

Dune Rehabilitation in Progress

Gemma Field

Summary

Frank Herbert's *Dune* (1965), a classic of twentieth century American science fiction (sf), describes a fantastic universe where noble families, corporate interests and shadowy, cultish organisations vie for power and monopoly over a fantastic resource, the spice-melange. It is inarguably the power source of the novel's setting and its narrative. The immensely valuable and addictive substance increases longevity and radically expands the capabilities of the human mind – enabling movement, commerce, and communication on an epic scale. Positioning sf as “the literature of cognitive estrangement”, I regard the spice-melange as a discursive platform for oil and the ideological, social and political formations that are inextricable from reliance on black gold, while its deleterious aspects are disavowed or deferred. I argue that this collective response constitutes oil as offshore: the degree to which it is implicated in modern political and social formations is fundamentally understated. On the contrary, it is framed as an object of science and political economy, not as their material basis; a mentality only made possible by a utopian discourse of everlasting, ecstatic innovation; itself a discourse made all the more potent by oil's power and mutability. I argue furthermore that sf is the approach best suited to combat the dominant discourse of oil as an offshore object of our society. Sf's utopian projects and excessive spectacles may serve as a spark to imagine new, alternative energy futures; as the estranging mechanisms of sf allow us to explore our energy present through extrapolations and analogies of new ways of powering human life. My final argument is that, by highlighting the centrality of energy to modern life and culture, sf is framed as an immediate and terrestrial concern in texts such as *Dune*.

Opsomming

Frank Herbert se *Dune* (1965) is 'n klassieke werk van twintigste-eeuse Amerikaanse wetenskapsfiksie waarin 'n fantastiese heelal beskryf word waar adellike families, korporatiewe belange en geheimsinnige, kultiese organisasies meeding om mag en monopolie van 'n fantastiese hulpbron, die speserymengsel. Dit is onbetwisbaar die kragbron van die roman se agtergrond en verhaal. Dié middel is ongelooflik waardevol en verslawend – dit verhoog langlewendheid en kan 'n radikale uitbreiding van die vermoëns van die menslike verstand bewerkstellig, wat beweging, handel en kommunikasie op 'n epiese skaal moontlik maak. Die speserymengsel posisioneer wetenskapsfiksie as “die literatuur van kognitiewe vervreemding” en ek beskou dit as 'n diskursiewe platform vir olie en die ideologiese, sosiale en politieke formasies wat onlosmaaklik deel is van afhanklikheid van swart goud, terwyl die nadelige aspekte daarvan ontken of opsy geskuif word. Ek voer aan dat hierdie kollektiewe reaksie olie as aflandig konstitueer: die mate waarin dit in moderne politieke en sosiale formasies

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geïmpliseer word, is in wese onderbeklemtoon. Inteendeel, dit word geformuleer as 'n objek van wetenskap en politieke ekonomie, nie as hul materiële basis nie; 'n denkwysie wat slegs moontlik gemaak word deur 'n utopiese diskoers van ewigdurende, ekstatische vernuwing, wat opsigself 'n diskoers is wat soveel meer kragdadig gemaak word deur die krag en onbestendigheid van olie. Ek voer verder aan dat wetenskapsfiksie die mees geskikte benadering is om die dominante diskoers van olie as 'n aflandige objek van ons samelewing te bekamp. Die utopiese projekte en oordrewe vertonings van wetenskapsfiksie kan dien as aansporing om nuwe toekomstige geskoei op alternatiewe energie te bedink, aangesien die vervreemdende meganismes van wetenskapsfiksie ons toelaat om ons energiegawe te ontgin deur ekstrapoleringe en analogieë van nuwe maniere om menslike lewe aan te dryf. Ter afsluiting voer ek aan dat wetenskapsfiksie, deur beklemtoning van die sentrale rol wat energie in hedendaagse lewe en kultuur speel, in tekste soos *Dune* uitgebeeld word as 'n onmiddellike en terrestriële aangeleentheid.

