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Imagined Energy Futures in Contemporary Speculative Fictions

Bradon Smith

Abstract

This essay examines the representation of post-fossil-fuel energy systems in the imagined futures of three works of speculative fiction: Sarah Hall's novel *The Carhullan Army* (2008), Emily St John Mandel's novel *Station Eleven* (2014) and Anne Washburn's play, *Mr Burns* (2014). It begins by arguing that speculative fiction has an important role in imagining alternatives to our current petro-modernity, and in reminding us that in energy systems, change is constant. Since speculative fictions turn our present into the "determinate past of something yet to come" (Jameson 2007), it is instructive to look at these futures' ideas of the past. This essay identifies two forms of nostalgia: an agrarian utopianism, which depicts an idyllic pre-fossil-fuel world; and a petro-nostalgia, a desire for an early-twenty-first-century fossil-fuelled society of casual luxury. Tracing these ideas through the three texts, this essay shows how these narratives imagine a non-fossil-fuel society, but also how the past of fossil-fuel dominance continues to have a presence, preserved in language and cultural memory in these futures. The essay concludes by arguing, following Jameson, that speculative fictions such as those examined here allow us to return to see our present anew, and to see our petro-modernity as more malleable and more changeable than it can sometimes appear.

Keywords: energy; speculative fiction; contemporary fiction; nostalgia; fossil-fuels

Introduction

The Paris Agreement of December 2015 commits governments to the long-term objective of keeping "the increase in global average temperature to well below 2°C above pre-industrial levels" and to pursuing "efforts to limit the increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change" (Article 2, 1.a).¹ The agreement leaves the task of deciding how to achieve these targets to individual nations, but clearly these ambitions require the thorough re-imagining of our current global fossil-fuel based energy system.

As Fredric Jameson's famous aphorism reminds us, this kind of re-imagining is itself challenging: for Jameson, it appeared "to be easier for us today to imagine the thoroughgoing deterioration of the earth and of nature than the breakdown of late capitalism;"² but the intimate and long-standing connection between capital and carbon-energy means that we may wonder if this is tantamount to saying that it is easier to imagine

the climate-change driven deterioration of the earth, than the end of oil. In his “Notes Toward a Post-Carbon Philosophy,” for example, Martin McQuillan observes that “to speak of a post-carbon economy might in fact be to say something quite radical, given that our present situation is so intensively related to the price of oil.”³

The Paris agreement is a ground-breaking, global, legally binding climate deal; and yet, the means to achieve this ambitious target are still largely unknown. McQuillan sees it as “a task of the critical imagination to envisage a world beyond the fractal distillation of petroleum,” but stresses that this “topic is not wild science fiction.”⁴ And yet, commentators on the Paris Agreement have observed that to limit temperature increase to 1.5°C will almost certainly require some form of carbon capture and storage (CCS); more probably it will require negative emission technologies (NETs), most commonly presumed to be a form of bioenergy with carbon capture and storage (BECCS), in which large quantities of biomass are burned in power stations which capture and bury the emissions.⁵ Neither is yet a proven technology: CCS “has not been successfully deployed at scale despite major efforts” and, even in the hypothetical, there are “unrealistic assumptions” regarding the magnitude of carbon dioxide removal achievable by BECCS.⁶ Amber Rudd MP, then Secretary of State for Energy and Climate Change, responded to a question about negative emissions in the immediate aftermath of signing the Paris Agreement by observing that “we don’t have the answers yet, how we are going to achieve that in the second half of the century.”⁷ Projections for an energy system to achieve a “1.5°C world” are currently, then, pieces of speculative fiction. Or, as the journalist George Monbiot has rather more scathingly summarised, “our energy policies rely on vapourware.”⁸

Even though the domain of climate change is dominated by considering the future, we have – generally – not tried to understand the future of climate culturally. But, as Mike Hulme has recently argued, following Arjun Appadurai, the future of climate is a “cultural fact;” by which he means that it is in culture that ideas of the future are embedded.⁹ The standard tools employed to apprehend the future of climate - computer models, and scenario planners, and foresight analysts – are, I would argue, not only cultural mediations, but various forms of speculation, indeed of speculative fiction. They are what John Beck has called ‘applied fictions’ or what we might call ‘productive fictions.’¹⁰ Through various media, they tell stories about possible futures; in some cases these productive fictions tell a story about the future hoping that in so doing they bring it about.

