Coal, Vril and Solar: Energy in the Novel

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One of the aims of Stories of Change project has been to set current energy challenges and choices in their historical and cultural contexts. It has sought to do so by juxtaposing new oral stories of people's contemporary experiences with changing patterns of energy production and consumption with those described in historical documents and in literary narratives. A proper comparison of the three kinds of energy stories remains to be made, but the insights gained into historical and literary narratives of energy in the course of the Stories of Change project suggest that there are many parallels between them, and that familiarity with the tales told about our relationship with energy in literature can, like historical knowledge, play a part in shaping contemporary debates and informing energy choices.

Ian McEwan's *Solar* (2010) is only one out of dozens of recent novels in which either the plot is focused on energy, or energy issues are a subject of discussion. Authors such as David Mitchell, Sarah Hall, Paolo Bacigalupi, and Andreas Eschbach have crafted scenarios of the looming exhaustion of fossil fuels, the search for alternatives, and the consequences of major climate change. Many of these energy novels are works of popular rather than high culture: they are thrillers, disaster novels and crime stories, and their first goal is, unashamedly, to entertain. There is of course also the genre of the young adult novel, in which self-discovery goes hand in hand with learning about the world. And speculative future fiction has emerged as a form particularly congenial to discussion of climate change, its psychological impact, and its political, social and cultural consequences. Novels presenting future energy scenarios typically include exegetic passages in the dystopian or elegiac mode, detailing the current state of social collapse or remembering and mourning a tike before the fall. Fewer energy novels are set in the present: *Solar* is unusual in this respect, and also in being written in being written in the satirical genre.

While 'peak oil' and the prospect of needing to decarbonise the economy have triggered a flood of novels on this theme since the turn of the century,

surprisingly similar energy-related fears and hopes were present in 19th-century society, and are reflected in Victorian fiction. In *Hard Times* (1854), Charles Dickens voiced concerns over the impact on public health and wellbeing of pollution, urban overcrowding and the bondage of workers to economic calculation and rigid work routines, which he saw symbolised in the monotonous rhythm of the machine-powered looms in the mills. He wrote of the dangers of coal mining, the loss of life as a result of poor safety practices, and the hardships of child labour. The rapid growth of coal extraction and consumption in the Industrial Revolution led to a huge increase in manufacturing and a resulting concentration of private wealth in the hands of factory owners. There was an overall rise in living standards, but this improvement was not equally distributed. Underlying Dickens's novels is an acute anxiety about the transformation of the energy system and the resulting loss of social cohesion.

Though it might surprise us today to learn this, many Victorians also recognised that coal was a non-renewable source, and were worried by the spectre of the exhaustion of coal supplies. The laws of thermodynamics were formulated in the first half of the nineteenth century. The older understanding of energy as a constant, and energy conversions as cyclical, persisted well into the century, underpinned by natural theology. However, from the middle of the century on, anxieties were expressed about resource depletion, finding their most cogent expression in William Stanley Jevons's book, *The Coal Question* (1865). The replacement of wood and water power by coal was interpreted as "living off capital", and understood by some as hastening the "heat death" of the universe, an inescapable phenomenon which William Thomson first theorised in 1852 (the concept of entropy followed in 1865).

Hard Times has striking images of glowing coals turning to grey ash, and describes human activity as an accumulation of dust and ash, suggesting the fruitless and irreversible dissipation of energy. The moral ambivalence which Dickens felt towards Britain's coal-driven industrial development was compounded by a curious anxiety that the new energy abundance would lead to moral degeneration. The traditional meaning of 'energy' was mental strength, force of character, willpower, activeness and creativity. It was not till 1805 that energy was defined as a physical force – that is, a measurable quantity of motive power or work – and energy continued to have a dual meaning throughout the century. Dickens and

other novelists (such as George Eliot, John Ruskin, and Joseph Conrad) saw it as their task as writers to counter the purely materialist conception of energy by fostering use of the creative powers of the mind and community spirit ('mental energy') to transcend physical laws.

The Victorian novel most explicitly concerned with energy issues is *The Coming Race* (1871). Though now largely forgotten, its author, Edward Bulwer-Lytton, was highly regarded at the time, and he lies buried in Westminster Abbey. The plot of *The Coming Race* spatializes time travel: the narrator encounters a people resembling an advanced future form of humanity after descending into a rift at the bottom of a deep mine shaft. The subterranean world he discovers knows no war or social conflict, and enjoys infinite, waste-free energy. Initially greatly impressed, the narrator gradually becomes disillusioned, and eventually escapes back to the surface of the earth.