Frank Herbert's *Dune* (1965), a classic of twentieth century American science fiction (sf), describes a fantastic universe where noble families, corporate interests and shadowy, cultish organisations vie for power and monopoly over a fantastic resource, the spice-melange. Found only on the desert planet Arrakis, the immensely valuable and addictive substance increases longevity and radically expands the capabilities of the human mind, enabling movement, commerce, and communication on an epic scale. It is inarguably the power source of the novel's setting and its narrative, as heightened awareness compels the actions of all the characters. Coeval with the growth of the environmentalist movement in the United States in the 1960s – signalled by the growing concern over pesticides, air pollution and soil erosion, a proliferation of nature writing and the birth of the anti-nuclear movement – the novel has been widely theorised for its insight into environmental change and preservation.

Utilising Darko Suvin's definition of sf as "the literature of cognitive estrangement", I read the spice-melange as a discursive platform for oil and the ideological, social and political formations that are inextricable from reliance on black gold, while its deleterious aspects are disavowed or deferred. I argue that this collective response constitutes oil as *offshore*: the degree to which it is implicated in modern political and social formations is fundamentally understated, on the contrary, it is framed as an *object* of science and political economy, not as their material basis; a mentality only made possible by a utopian discourse of everlasting, ecstatic innovation; itself a discourse made all the more potent by oil's power and mutability.

This manifested in sf of the first half of the twentieth century through a valorisation of dirty fossil fuels and erasure of their fall-out, and fantastic energy sources of varying degrees of cleanliness. Yet these utopian projects and excessive spectacles may serve as a spark to imagine new, alternative energy futures; as the estranging mechanisms of sf allow us to explore our energy present through extrapolations and analogies of new ways of powering human life. I argue that sf may serve as the approach best suited to combat

the dominant discourse of oil as an offshore object of our society; by highlighting the centrality of energy to modern life and culture, texts such as *Dune* frame it as an immediate and terrestrial concern.

Oil's incomparable rate of EROEI (energy returned on energy invested) propelled humanity into a fantastic modernity, radically altering environments and interactions and fuelling our engines and economies, expanding them in an unprecedented magnitude. But the ever-accelerating pace of "petromodernity" has proven to be extremely detrimental to the natural environment, a fact that many actors who are implicated in petromodernity refuse to acknowledge. Like that of the spice-melange, the ontology of oil in the twentieth century connoted mobility, power, expansion and accumulation: powering the engines that powered human activity. The spice-melange unlocks the boundless potential of the human mind in a manner that echoes the Baconian discourse of science and engineering since the Enlightenment; a utopian promise of infinite improvement which oil has deepened. The "techno-utopianism" that science will solve all our problems (including the ones that science creates) deflects from the looming threat of peak oil and environmental catastrophe, and instead promotes an economic discourse untethered from terrestrial, environmental concerns; a dangerous dependency that *Dune* makes apparent. Moreover, there are clear parallels between the political and economic structures that accompany oil, characterised by core-periphery iniquities, violence and restriction – what has been termed the "energy unconscious" of the substance – and the political economy of the spice-melange. Drawing on the growing field of petrocriticism, the study of oil-based literature and discourse, I will situate *Dune* as mediation on twentieth century American oil ontology, describing the ambivalent addiction in terms of these contradictory valences: a discourse promising utopic accumulation that is at odds with the deleterious politics that accompany it. While oil politics and mainstream oil ontology positions the substance as external to the political and social life of the society that depends on it, enriching a privileged few at the expense of our collective future. *Dune* makes the dangers of techno-utopianism quite clear, as Paul struggles to control the spice and flow of imperial politics. By foregrounding energy as essential cultural and political matter, rather than an object of those discourses, *Dune* depicts the terrestrial nature of oil. My hope is that this will demonstrate the fallacy of the *offshore* discourse and contribute towards the mapping of a new, alternative energy system, one that is not mutually constitutive with anti-democratic politics, neo-imperialism, and exponential material expansion and accumulation.