So, can speculative fiction help us imagine our way out of our current energy crisis? The difficulty, as Stephanie LeMenager has shown, is that “twentieth-century petromodernity offer[s] strong resistance to the imagination of alternatives” and indeed that “petromodernity has enveloped the Euro-American imagination to the extent that ‘oil’ has become implicitly synonymous with the world, in a large, Heideggerian sense of the human enframing and revealing of earth, thus the world we know.”¹¹ Imre Szeman addresses ‘Literature and Energy Futures’ for his section of a column in the PMLA which proposes a radical reframing of literary historical periods not by movements, nations or centuries, but by dominant energy source – so that we would have the ages of wood, tallow, coal, gasoline and so on. He describes the conditions that have brought us to “where we find ourselves at the present,” but suggests that “it makes little sense to cast about for what might come after the present phase of oil literature.”¹² He goes on to argue that imagined energy futures may do one of two things. On the one hand, they may perpetuate the present fiction of a continuing energy-surplus that sustains our current way of life – perhaps through the transition from an age of oil to an age of solar, or through the discovery of a “fantastic new type” of sustainable energy.¹³ In this possibility, Szeman writes, “the promise of the future underwrites and legitimizes the bad faith of the present.” The alternative is for these fictions to imagine a post-apocalyptic world of energy-lack that serves “as a cautionary tale about where our current fiction of [energy] surplus might lead.”¹⁴

These two categories of speculative energy futures map on to two of the “three dominant narratives circulating today concerning what is to be done about the disaster of oil” that Szeman identifies in the wider discourse on energy: ‘techno-utopianism’ and ‘eco-apocalypse’ (the third is ‘strategic realism’).¹⁵ Neither of these dominant narratives is especially helpful in unpicking our current dependence on fossil fuels – the first leads to a complacency based on a “fantasy of past coincidence between technological discovery and historic necessity”¹⁶ that “reinforces the bad utopianism of hope in technological solutions to the looming end of oil;” the second, while ‘pedagogic’ in intent, simply hopes that the threat of impending disaster will be enough on its own to bring about the required social and economic shifts to avoid it.

It true that these limitations are identifiable in many pieces of speculative fiction, but in this essay I argue that more progressive narratives and interpretations are possible; that works imagining the future of energy can extract themselves from this either/or, and in so

doing fulfil two important roles in considering our current energy challenge. Firstly, that they can – whether Utopian or not, but like the ‘Utopian impulse’ more widely – offer an imaginative space to consider future alternatives to our petromodernity.¹⁷ Secondly, through this alterity they break the apparent current cultural hegemony of twentieth- and early-twenty-first-century petromodernity, reminding us that in energy systems, change is a constant – that our future relationship with energy may be different, as it has been different in the recent past.

In this essay, I concentrate on imagined energy futures in three pieces of speculative fiction: Sarah Hall’s novel *The Carhullan Army* (2008),¹⁸ Emily St John Mandel’s novel *Station Eleven* (2014)¹⁹ and Anne Washburn’s play, *Mr Burns* (2014).²⁰ Examining in particular the way in which these energy futures figure their relationship with the past, I argue that these narratives are capable of envisioning change. Graeme Macdonald has written of the related genre science fiction, that there is a strong case for the progressive value of sf, as a genre capable of imagining alternatives. He argues:

Future fuel and energy technology, it is generally agreed, has to be something radically unlike what we have at present. Depictions of their perceived failure and unsustainability provide a jolt, while imaginative projects of what might replace them - good or bad, plausible or otherwise - allow a means to think through logical and hypothetical eventualities and extrapolations of the hyper-conditions of prime-moving, machine-driven technics.²¹

The unimportance of plausibility is an important point here. My argument, and Macdonald’s, that speculative fictions can provide space for the envisioning of alternative energy systems, is not founded on the idea that these alternatives need be plausible or even possible. Rather,

the fact that future fuel or hypothetical power sources are or may be entirely ‘made up’ can in fact provide a useful vision, a starting jolt to think of alternatives to the inherent flaws (and impressive prowess) of our carbon-driven system and the hegemonic energy ontologies it reproduces. Any cynical response that recognizes the fuel of SF as purely fictive denies the place of impossibilist visions as potential solutions to present and projected ecological crises.²²

Depictions of future energy systems “need not require any modicum of ‘scientific’ plausibility” since the point “from a fuel-anxious present, is to register the positing power

and possibility of the invention of alternative systems and methods, and cognize their relative difference to contemporary power sources.”²³

As McQuillan says of a post-carbon philosophy, “philosophy will not name an alternative energy source, and this is a question that philosophy cannot answer and may not be a philosophical question. Philosophy, on the other hand, offers a model of crisis.”²⁴ Neither, obviously, will literary criticism; nor will science fiction or speculative fiction – despite the enthusiasm of fans and literary critics for the (relatively few) instances in which science fiction has pointed the way to or prophesied technological change. This isn’t the role of sf or speculative fiction; instead, they offer an imaginative space in which to think through the experience of dramatic infrastructural, social and environmental change. Or, as Lucy Sargisson says of utopias: as “literary or physical spaces [they] represent an opportunity for thinking differently about something we might otherwise take for granted.”²⁵

Nostalgia (1): Agrarian utopianism

Imagined futures transform our present into the “determinate past of something yet to come.”²⁶ From the perspective of these futures – from within the diegesis of an imagined future, we can say – our present is the past; it makes sense to begin, then, by examining the relationship that imagined energy futures have with their ‘determinate’ pasts. One common trope that future energy narratives exhibit is nostalgia; but it is necessary to distinguish between two different forms of nostalgia: one that harks back to a supposedly pre-fossil-fuelled world (or at least pre-petro-ubiquity), and another which yearns for a past life of petro-fuelled ease. Let us take these two in turn.

