articulations of energy in scientific and canonical fiction writing. What makes this work an outstanding contribution to the developing field of nineteenth-century eco-criticism is Gold's foundational exploration of the construction of ecological discourse in the nineteenth century. The first half of *Novel Ecologies* is dedicated to outlining, explaining, and exploring the laws of thermodynamics, 'with their emphases on the conservation and dissipation of energy, as well as their problematic presumption of closure', and 'their historical connection to ecology and some of the problems, limitations and potential' they assume (p. 15). Gold does well to explore in depth the complex and detailed histories of thermodynamics, evolutionary theory, and ecological sciences, and develops a way of thinking about and approaching texts that is then employed in the second half of the book.

Chapter two, 'Energy, Form and the Novel', offers an overview of the laws of thermodynamics. A welcome discussion for those new to eco-criticism, and a necessary nuance for established eco-critical scholars, Gold connects our contemporary understandings of ecology to the historically specific scientific discourses that consolidated thermodynamics. '[O]ur truth is part of a larger picture', a picture that necessarily includes nineteenth-century culture (p. 19). Gold explores nineteenth-century concepts of energy and fuel, and reconciles the need to understand seemingly abstract scientific principles (p. 20). Importantly, this chapter demonstrates that the forms given to energy are quantifiable and socially imbued. In the nineteenth-century novel, these forms are enclosed systems, conclusions, individualisms, forms that, as the remainder of the book demonstrates, are incompatible with the reality of entanglement and connectedness of the ecological world.

After laying this foundation, exposing the cracks in the discursive conceptions of energy, chapter three, 'The Physics of Life: Darwin, Thomson, Joule, Blotzmann', looks at the scientists of the nineteenth-century who were contributing to those discursive conceptions. This chapter aims to facilitate an understanding of the science to see its limitations, and how that then informs the limitations of reading: 'scientific discourse is itself an act of, and subject to, interpretation' (p. 38). In returning to the impossible idea of separation, Gold demonstrates how the two burgeoning sciences of evolution and energy science deemed themselves separate but were unavoidably entangled. As such, this chapter works through four major scientists' conceptions of energy, evolution,

and thermodynamics, specifically where they interact, their limitations and contradictions, and unseen likenesses. This chapter then brings the conversation back to ideas of energy in nineteenth-century fiction, specifically on the notion of energy as individual characteristic in pre-thermodynamic literature and how this conception has affected our later understandings of 'energy'. 'Our interpretative choices thus matter considerably in how we understand the world around us. Do we insist on a stability and closure in natural systems that the laws of thermodynamics disallow, or do we embrace a potentially overwhelming sense of the interconnectedness of all things?' (p. 53).

The second half of *Novel Ecologies* then proposes and puts into action an experimental reading practice focusing primarily on reading the networks of 'energy' in all its forms in nineteenth-century fiction. Chapter four, 'Experimental Reading', outlines a blueprint for such a reading. Gold argues that interpretation is so important because it directly affects how we view and interact with the world, and in a world experiencing ecological catastrophe, we need to rethink said interaction (pp. 69-70). The main angles of this experimental reading that facilitate a rethinking include: the dangers of reading nature; scarcity and closure; energy; entanglement; multiple and shifting perspectives; the metaphor; and human concerns.

The final four chapters each examine a widely read novel with the concerns of the experimental reading in mind: *Mansfield Park* (1814), *Jane Eyre* (1847), *Great Expectations* (1861), and *The War of the Worlds* (1898). In the first two texts, those that were written prior to the 'consolidation of the principles of […] the laws of thermodynamics', we see how energy was not associated with fuel, but with character (p, 35). The latter two novels, Gold shows, possess anxieties of waste and toxicity, seemingly abated with an impossible self-sufficiency within the enclosed environments each novel, *Great Expectations* and *The War of the Worlds*, creates (p. 144). Her readings interrogate in each text 'a different system that the novel struggles without success to close: the family in *Mansfield Park*, the individual in *Jane Eyre*, the nation in *Great Expectations*, and the planet and species in *The War of the Worlds*' (p. 35).

Overall, this book has numerous strengths in its vital application of ecological modes of thinking to nineteenth-century literature. Gold is able to draw the nineteenth-centuryist in closely with her discussion of sciences through delightful, memorable and easily consumed similes and references to nineteenth-century culture. From Elizabeth and Darcy standing in for the 'two nascent sciences: evolutionary biology and the science of energy', to Herman Melville's

cetology from *Moby Dick* (1851), Gold is explicit in the thorough entanglement of energy discourse throughout wider nineteenth-century literature (p. 38; p. 77). Her thorough grasp of both the literary culture and science means that this book truly adds to bridging the discourses of literary criticism and ecology. Further, she writes in a way that necessarily highlights and explores the very entanglements she describes while also guiding the reader through the narrative as if it were but one straight(ish) road. Her writing recalls and works with Ursula Le Guin's 'The Carrier Bag Theory of Fiction' (1986) as a way of 'opening up' and accepting the necessary entanglements of the ecological world as understood through fiction (p. 3).

In relating her ecological readings to both nineteenth century political contexts as well as our own, she notes that 'The language of ecology cannot be disentangled from the language of politics' (p. 173). This book's aim is to prompt readers into realising the necessity for scrutinising and undoing some of the cultural mythologies surrounding our conceptions of nature and energy, those which have contributed to our ecological crisis. It is essential that we 'undo the pervasive passivity of our cultural mythologies. It is a key contribution that the humanities can make to our current ecological crisis' (p. 151). 'In *Novel Ecologies*', Gold considers 'at length the challenge of imagining ourselves as entangled elements in an open set of open ecologies' (p. 194). The rhetoric of enclosure, individualism and self-sufficiency that pervade our understanding of 'nature' is a significant part of the ecological problems we face. We must 'relegate the human to the margins for a change' and 'let things be messy and open and possible, and to read as if our world depended on it' (p. 72).