Foregrounding the background energy source of the text is the methodology of the Energy Humanities. Delineating and deconstructing the politics and poetics of what powers our world to uncover what Brent Ryan Bellamy describes as "the energy sources of culture, and the cultural sources of energy" (2016: 9). Patricia Yaeger calls this intellectual excavation the "energy

unconscious” (2011: 306) of the text. She proposes a new methodology to periodise literature, by the energy sources that enable its production and publication and which feature in its pages. She incorporates Fredric Jameson’s “political unconscious”, reading the text as a discursive utterance beyond the author that reiterates class conflict, enmeshed in a symbolic infrastructure attendant to the modes of production that enable it. The energy unconscious proceeds in much the same way; the representation of energy in the text – stoking a fire, driving a car, exploring the solar system or FTL travel – highlights the social and political conjuncture occupied by the energy source. We are moved to ask what the representation of energy in the text tells us about the politics of the energy sources that powered the production of the text. *Dune* is a petrotext in Yeager’s terms, written in the heyday of American postwar affluence, but the energy unconscious of the spice-mélange echoes the political and ideological formations of oil in other ways that support this reading. The everyday nature of oil, its seamless integration into our lives, makes it difficult to recognise the mechanisms of this “petrodiscourse”: the contradictory valences of oil as a symbol and material component of American economic liberalism – at home and abroad – on the one hand, and a very real substance that cannot be divorced from attacks on human freedom, through political instability and military adventurism, on the other. Oil productions, and attendant oil problems, are structured to be politically *offshore* and ideologically in outer space. It is my hope that outlining the operation of this “petro-discourse” in the text will go some ways to the project of interrogating oil’s pernicious hold over modern life and bringing it back to earth. As “the literature of cognitive estrangement”, I believe sf is the genre best suited to this project.

The ever-present awareness of the mechanics of its world allows the sf text to explore the extrapolative limits of our energy present, doing so it engages with the techno-utopian narrative, mostly to reinforce it through fantastic sources of clean energy. Golden Age and New-Wave sf articulated this through the erasure or redemption of fossil fuels, polemicised in a fossil fuel apologist argument that our exponential energy use in the present is key to finding the fuels to replace it, the “fossil-fuel savings account” (Fuller 1969[2008]: 129) for purchasing future sustainability. This replaces oil and its anxieties through textual sleight of hand and neatly resolving the problem of environmental damage through fantastical sources of clean energy. As Gerry Canavan points out, “by bracketing the negative externalities of oil as soon to be obsolete, and thus unimportant in the larger scheme of human history, all that is terrible about oil ... is thus reimagined as but a temporary unpleasant blip in the long march of progress” (2014: 330).

Science Fiction: Mechanics, Engines and Power Sources

Darko Suvin defines sf as “the literature of cognitive estrangement” (1972: 372), distinguishing its workings from the logic of “mere fantasy” (1972: 378). Central to his thesis is the “novum”, the technological and material differences from the author’s “empirical environment” (Suvin 1972: 373) that allow us to reflect on that environment. In approaching “a set normative system”, our “real world”, with an estranging “new set of values” (1972: 374), sf renders visible and/or destabilises the implicit mechanisms upon which that system is based, through cognitive – by which he means scientific – reading and writing. In sf texts, that cognitive element is “both underlying attitude and dominant formal device” (Suvin 1972: 375): in recognising the familiar in the estranged, the reader constructs a bridge to the extrapolated or analogic frame of the fantastic universe.

But the “science” part of sf has proved troublesome: Adam Roberts notes that “science is just as frequently represented in the sf novel by pseudo-science, by some device outside the boundaries of science that is none the less rationalized in the *style* of scientific discourse” (2006: 8, emphasis in original). If the “science” of sf is only tangentially linked to the prescriptions of the material discourse of “science”, this suggests that the scientific element of sf lies elsewhere.

Whereas other fantastic literature “claims to explain once and for all the essence of phenomena”, or eschew explanation entirely, sf posits them “first *as problems* and then sees where they lead to” (Suvin 1972: 375, emphasis mine). I believe that sf is not a checklist or an essential narrative, but rather a methodology for approaching alterity and the future, which, like science, is predicated on falsifiability and skepticism, but powered by possibility and creativity. As Farah Mendelsohn remarks, sf is “less a genre”, with concomitant tropes and conventions, “than a conversation” (2003: 1), with and about the things we don’t know. The working definition of sf that this inquiry will proceed from is that the “essence” of the canon lies in its interest in – but not necessarily adherence to – the normative values, concerns and methodology of empirical investigation of the material world.