Futures nostalgic for a pre-petroleum world tend to imagine one that is simpler, cleaner and – normally – rural. This nostalgic ‘future primitivism’²⁷ we can call *agrarian utopianism*. Ursula Heise identifies a similar tendency in environmentalist non-fiction, noting “a palpable nostalgia for a world less or not at all transformed by humans.”²⁸ This nostalgia can be found in a range of imagined energy futures, and is related to the aesthetic of overgrown cities nearly ubiquitous in future imaginaries. This aesthetic has recently found an exemplary in Alan Weisman’s *The World Without Us* (2008),²⁹ but obviously long predates that book.³⁰ It inhabits the same space as agrarian nostalgia in its desire to see nature as finally unaffected by our interventions.

The NBC TV series *Revolution* (2012-2014) presents an uncomplicated version of the agrarian-utopianism trope as a response to a future of 'energy-lack.' The show is set in a near-future world where all electricity has abruptly ceased. A voiceover – running over familiar timelapse-style images of nature reclaiming roads, cities and petrol station forecourts – starts each episode:

We lived in an electric world; we relied on it for everything; and then the power went out. Everything stopped working. We weren't prepared. Fear and confusion led to panic. The lucky ones made it out of the cities. Governments collapsed; militias took over, controlling food supplies and stockpiling weapons. We still don't know why the power went out but we're hopeful that someone will come and light the way.³¹

The pilot episode opens at the moment just before the blackout, in a world we recognise as our own: a family variously watching TV, using a tablet and on the phone. The opening minutes show the lights going out across the Northern American continent, as – tapping into other apocalyptic aesthetics – planes fall from the sky. Jumping forward to 15 years after the blackout, the first scene in our post-electric future shows a group of families peacefully living in a small hurdle-fenced community, with crops and livestock at the centre. Sheep are being herded through the village; maize grows in a small plot; there are plants in pots, or – pointedly – stacks of tyres. To emphasise the contrast, the rusted shell of a car has been repurposed as a herb garden. This single image reads: our petroleum driven world, replaced by rural self-sufficiency.

There is a tension here between, on the one hand, the destruction wreaked by the blackout and the threat of violence implied by the opening voiceover, and on the other the apparent pastoral idyll of self-sufficiency that is its consequence. There are no pentameters here, but the obligatory shepherd, and the retreat from the city ("If you were smart you left the city, if you weren't you died there"), suggest this might find a place in the first of Terry Gifford's three kinds of pastoral.³² This tension is quickly resolved, by a violent intervention and the need for the protagonists to leave the rural community, and head for Chicago: the urban 'return' that we would expect from the form.

We find more complex examinations of this agrarian-utopianism in novels like Sarah Hall's *The Carhullan Army*, in which an all-female commune has established itself outside the control of an authoritarian state in a post-climate change world. Within the urban

society, the strictures of the state, and the rationing of food and energy (as well as gender oppression) make life unbearable for the protagonist narrator – who calls herself only Sister – and she escapes to the rural commune on the moors. Although predictably the idyllic life doesn't last, at first the honest hard work of agrarian life is cast as utopic. She enjoys the outdoor labour, she gets fit and strong, and there is camaraderie among the women.

Describing the farmhouse at Carhullan, Sister emphasises its remoteness:

It was a place for pathfinders and entrepreneurs, empire builders, priests, and survivalists; those with the determination to carry stone thousands of feet up, over rough water and inhibitive ground, those who could rear livestock then slaughter it, those who had something so true in themselves that they were willing to dwell at the edge of civilisation for the sake of it.³³

Lyman Tower Sargent notes that the “most common form of putting a specific [utopian] vision into practice has been to create a small community either to withdraw from the larger society to practice the beliefs of its members without interference or to demonstrate to the larger society that their utopia could be put into practice.”³⁴ Carhullan is no exception, it is “removed from the faulted municipal world;”³⁵ removed, in other words, not only from state control and influence (“Of or relating to the internal affairs of a state”), but also from the specifically urban centres of that control which the origin of the word ‘municipal’ also conjures up.³⁶

But Carhullan is also removed in time. This place, this refuge, belongs not only in the past of Sister's world, but in our past too, in a pre-fossil fuel age. Bringing together the spatial and temporal distance, she observes: “It had never been built with the outside world in mind. It was of another age, when utilities and services were unimaginable, before the light bulb had been dreamt of.”³⁷ As she leaves the town, Sister knows that she is somehow looking backwards:

There was something better out there. I knew what it was and where to find it. Even if it meant looking behind me, to a venue that had long been forgotten in the aftermath of catastrophe, and the desperate rush to subsist. (Ibid.)

Sister's fantasy of Carhullan is dominated by looking backwards – the farmhouse is even placed by Hall's narrator into the longer sweep of history of this landscape, of Roman forts, and Britons before them. The dichotomy of ruined urban present and rural nostalgic past is established.