'Vril', the name which Bulwer-Lytton gave this utopian energy force, captured the public imagination, and prompted the marketing of a new beef extract drink as bovine Vril, or 'Bovril'. Vril is a mysterious force, simultaneously physical and immaterial. On the one hand it resembles electricity, being generated by machines but also stored in this race's humanoid bodies and released like the charge of an electric eel. On the other, it is a form of mental energy, enabling telepathic communication and mesmerism. It is a healing force, but also a terribly destructive one. Its vast power enables the Vril-ya to fly (they are describes as 'angels'), and affords them a life of leisure. But their affluence is achieved at the expense of less advanced neighbouring races, which are wiped out as the Vril-ya population expands and takes over their land. Vril has, then, a darker side: the Vril-ya are mercilessly rational. The author expresses misgivings about the world of Vril in a number of ways, the most significant being that mastery of Vril, perfected over the centuries, has been accompanied by a loss of willpower, passion, ambition and artistic creativity.

The Coming Race is a deeply ambivalent vision of an energy-abundant future. The world of the Vril-ya may initially have been conceived as a wish-fulfilment fantasy of the author's, but the duplicitousness of their society is definitively exposed when we discover it is based on child labour. Bulwer-Lytton thus associates unlimited energy with moral degeneration and the exploitation of others. Strangely, the novel has attracted a cult following among extreme right-wing racists: an

attentive reading suggests that it was not the author's intention to celebrate the Vril-Ya, but rather to warn against the 'demonic' lure of high-energy modernity and reactionary political utopias.

As witnesses to what was arguably the last major energy system change before that of our own day, the Victorians anticipated many of today's concerns about energy. While they were fascinated by the wealth, freedom and power it afforded, they were troubled by the unintended consequences of the new forms and volume of energy generation and consumption for individuals, society as a whole, and the natural environment. *The Coming Race* shows how literature contributed to what Allen McDuffie has called an "ecologically anxious" counter-discourse in the face of the nineteenth century's heroic, energy-intensive industrialisation. As McDuffie comments, the representation of energy in Victorian literature both echoed and challenged the way it was represented in scientific discourse. Poets, novelists and critics offered a "tentative and equivocal" window onto the growing consciousness of unsustainable energy use.

The central themes of *Solar* and other 21st-century energy novels are, then. not new. McEwan's writing strategy is, however, innovative in its combining of domestic comedy with social satire to tell an energy story. For all its humour, the book has a serious message. Whether humanity will be capable of adapting to the requirements of climate change is for McEwan a matter of human nature, and his view of this is a dark one. Self-interest is hard-wired in humans, he suggests through his protagonist, the physicist Michael Beard, and humanity is no more likely to manage its energy needs rationally and equitably than it is to halt its genetically imprinted urge to multiply and take possession of the Earth. 'Solar', which stands in the novel for a cheap, clean, renewable form of energy obtained from a new process of artificial photosynthesis that Beard has invented, may or may not become reality – but if it does, it will not solve the problem of humanity's apparent inability to exercise self-restraint. Ultimately, *Solar* suggests that conflicting desires and human weakness may be the hardest barriers to overcome in responding to the challenge of climate change. Appropriate to its theme of elusive balance, the novel concludes with an open ending carefully positioned between Dickens's optimism and Bulwer-Lytton's pessimism.

Novels are, then, a medium from which much can be learned about how the energy problem is perceived and contested. As records and dramatisations of

individual and collective experience, they map discursive conflicts and modes of being in the world. Some novelists have celebrated the material benefits and freedoms gained from fossil-fuelled modernity, but more often authors have explored its unforeseen consequences. The question remains, though, whether there is a sense in which novels are different from other energy stories – do they provide a unique kind of insight? Certainly, they mediate ideas and arguments in scientific, political, economic, and media debates to a general public. However, at least in some cases, they go beyond this to enrich debates, by recalling forgotten events in different times and places, and allowing us to see things through the eyes of others. With the licence of fiction as a depragmatised form of discourse, they imagine alternative realities and conduct thought experiments which shape our understanding of the challenges we face. By making abstract choices real and personal, novels translate them into the realm of perception, experience, agency, self-expression and collective self-identification. And as extended workings of imagined futures, characterised by multiple uncertainties, they break up the sermonising of missionary ecopolitics; challenge the status quo; and provide a space in which the many ambivalences of energy changes can be grasped. Literary narratives of energy tend to be more representational, ‘political’, pluri-voiced, and elaborately framed than the relatively simple, fluid, usually first person stories in oral accounts: this gives them greater ability to capture the diversity and complexity of society’s relationship with energy. As can be seen in the Victorian novel, it also renders them transhistorically effective sites of knowledge that can be activated in different cultural contexts by new generations of readers.

By reflecting our attitudes towards energy and holding them up to critical scrutiny, novels play their part in informing and shaping debates on energy choices. It is a part which has hitherto been unjustly overlooked in studies of the political and social dimension of energy system change.