As the Energy Humanities and petrocriticism are relatively recent fields in the academy, the small but burgeoning study of petro-sf has also emerged, positioning oil as foundational to modernity and its continuation; our independence from it seems inconceivable yet we know that the end approaches. Sf’s anticipation of that end provides a useful way of mapping historical and contemporary conceptions of the oil crisis through an oil-based reading practice.

Using the iconic opening chase in *Star Wars* as a discursive springboard, Graeme MacDonald positions sf as the medium best-suited to imagining the crisis of petromodernity, reading the politics of “future combustion aesthetics”

(2014: 113) to demonstrate oil's cultural power. The image of roaring thrusters and gleaming, stream-lined metal of the Star Destroyers "confirm that entire galaxies are traversable, made reachable and accessible by the imposition of astounding, powerful and commanding modern technology"; within a matter of seconds, "worlds, peoples and multiple species are explored, traversed, and traversed again, in all manner of vehicular transportation" (MacDonald 2014: 113). With the benefit of forty years of hindsight – and cognisant of the twentieth century economic history of oil – this image of vehicle-based movement seems overblown and gaudy – the sound effects in space most of all – a vainglorious, almost fetishistic gesture to twentieth century American motor culture. The "grandiose expenditure" of space opera may highlight the energy expended to create such a world and go some way to remedying our collective failure to "conceive energy as a matter for culture as much as it is cultural matter" (MacDonald 2014: 114, 115); sf provides the mechanisms for estranging our habitual energy use so that we might more realise the depth and breadth of oil's role in everyday and political life. Sf, says MacDonald, "allows us not only to realise the nature of our long and on-going addiction to petroleum but also the manner in which we have continually sought to occlude or sublimate the monstrous nature of our petromodern fantasy in order to drive an increasingly unsustainable petrolic life ever onwards" (2014: 115). By excavating *Dune*'s buried energy unconscious and concomitant technoutopian narrative, I hope to add to the growing body of petro-sf scholarship; using this text to bring oil's ideological and political mechanisms, globally and in our everyday lives, to light. These phenomenological interjections/injections of future fuels may provide the initial spark to conceptualise alternatives in the present.

The Political Estrangement of Oil: Avoiding Mainland Entanglements

Drawing on the burgeoning field of petrocriticism, I will detail the manner in which the global infrastructure inevitably accompanying oil renders it as an offshore object; estranging the extraction and consumption of the substance from the environmental degradation and political oppression that make petromodernity possible, and estranging the material wealth generated from oil from democratic revenue streams. This will demonstrate how the "energy unconscious" of oil is implicated not only in iniquitous global power structures but that those structures obscure or disavow the human and environmental consequences of petromodernity in a mutually perpetuating cycle.

The project of rendering oil as offshore can be fitted into a larger trajectory of people moving further away, geographically, socially and politically, from the sites of energy production, which become increasingly privatised as a

result. Timothy Mitchell's *Carbon Democracy* locates oil at the centre of the infrastructure of Western democracy and despotism elsewhere. The modern world, Mitchell argues, can be explained through the history of carbon. While previous energy regimes based on renewable sources were low in energy output and required more space to support fewer bodies when burned, the high energy-concentration of carbon "made available stores of energy equivalent to decades of organic growth and acres of biomass in compact, transportable solids and liquids" (Mitchell 2011: 15). This radically transformed collective life: allowing more people to occupy less land, lifting energy inhibitions on growth; releasing people from sites of agricultural production and fuelling urbanisation and industrialisation in the eighteenth and nineteenth centuries. The organisation of coal – its extraction, conveyance and consumption – allowed otherwise inconsequential labourers to disrupt entire regions by withdrawing their labour. The prominence of oil in the twentieth century changed this. Oil extraction requires a smaller workforce relative to the amount of energy it generates, above ground and under closer supervision, and takes place primarily in isolated regions, reducing the visibility and culpability of its labour relations; it is light and versatile enough to be shipped across oceans, it in turn fuels the shipping container industry. All of this "reducing the ability of humans to interrupt the flow of energy" (Mitchell 2011: 36) Mitchell argues "these changes in the way forms of fossil energy were extracted, transported and used made energy networks less vulnerable to the political claims of those whose labour kept them running ... the flow of oil could not readily be assembled into a machine that enabled large number of people to exercise novel forms of political power" (Mitchell 2011: 39) as coal had. *Carbon Democracy* demonstrates the fundamental role carbon has played in producing modern social and political formations; civilisation and settlement have expanded over time and space, with concomitant increasing energy demands for increasing production; as the production of energy becomes increasingly undemocratic.