This nostalgia, from a post-fossil-fuel future, is for a rural society that is, for most readers in the global North, already in the distant past. Deborah Lilley has shown how the novel “begins to shift the pastoral into new forms,” and how Sister’s “pastoral perception is violently reset,”³⁸ but Carhullan itself is initially seen in pastoral terms:

Within a year of it being inhabited the women had installed a waterwheel, harnessing a nearby spring. A year-round garden had been planted, and a fast-growing willow copse. There were sties, bees, an orchard, and a fishery at the beck and call of the tarn. There were peat troughs, filtration tanks. It was all grandly holistic, a truly green initiative.³⁹

Shortly after these first impressions of Carhullan, we learn from Sister that the waterwheel in fact powers an electrical generator; but this initial description censors any mention of modern technology. Instead, the waterwheel is described in agricultural terms, with the stream placed in ‘harness.’ It is conspicuous that Sister’s return to the pastoral idyll – what Lilley describes as the idea that “the country is still capable of offering something that the town cannot [...] the possibility for things to be otherwise”⁴⁰ – is also a return, for the most part, to a pre-petroleum, pre-electric world. Sister comments that although there is sometimes electricity from the generator for a CD player, she “liked it when the tallow candles were lit and the musicians played.”⁴¹

But the novel’s utopic energy society is complicated – knowingly compromised – by Hall. Firstly, this is not an entirely fossil-fuel-free world. There are “plans to heat tar out of a portion of it [the peat], and refine the distillation into paraffin oil;” and there is “a substantial supply of diesel in heavy plastic containers and metal drums.”⁴² In fact, a wide array of energy sources are represented in the novel: hydro-power, peat, wood, tallow, diesel and paraffin are all used on the farm.

But it is the novel’s descriptions of Jackie, the founder and leader of the Carhullan commune, that seem most at odds with the supposedly sustainable-energy commune she has created. She has not only “the look of someone in power”⁴³ but also, literally, with power. When Sister first meets her, she is described as having “an energy,” as seeming “too inanimate for her voltage;”⁴⁴ her eyes are “oily and flammable” and Sister thinks her temper could “ignite;”⁴⁵ her company is “electric,” and when Jackie puts a hand on Sister’s shoulder, Sister can “almost feel a current passing from her body to mine;”⁴⁶ when Jackie kisses her, Sister describes how “I felt as if bellows had been placed between the bars of my ribcage

and the coals of me blown in to full flame;”⁴⁷ when Jackie dies, Sister sees “the light going out of her eyes. The flame in them was guttering.”⁴⁸ The diesel mentioned above is one of the things that Jackie “had removed from civilisation [...] that she needed to assist her enterprise;” and her own energy and drive that keeps that enterprise going is consistently compared to electrical and fossil energy. Even in this context, Hall appears to be indicating, it remains hard to exclude fossil fuels: in imagining a future without them, through language they force their way back in, a reminder of how hard it will be to move beyond them.

Nostalgia (2): Petro-nostalgia

It is possible to identify this same dynamic – of fossil fuels re-entering the narrative – in other post-fossil-fuel texts; even in those where fossil-fuels are particularly scarce in the future society. This continuing presence comes about through a second form of nostalgia: not for the pre-petroleum age, but precisely for our own present, the late-twentieth- and early-twenty-first-century lifestyle of the global North: the *casual luxury* of fossil-fuelled ease and consumption. This is nostalgia for what Stephanie LeMenager has called ‘petrotopia’ – the “the now ordinary U.S. landscape of highways, low density suburbs, strip malls, fast food and gasoline service islands” – and from a future of severe energy lack, it is perhaps unsurprising.⁴⁹

Take this example from Emily St. John Mandel’s post-pandemic social collapse novel *Station Eleven*. The novel is set immediately preceding the outbreak of a global flu pandemic, and twenty years after the ensuing societal collapse. The novel follows a combined orchestra and theatre troupe in this post-collapse future, travelling between small settlements, performing music and plays – mainly Shakespeare. One early chapter of the novel consists entirely of “An incomplete list” of things that are no longer possible or available:

AN INCOMPLETE LIST:

No more diving into pools of chlorinated water lit green from below. No more ball games played out under floodlights. No more porch lights with moths fluttering on summer nights. No more trains running under the surface of cities on the dazzling power of the electric third rail. No more cities. No more films, except rarely, except with a generator drowning out half the dialogue, and only then for the first little

while until the fuel for the generators ran out, because automobile gas goes stale after two or three years. Aviation gas lasts longer, but it was difficult to come by. No more screens shining in the half-light as people raise their phones above the crowd to take pictures of concert stages. No more concert stages lit by candy-colored halogens, no more electronica, punk, electric guitars.⁵⁰

It is revealing to note how many of these are no longer possible specifically because they rely on an abundance of cheap energy. Through this eulogy for a lost high energy-society, Mandel reveals the extent to which contemporary Western culture is epitomised by and dependent on our energy production and consumption, and highlights in particular the dependence of its forms of cultural production.