When oil is literally offshore it is also estranged in other ways that perpetuate the process by which our collective natural inheritance is translated into private profits and degraded conditions for life. In *Global Shadows*, James Ferguson compares the historical descriptions of the socially "thick" extractivist model of the mining towns along the Central African Copperbelt with a "thin" operation such as Angola:

Industry insiders often compare the "clean" Angolan set-up (where offshore oil is loaded onto tankers *without any mainland entanglements*) with other contexts where they are dragged into costly and politically damaging disputes over environmental damage, [and] demands for social services ... [Not] nation-states developing national resources, but enclaved mineral-rich patches, efficiently exploited by flexible private firms with security provided ... by specialised corporations while the ... nominal holders of sovereignty certify

the industry's legality and international legitimacy in exchange for a piece of the action.

(2006: 204, emphasis mine)

Rob Nixon describes this in terms of “slow violence”. This is not immediate, spectacular and obvious violence, but “a violence that occurs gradually and out of sight, a violence of delayed destruction that is dispersed across time and space, an attritional violence that is not typically viewed as violence at all” (Nixon 2013: 2). Invading a country with artillery and military personnel, launching missile strikes or dispersing chemical weapons, are actions easily labelled as violent – such as the Biafran and Vietnam Wars, where the damage done to bodies could be readily linked to military imposition – and are duly bemoaned and decried as such; they have a beginning and an end. But the long-term consequences of Agent Orange and British Petroleum on rural Vietnam and the Niger Delta – poisoned soil and failing crops; undrinkable water and unbreathable air; birth defects and cancers – that have fundamentally assaulted human and ecological matter are discounted and disregarded; time and place severs consequences from their causes.

The paradoxical “resource curse” that blights oil-exporting nations illustrates the occluding and estranging political mechanics of slow violence in the Global South. The paradox bestows bountiful mineral wealth on a polity, but undiversified dependence on its revenue weakens the rest of the economy and encourages rent-seeking, as the “highly concentrated revenue stream is readily diverted away from social and infrastructural investments and into *offshore* bank accounts” (Nixon 2013: 70, emphasis mine). Political power is predicated on “controlling the central resource [rather than] on strengthening civic expectations”; consequently, “national cohesion and stability may be jeopardized by exaggerated inequalities”: oftentimes creating a “geographical gulf between the resource-rich enclaves and the remainder of the country” (Nixon 2013: 70) and entrenching existing class, race, and gender dysfunctions disparities.

The resource wealth of nations like America does not disprove the thesis; on the contrary, industrialised nations actively perpetuate the unequal terms of exchange, by supporting (almost inevitably) despotic political formations in Africa, Latin America and the Middle East that “co-operate with the skewed terms of resource extraction” and undermining local attempts to move away from vampiric extraction (Nixon 2013: 70). In tangent with state-sponsored military adventurism, attempts to cultivate democracy in the Global South are also hindered by multinationals, which enjoy “disproportionate influence over the terms of extraction” (Nixon 2013: 71) and local governments. The relatively lax legislative conditions that these multinationals demand as their due for bringing business to politically and economically vulnerable countries; engenders the exploitation and degradation of human and natural life as the price of progress and participation in the global economy. “These multiple practices of economic and imaginative

disconnection” allow for the plundering of communal natural resources by a few while excluding and exploiting the many. Multinationals, industrialised states and local collaborators “treat a nations’ natural bounty as if it were neither for nor of the nation”, framing it instead as “a kind of *extraterritorial* gravy train” (Nixon 2013: 72, emphasis mine). The problems of oil are always someone else’s problems, but the substance is also politically uncoupled from terrestrial concerns in other ways that obstruct democracy and environmental justice.