Anne Washburn's play, *Mr Burns: A post-electric play* takes this connection between energy and culture yet further. This three act play is set in three futures. The first is an unspecified near future, in the immediate aftermath of societal collapse the exact cause of which is unclear, but exacerbated by the failure of the electric grid, and fallout from the resultant meltdown of nuclear plants across the United States. The second act begins seven years later; the final act is set seventy-five years on from act two. In the first act, we encounter a small group of survivors sitting around a fire; they talk about the collapse, and they try to recreate the plot and dialogue of a particular episode of *The Simpsons* called 'Cape Feare' – which itself riffs on the films of the same name. Their level of attention to the task suggests an exercise in self-distraction, not to say therapy. The process connects them through a shared recollection. But, as becomes more apparent in Act Two, discussing the luxuries they have lost (they attempt to compute if the world's supply of Diet Coke has been exhausted) also reconnects them with the vanished world of their pasts – that is, of *our* present. The process keeps alive the casual luxuries of television, consumer culture, shopping malls, cars, nuclear power plants – all of the American 'petrotopia' that is so ubiquitous in *The Simpsons* that it is almost unnoticeable.

The second act formalises this therapeutic function of shared recollection. By now, the group of survivors have formed a small theatre troupe, who perform meticulous re-enactments of *Simpsons* episodes, as well as 'commercials' which remember, and keep alive, those 'bygone luxuries.'⁵¹ These commercials immortalize cold Diet coke, Chablis, Pret a Manger, Sprite, Sara Lee Coffee Cakes, and Columbian coffee; but they also recall and fetishize the daily rhythm of the nine-to-five, trivial office dramas, heating for water, hot

baths, electricity for fridges and the houses in which to put those baths and fridges. One of the actors in *Station Eleven* notes that people seem to prefer Shakespeare to the modern plays that the Symphony have tried to put on, because “people want what was best about the World” (38); but the company in *Mr Burns* have gone much further – like any advertisement, their show creates an unreal world, and therefore a nostalgia for a thing that never really existed. For the audience it is, as one character notes, “a fine line between tantalization and torture.”⁵² By the future of the second act, these performed pieces of twentieth-century nostalgia and popular culture are clearly a key part of society. Lines of dialogue from television shows have become a valuable commodity, with competing theatre companies paying in kind for accurate lines from TV shows, and thereby owning the rights to perform those shows.

This theatre company creates these mock pasts from what is available: they are delighted to improve the appearance of light cast from the television that is the centrepiece – the modern hearth – of the Simpson’s family home, by installing a mirror behind the candle placed in a salvaged television; and they create steam to mimic an off-stage hot bath. And, as the play text’s production notes specify, “all illumination is from ostensibly non-electric sources.”⁵³

That Washburn’s play is more than passingly interested in modes of electrical production is indicated in various ways. The title specifies that this is ‘post-electric’ play; but it the title also reminds us that *The Simpsons* is itself already interested in the modes of electrical production, since the primary industry in Springfield is a nuclear power plant, whose ecological consequences are a common storyline. The eponymous character of Washburn’s play is Mr Burns, despite the fact that he is not a pivotal character in the Cape Feare episode of *The Simpsons*, or in Washburn’s own narrative. But Mr Burns is, we remember, the malignant owner of the Springfield nuclear power plant, where the incompetent Homer Simpson is a Safety Inspector. “Oh, ‘meltdown’,” Mr Burns says in one episode, “It’s one of those annoying buzzwords. We prefer to call it an unrequested fission surplus.”⁵⁴

Washburn’s play, set in a world where meltdown and the threat of radiation are discussed by the characters, connects its occasionally tragic tone to the comic satire of nuclear energy production that is a recurring theme of *The Simpsons*. As Broderick notes: “The ever present influence and immanence of the atomic age pervades *The Simpsons* like a

thematic half-life.”⁵⁵ More specifically, it is satirical about the possible safety risks of nuclear power plants. Broderick again: “*The Simpsons* is a constant parade of the foibles of nuclear energy. The series seems to relish displaying the cant and propaganda of the nuclear industry either via a hilarious juxtaposition, inappropriate rhetoric, or an ironic and faux nostalgia for Cold War nuclear boosterism.”⁵⁶

Both *Station Eleven* and *Mr Burns* depict a post-electric world that is a consequence not of, for example, peak oil, or a policy response to climate change in the form of rationing, but of a network failure of the grid caused by some *other* catastrophe. In *Mr Burns* the ultimate cause is unclear, but leads to a chain reaction of nuclear power plant failures and resultant fallout; in *Station Eleven* it is a rapid and lethal pandemic. Both works understand that the electrical grid is fragile, and dependent on its human actants.

Writing about the 2003 Blackout, Jane Bennett quotes the *International Herald Tribune* as saying that “the grid’s heart fluttered.” To say this, she continues,

is to anthropomorphise. But anthropomorphising has [...] its virtues. Here it works to gesture toward the inadequacy of understanding the grid simply as a machine or a tool, as, that is, a series of fixed parts organized from without that serves an external purpose.

To the vital materialist, the electrical grid is better understood as a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire, and wood, to name just some of the actants.⁵⁷

Compare this with the musings of a character in *Station Eleven*:

Jeevan found himself thinking about how human the city is, how human everything is. We bemoaned the impersonality of the modern world, but that was a lie. It seemed to him; it had never been impersonal at all. There had always been a massive delicate infrastructure of people, all of them working unnoticed around us, and when people stop going to work, the entire operation grinds to a halt. No one delivers fuel to the gas stations or the airports. Cars are stranded. Airplanes cannot fly [...]. No one comes to work at the power plants or the substations, no one removes fallen trees from electrical lines.⁵⁸

Jeevan is not quite a vital materialist, but he understands, like Bennett, that the grid is more than arranged inorganic parts; and Mandel indicates that a weak link in the network that

maintains our petro-modernity may be the human labour that sustains it; just as the weak link in the safety of nuclear power plants has been diagnosed as the competence of those whose responsibility it is to maintain them.

The nostalgia for the electric world reliant on this fragile heterogenous infrastructure is apparent in Mandel and Washburn's thematically strikingly similar texts, a similarity which extends to their resolution: both fictions end with the surprising return of electric light. In Washburn's play, the final act's rock-opera acts as a folk memory of the events leading to societal collapse:

NELSON: [...] and the crowd was
moving south that crowd was surging to the end of town
where walls of flame rose through the air
[...]

ALL: We heard a boom was there a bomb
[...]

EDNA KRABAPPEL: And no one shouted flee,

ALL: Yes no one thought to flee

TROY MCLURE: [...] I'm here to report a fire, and an explosion, at the Springfield
Nucyalur [sic] Power Tower ⁵⁹

But the act and the play end, the stage directions demand, with "*A SLOW ELECTRIC DAWN.*" As Bart sings a final song of hope – "The world is new and glittery/ I run to meet it hopefully" – electric lights of all kinds come on, and in the play's final action the actor playing Mr Burns rises through a trap "frantically pedaling" a bicycle to power the lights.

In Mandel's novel, Kirsten is taken up to the traffic control tower of the airport which has become a small community:

They were admitted into an octagonal room with walls of glass and arrays of darkened screens [...]

"Look there," Clark said, "to the south. It's what I wanted to show you." She followed the line of his finger, to a space on the southern horizon where the stars were dimmer than elsewhere in the sky. "It appeared a week ago," he said. "It's the most extraordinary thing. I don't know how they did it on such a large scale."

[...] at first she couldn't comprehend what she was seeing. [...] In the distance, pinpricks of light arranged into a grid. There, plainly visible on the side of a hill some miles distant: a town, or a village, whose streets were lit up with electricity.⁶⁰

How are we to read this return of electric light at the end of these two texts? Washburn's ending does seem to offer the possibility of redemption: the figure of Burns—representing nuclear power and, synecdochically, our society of energy excess—is defeated, and the return of electric light is a triumph of ingenuity—the stage directions note that the “jury rigged” electric lights are adapted with “care and cunning”—and is a low-tech renewable solution.⁶¹ This return of light is accompanied by words of renewal: “On the horizon is first light/ And the warm wind of morning/ Will dispel this endless night / The warm wind of morning/ Brings the dawn and dawning light”.⁶² Mandel's ending is more ambiguous. Kirsten is excited at the end of the novel about travelling to see this newly electrified settlement; but the novel gives us no assurances that this is a positive development. The reader is kept in the dark about how this electrification has been achieved: a return to the old system of fossil-fuels, or a new, cleaner energy system? What is revealing is neither of these texts is able to maintain the fictional post-electric world that they have established.

Conclusion

The speculative fictions discussed here offer us, in the words of Fredric Jameson, multiple 'mock' futures.⁶³ As Jameson says of science fiction, this is their characteristic mode, rather than to “seriously attempt to imagine the real future of our social system.”⁶⁴ These multiple mock futures transform our present into the “determinate past of something yet to come,” which in turn allows us to see our present for itself – it can then “enter the eye laterally, with its intensity undiminished.”⁶⁵ This intensity is a product of the untotalizable discourse and materiality of the present, itself a by-product of oil-capital. We can find in Jameson's characterisation a clue as to the significance that imagined energy futures may have: one that is neither naively pedagogic, nor simply cautionary, nor complacently techno-utopian.