Surveying recent petrocriticism it quickly becomes apparent that not only is oil implicated in anti-democratic political configurations across the globe that has cataclysmic consequences for human and ecological communities, these political formations actively dissemble the substance as external to it; the estrangement of oil dovetails in a kind of “conjoined ecological and human disposability” (Nixon 2013: 4) that makes redress almost impossible for small, scattered communities in the Global South against multinational and political Goliaths. Slow violence is marked by displacements – temporal, economic, geographic, rhetorical and technological – that “simplify violence ... [and] smooth the way for amnesia”, minimizing the human and environmental costs of “turbo capitalism” (Nixon 2013: 7). The slippery and unspectacular nature of slow violence poses representational and strategic challenges; Nixon posits that the aesthetic response to the crisis “entails devising iconic symbols that embody amorphous calamities as well as narrative forms that infuse those symbols with dramatic urgency” (2013: 10); to highlight the “representational challenges and imaginative dilemmas posed not just by imperceptible violence but by the imperceptible changes whereby violence is decoupled from its original causes” (Nixon 2013: 11).

Oil as Infinity Drive

The structures by which oil is rendered offshore are discursive as well as political. The material properties of crude oil enabled many twentieth century innovations that increased the speed and depth of human expansion: improving quality of life through a consumer economy predicated on indefinite accumulation and exponential expansion. Thus it is directly implicated in the troublesome discourse of techno-utopianism: even if oil is running out, we will be able to manufacture a substitute in line with existing capitalist mechanics, without having to interrogate or alter the habits that led us to crisis.

The material properties of oil underwrote this in several ways. Seemingly abundant and inexpensive, its declining price meant that, while exponential quantities of energy were consumed, the cost of energy or its environmental consequences “did not appear to represent a limit to economic growth” (Mitchell 2011: 125). The derivatives of petroleum assured abundance in

other areas too: the advent of synthetic fertiliser after the Second World War dramatically increased agricultural yields and the human population skyrocketed, and plastics promised limitless mutability and “a direct answer to resource depletion” (Mitchell 2011: 141). Today, a world without plastics seems inconceivable; indeed, given its inorganic molecular structure, it is almost impossible to avoid this markedly unnatural form of human debris that is so casually tossed aside. By radically expanding the possibilities of how fast and how far we can go, the paradigm of what human ingenuity could realise was radically shifted by the advent of oil. Humankind could never have reached the moon powered by lesser engines, and before the seventeenth century, the stars would never have been considered reachable with the fruits of human labour at all. “From the possibility of movement and travel to *expectations* of the capacity to move and interact” (Szeman 2013: 147), the apparently limitless capabilities of oil is closely linked to our society’s sense of mobility and momentum, and our faith in our capacity for scientific and social development.

We have always considered oil to be an external element that affects our cultural, economic and political formations, a “material resource squeezed into a social form that pre-exists it” (Szeman 2013: 146). But oil is inextricably ingrained, materially and ideologically, in that form: influencing the shape of human settlements, the manner and scale of food production, and the fundamental nature of human infrastructure and interaction, to such an extent that Imre Szeman insists that we should acknowledge modernity as “petromodernity”.

But the widespread and fundamental underappreciation of the depth and breadth to which modernity has been shaped by oil is a dangerous fallacy. The ostensibly endless fruits of the scientific mind, coupled with a judicious application of material wealth and technology, have produced “a tendency to believe that wind, solar, geothermal and nuclear energy could generate the kilojoules *we have come to expect* from fossil fuels...while retaining the quality and form of life that many (though far from all) now enjoy” (Szeman 2013, 146, emphasis mine). The expectation of a painless transition from oil to a new fuel source obfuscates the truth that fossil fuels inform our expectations for energy. Our fears are washed away by the promise of “scientific innovations that are in perfect synchrony with the operations of the capitalist economy: problem solved, without the need for radical ruptures or alterations in political and social life” (Szeman 2007: 813). Our cleverness and creativity – with a healthy dose of material wealth – will surely resolve the problems we have created, and in a distinctly capitalist fashion. In consequence, oil is divorced from the economic mechanics that make it possible; capitalism is positioned as the way to solve oil’s problems, its role in creating them comfortably sidelined.

Above and beyond the political formations that render oil as external to society, formations that obfuscate democracy and environmental justice in

order to perpetuate unequal terms of global exchange and transform communal natural resources into private wealth, oil is also the centre of a hazardous discourse that, discounting limit and scarcity from its operation, threatens all life on earth. Its chemical components enabled multifold innovations, expanding our material and intellectual limits and ushering in a discourse of propulsion and prosperity that characterises petromodernity. However, positioning oil as “just the caloric stuff that happened to propel modernity” and denying its role as “an essential component of social, cultural and political form” (Szeman 2013: 148) means that neither modernity nor oil are adequately interrogated for their roles in environmental and humanitarian injustices. The denial of oil’s essential role in shaping modernity, coupled with utopic scientism, results in a dangerous teleology; “the bad utopianism of hope in technological solutions to the looming end of oil” (Szeman 2007: 814), that fails to take into account that the scarcity of oil is a direct result of the discourse of technological solutions.

Bringing Oil Back to Earth

Offshore oil facilities are out of sight and out of mind: the physical distance consumers enjoy from sites of energy production reduces the understanding of how deeply consumer society is dependent on it for social and material advantages of modern life. Hedley Twidle notes that “from fuel to shelter to healing to plastics to infrastructure – the petro-economy of the twentieth century permeates every component of our lives” (2017: 78): the chemical components of crude oil separated through fractional distillation to provide gasoline for cars, kerosene for aircrafts, naphtha for industry; diesel oil for heavy motor-vehicles, fuel oil for ships and power stations, domestic gas for households, and the bitumen residue to tar roads and roofs.

In political economy, the discourse rendering oil as offshore is marked by legal loopholes and administrative circumventions that estrange economic and political energy and power from terrestrial, public oversight. It is instrumental in perpetuating the distance Rob Nixon describes as slow violence, by which the damage done by oil capitalism is rhetorically and temporally decoupled from its causes. Oil is pushed offshore by politics, but a utopic faith in modern science propels it into discursive outer space. The innovations of the oil century produced an ideology of mobility, momentum and perpetual expansion running through twentieth century American discourse from JFK’s rationale for the moon landing, to Neil Armstrong’s small, great steps, to the marketing of sports cars and off-road vehicles. The expectations we have of oil are not understood as such and the resultant techno-utopianism, argues Imre Szeman, further obstructs efforts to save the environment and move away from oil politics. In viewing oil as external to modern life, not as the terrestrial basis of it, we imagine that we can exchange

it for another, equally potent source. The crisis of oil is comfortably deferred, projected into and onto the futurity and fantasy of future-space – there will be no need to interrogate or alter existing patterns of consumption, because the technological innovations of oil-based consumer capitalism will resolve them.

The Great Pacific Garbage Patch, an archipelago of accumulating plastic debris, reminds us that ultimately, casting things offshore is a futile gesture. It serves as a stark reminder of how we are putting our foot on the gas on the highway to hell; a crude dialectic of our ecological entropy and nature's fury, where the eventual synthesis is the end of life on earth. But images of starving polar bears, mountainous trash piles, and oil-slicked penguins have yet to provide the shock needed in order to realise radical change. This substance – on the one hand, as local as the corner shop; on the other, global and fantastic – “fuels the fantasies of limitless expansion in such a way that has proved difficult to challenge or counteract” (Szeman 2013: 152). Consequently, one of the greatest obstacles for any aesthetic engagement with oil is “the apparent capacity of the substance to absorb critique in much the same way that it absorbs light” (Szeman 2013: 155). Because oil is so deeply in our political structures and our cultural norms, any aesthetic contact with oil risks failure by slipping into didacticism at the impasse that is the sheer enormity of the crisis at hand, or deferring the question altogether. Szeman suggests we might circumvent this by “trying instead to make more fully sensible the shape and form of the world to which oil gave birth ... [and] considering the ways in which oil is named and framed in aesthetics ... to reposition it in our daily practices and so create new social imaginaries” (2013: 156).