So what, then, do these 'mock' futures do? As we return from them to our own present, there is, Jameson remarks, something

at least vaguely comforting and reassuring in the renewed sense that the great supermarkets and shopping centers, the garish fast-food stores and ever more swiftly remodeled shops and store-front businesses of the near future of Chandler's

now historic Los Angeles, the burnt-out-center cities of small Midwestern towns, nay even the Pentagon itself and the vast underground networks of rocket-launching pads in the picture-postcard isolation of once characteristic North American 'natural' splendor, along with the already cracked and crumbling futuristic architecture of newly built atomic power plants – that all these things are not seized, immobile forever, in some 'end of history,' but move steadily in time towards some unimaginable yet inevitable 'real' future.⁶⁶

This description – of what is *not* immobile forever, but actually subject to change – is, for Jameson, a description of some of the symptoms of late capitalism; but it could equally well be called, returning to LeMenager's term, petrotopia. Compare Jameson's description above to Le Menager's strikingly similar definition, quoted earlier, of petrotopia as "the now ordinary U.S. landscape of highways, low density suburbs, strip malls, fast food and gasoline service islands, and shopping centers ringed by parking lots or parking towers." Le Menager notes that petrotopia is a utopia in the sense of David Harvey's critique of utopianism as a form of hegemonic 'social ordering:' it includes the implication that no future needs to be envisaged because the ideal state has already been achieved and "strictly regulate[s] a stable and unchanging social process."⁶⁷ In other words petrotopia prevents us from seeing beyond its own lifespan. But in Jameson's analysis, the "already cracked and crumbling futuristic architecture of newly built atomic power plants" pre-empt the realisation that systems and infrastructures, no matter how seemingly permanent, are prone to change. As we return from the multiple futures of speculative fiction to our present, some of the 'cognitive estrangement' that Suvin⁶⁸ identifies as key to the genre of science fiction transfers to our view of the present. We return with the ability not only to see it as if anew, but also to understand its malleability, its transience. Able, in other words, to imagine a world not locked into petromodernity.

¹ United Nations Framework Convention on Climate Change. *Adoption of the Paris Agreement*. 21st Conference of the Parties, Paris: United Nations, 2015.

<https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>. Accessed 27 September, 2016.

² Fredric Jameson, *The Cultural Turn: Selected Writings on the Postmodern 1983-1998* (London and New York: Verso Books, 1998), 50.

³ Martin McQuillan, "Notes Toward a Post-Carbon Philosophy," in Tom Cohen, ed., *Telemorphosis: Theory in the Era of Climate Change, Vol. 1* (London: Open Humanities Press, 2012), 270–92; here 281.

⁴ *Ibid.*, 270.

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- ⁵ Robert McSweeney and Roz Pidcock, "Scientists Discuss the 1.5C Limit to Global Temperature Rise," *Carbon Brief* December 10, 2015. <https://www.carbonbrief.org/scientists-discuss-the-1-5c-limit-to-global-temperature-rise>. Accessed 20 April, 2018.
- ⁶ Greg Muttitt, "The Sky's Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production," Oil Change International 2016, 6. http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf. Accessed 20 April, 2018; Naomi E. Vaughan and Clair Gough, "Expert Assessment Concludes Negative Emissions Scenarios May Not Deliver," *Environmental Research Letters* 11, no. 9 (2016): 095003, 6. doi:10.1088/1748-9326/11/9/095003.
- ⁷ COP21: Amber Rudd Gives a Press Conference Following the Adoption of the Agreement, 2016. <https://soundcloud.com/carbonbrief/cop21-amber-rudd-gives-a-press-conference-following-the-adoption-of-the-agreement>. Accessed 29 September, 2016.
- ⁸ George Monbiot, "No Fracking, Drilling or Digging: It's the Only Way to Save Life on Earth," *The Guardian*, 27 September, 2016. sec. Opinion. <https://www.theguardian.com/commentisfree/2016/sep/27/fracking-digging-drilling-paris-agreement-fossil-fuels>. Accessed 20 April, 2018. 'Vapourware' is '[a] piece of software or other product for use in computing which, despite being publicized or marketed, either does not exist or has not (yet) been developed commercially.' – "vapourware | vaporware, n.," OED Online, December 2016 (Oxford: Oxford University Press). <http://www.oed.com/view/Entry/243248?redirectedFrom=vapourware>. Accessed February 13, 2017.
- ⁹ Mike Hulme, *Weathered: Cultures of Climate* (Thousand Oaks, CA: SAGE, 2016), 145.
- ¹⁰ John Beck, "Inaugural Lecture: Catastrophic Futures and Applied Fictions," University of Westminster, 5 March, 2014.
- ¹¹ Stephanie LeMenager, "The Aesthetics of Petroleum, after Oil!," *American Literary History* 24, no. 1 (2012): 59–86; here 61. doi:10.1093/alh/ajr057.
- ¹² Patricia Yaeger, Laurie Shannon, Vin Nardizzi, Ken Hiltner, Saree Makdisi, Michael Ziser, and Imre Szeman, "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources," *PMLA* 126, no. (2011): 305–26; here 324. doi:10.1632/pmla.2011.126.2.305.
- ¹³ *Ibid.*, 325.
- ¹⁴ *Ibid.*
- ¹⁵ Imre Szeman, "System Failure: Oil, Futurity, and the Anticipation of Disaster," *South Atlantic Quarterly* 106, no. 4 (2007): 805–23; here 808. doi:10.1215/00382876-2007-047.
- ¹⁶ *Ibid.*, 814.
- ¹⁷ Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (London: Verso, 2005), 1.
- ¹⁸ Sarah Hall, *The Carhullan Army* (London: Faber and Faber, 2008).
- ¹⁹ Emily St John Mandel, *Station Eleven* (New York: Vintage, 2014).
- ²⁰ Anne Washburn, *Mr Burns: A Post-Electric Play* (Oberon Modern Plays) (London: Oberon Books, 2014).
- ²¹ Graeme Macdonald, 'Improbability Drives: The Energy of SF', *Strange Horizons*, 15 February 2016. <http://strangehorizons.com/non-fiction/articles/improbability-drives-the-energy-of-sf/>. N.p.
- ²² *Ibid.*
- ²³ *Ibid.*
- ²⁴ McQuillan, "Notes Toward a Post-Carbon Philosophy," 273.
- ²⁵ Sargisson, Lucy, *Utopian Bodies and the Politics of Transgression* (London ; New York: Routledge, 1999) 104.
- ²⁶ Jameson, *Archeologies of the Future*, 288.
- ²⁷ Merchant, cited in David Pepper, *Modern Environmentalism: An Introduction* (London: Routledge, 1996), 33.
- ²⁸ Ursula K. Heise, "Introduction: The Invention of Eco-Futures," *Ecozon@: European Journal of Literature, Culture and Environment* 3, no. 2 (2012): 1–10.; here 5.
- ²⁹ Alan Weisman, *The World Without Us* (London: Virgin Books, 2008).
- ³⁰ We can think, for example, of the Gustave Doré woodcut 'The New Zealander' (1872), or even the paintings of Claude Lorrain.
- ³¹ Eric Kripke, *Revolution*. Action, Adventure, Drama, NBC 2012.
- ³² Terry Gifford, *Pastoral* (Abingdon: Routledge, 1999).
- ³³ Hall, *The Carhullan Army*, 55.
- ³⁴ Lyman Tower Sargent, *Utopianism: A Very Short Introduction* (Oxford: Oxford University Press, 2010), 33.
- ³⁵ Hall, *The Carhullan Army*, 54.