If exploring the energy unconscious of a text involves interrogating the role of energy in the narrative and setting, then sf always-already embodies this practice. The “freedom and responsibility of its speculative and imaginative verisimilitude” (MacDonald 2014: 117) must account for the engine driving its fantastic narrative, and in the manner that we have defined above. Sf understands energy as literary and cultural material to a greater extent than most realist fiction, its visions of futurity all the more potent. Having to account for its eschewal of realism in a manner in line with ‘science’, sf has had to ‘invent’ all manner of “facilitating devices requiring a *heightened sense of enablement*” (MacDonald 2014: 117, emphasis mine).

The representation of fuel in *Dune* offers that intellectual power-up. By positioning energy as integral to the matter and mechanics of human society, the text challenges the dangerous offshore discourse of oil. As the fuel of personal and political movements, the spice-melange drives the narrative and the actions of the characters, including the young duke Paul Atreides. When House Harkonnen, the Atreides' sworn enemy, kill Paul's father Leto, he finds refuge with the Fremen of Arrakis. Themselves victims of the Harkonnens' brutal spice-harvesting practices, they embrace Paul as a messianic warrior and teach him the ways of the desert. The novel chronicles

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Paul's journey to actualisation as the Fremen messiah, guided by increasingly unstable prescient visions guided by the spice-melange.

The representation of Paul's first experience of the spice shows its apposition with vitality, movement and transcendental potential, in a manner that recalls the fuels of our own age.

Abruptly, as though he had found a necessary key, Paul's mind climbed another notch in awareness...as though he existed within a globe with avenues radiating away in all directions...yet this only approximated the situation.

...

He knew names and places, experienced emotions without number, reviewed data of innumerable unexplored crannies. There was a time to probe and test, but no time to shape.

...

I have another kind of sight. I see another kind of terrain: the available paths.

The awareness conveyed both reassurance and alarm – so many places on that other kind of terrain dipped or turned out of his sight.

(Herbert: 226-227)

Much like oil, the spice-melange is wrapped up in a symbolic economy of distance and vitality, of knowledge, mobility and connectivity, ample and seemingly without end. The analogy of a “necessary key” to unlock potential and transcend mundane consciousness recalls oil's sweeping impact on our way of life: it smacks of treasure to be unlocked, but a phrase loaded with utility, reminiscent of firearms and automobiles. The radical potentiality that oil promises is also evident in the spice, like tarred roads and the means to use them the *mélange* offers countless “avenues radiating away in all directions” and “innumerable unexplored crannies” of possibility, yet at the same time Paul is contained and perhaps constrained inside his “globe” of subjectivity. He may have a unique “kind of sight” and see “another kind of terrain” but the description of that vision is marked by uncertainty: from his position/perspective other places on that landscape “dipped or turned out of his sight”, suggesting that Paul, or those places, or both, are by no means stable. His experience of abundant information – “names and place ... emotions without number” – is overwhelming for Paul. He is the Kwisatz Haderach, “the one who can be many places at once”, with his “trinocular vision” (Herbert: 341, 512) of past, present and future, can gather data, can “probe and test” and apply his brilliant mind, but even Paul admits he has “*no time to shape*” (emphasis mine) what his unique observation reveals.

This suggests the volatility of the substance and its usage. Paul's inner struggle with his prescient vision illustrates the dangers of becoming untethered from reality that such a sense of limitless vision and movement entails. Seeing the universe through his “trinocular vision” has damaged his other sensory powers to the point “that past and future and present mingled

without distinction” in his mind, and demonstrates that the vision offered by the spice is also flawed. What he describes as a “constant necessity” of engaging with “the prescient future as a kind of memory”, gradually causes him to doubt “his position in time” (Herbert, 211, 438, 440). Paul’s early experiences with the spice illustrate the substance’s connotations of mobility, progress, and knowledge, but this extract also hints at addiction and the dangers of overuse., its buoyancy risks becoming untethered from material reality.

As MacDonald says, “oil might not appear directly in visions of the future, but its spectral presence is traceable ... in energy substitutes or interpretive extrapolations” (2014: 123). It is my belief that *Dune* demonstrates this sentiment: even in a universe as epic and sophisticated as Paul’s, even with all the seemingly boundless power of the human mind, a political/energy hegemony based on neo-imperial force and monopolistic, exponential expansion will run into the problems of scarcity and limit.

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Gemma Field
University of Cape Town
Fldgem001@Myuct.Ac.Za