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- ³⁶ See “municipium, n.”, in “municipal, adj. and n.,” OED Online, December 2016 (Oxford: Oxford University Press). <http://www.oed.com/view/Entry/123788?redirectedFrom=municipal>. Accessed 20 January, 2017.
- ³⁷ Hall, *The Carhullan Army*, 54.
- ³⁸ Deborah Lilley, “Unsettling Environments: New Pastorals in Kazuo Ishiguro’s *Never Let Me Go* and Sarah Hall’s *The Carhullan Army*,” *Green Letters* 20, no. 1 (2016): 60–71; here 67.
doi:10.1080/14688417.2015.1123103.
- ³⁹ Hall, *The Carhullan Army*, 54.
- ⁴⁰ *Ibid.*, 65.
- ⁴¹ *Ibid.*, 105.
- ⁴² *Ibid.*, 127, 104.
- ⁴³ *Ibid.*, 82.
- ⁴⁴ *Ibid.*, 84.
- ⁴⁵ *Ibid.*, 98.
- ⁴⁶ *Ibid.*, 99, 114.
- ⁴⁷ *Ibid.*, 163.
- ⁴⁸ *Ibid.*, 206.
- ⁴⁹ LeMenager, Stephanie, *Living Oil: Petroleum Culture in the American Century* (OUP USA, 2014), 74.
- ⁵⁰ Mandel, *Station Eleven*, 31.
- ⁵¹ Nirmala Nataraj, “Words on Plays: *Mr Burns, a Post-Electric Play*,” *Words on Plays* 21, no. 4 (2015), 2.
http://www.act-sf.org/content/dam/act/2014-15_Season/wop/ACT_MrBurns_WOP_color_final.pdf. Accessed 20 April, 2018.
- ⁵² Washburn, *Mr Burns*, 52.
- ⁵³ *Ibid.*, 9.
- ⁵⁴ Quoted by Mick Broderick, in “Releasing the Hounds: The Simpsons as Anti-Nuclear Satire,” in John Alberti, ed., *Leaving Springfield: The Simpsons and the Possibility of Oppositional Culture* (Detroit: Wayne State University Press, 2004), 259.
- ⁵⁵ Broderick, “Releasing the Hounds,” 245.
- ⁵⁶ *Ibid.*, 252.
- ⁵⁷ Jane Bennett, *Vibrant Matter: A Political Ecology of Things*. Durham (Durham, NC: Duke University Press, 2009), 25.
- ⁵⁸ Mandel, *Station Eleven*, 178.
- ⁵⁹ Washburn, *Mr Burns*.
- ⁶⁰ Mandel, *Station Eleven*, 310.
- ⁶¹ Washburn, *Mr Burns*, 9.
- ⁶² Washburn, *Mr Burns*.
- ⁶³ Jameson, *Archaeologies of the Future*, 288.
- ⁶⁴ *Ibid.*
- ⁶⁵ *Ibid.*
- ⁶⁶ *Ibid.*
- ⁶⁷ LeMenager, “The Aesthetics of Petroleum,” 74.
- ⁶⁸ Darko Suvin, *Metamorphoses of Science Fiction* (New Haven, Conn.: Yale University Press, 1979).