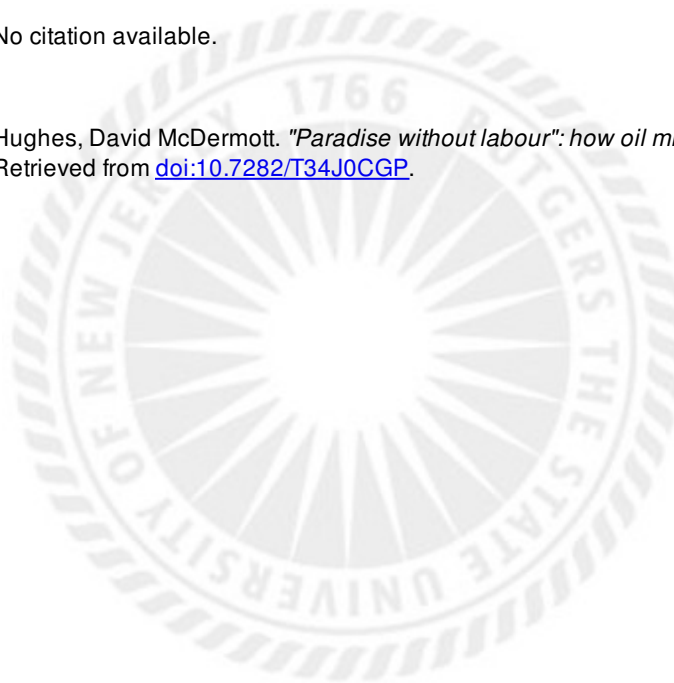


"Paradise without labour": how oil missed its utopian moment

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Paradise without labour”: how oil missed its utopian moment

by

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“[I]nventions and organization which ought to have increased leisure, by producing the necessaries with little labour, have only ... degraded labour and diffused luxury.”

George Santayana (1922:192)

Oil overcomes the most radical political opposition through a surprising banality. Here and there, the industry encounters local, limited protest regarding befouled coastlines and damaged fisheries. Yet, the wells keep pumping, and even consumers well aware of carbon emissions and climate change continue buying. Never has a commodity caused so much harm while provoking so little antagonism. The oil barrel, it would seem, wears a Teflon coat. Of course, oil-dependent corporations and publics prefer business-as-usual for a host of commonplace reasons. Petroleum and other hydrocarbons make quotidian life comfortable, convenient, and sometimes affluent. Even individuals and groups prepared to forego, say, gasoline face a collective action problem: continued consumption by others may dilute the effect of this small sacrifice down nearly to zero. Finally, the commodity is hard to see. Pipelines and tanks conceal oil, gasoline, and natural gas. Spills on land and in water often provoke disgust and resistance, but only a tiny fraction of global production leaks in this way. The far larger *spill*

everywhere – of combusted hydrocarbons into the atmosphere – generates only odorless wisps and fumes. As this reasoning goes, publics appreciate oil’s benefits too much and its costs too little to oppose it. These explanations from self-interest and aesthetics are true but incomplete. They overlook the entire field of cultural value and ideology. In this regard, oil suffers from a deficiency which gives it strength. Oil companies and states lack ambition. From the beginning, they have striven for what Daniel Yergin refers to as the “prize” of global power and domination (Yergin 1991). To Yergin, such hegemony seems a sufficiently exalted goal. It surpasses the usual transactions of contemporary capitalism, an era whose economics derive from petroleum in any case (Mitchell 2011). Consider, however, the distance between the prize and the transcendent hopes of emancipation, virtue, love, personal and social wholeness. In these relative terms, oil is mundane rather than romantic, and that crassness gives little traction to the critic. Exposés of oil’s planetary cost hardly disillusion or anger the consumer. He or she had few illusions to start with.

This chapter attempts to “supply an illusion toward the possibility of its inversion.”¹ I illustrate the unhelpful mundaneness of oil through a counter-factual: a period when oil almost, but not quite, gained a utopian meaning. It happened – or, rather, did not happen – at the very beginning of the industry on the Caribbean island of Trinidad. In the middle third of 19th century, three events occurred in close proximity and in a sequence that logically *should have* associated oil with freedom in an enduring fashion. First, Britain emancipated the slaves in its West Indian sugar colonies, including Trinidad, in stages between 1834 and 1838. Second, utopian socialists launched an experiment in 1846 – with Trinidad as its base – to replace all labor with solar-, wind-, and wave-powered machines. On a failing commune in nearby

¹ I am grateful to Hannah Appel for this artful phrase.

Venezuela, they envisioned a world without the degradation of work, a “paradise without labor.” Third and finally, in the 1850s, entrepreneurs in Trinidad discovered a process to distill asphalt – of which the island holds the world’s largest natural deposit – into kerosene and petroleum. Promoters advertised these products as better substitutes for coal in the boilers that drove ships and processed raw sugar cane. Taken together, these events suggested that hydrocarbons could replace human labor. Indeed, one man linked all three processes of the chain. Conrad Friedrich Stollmeyer, born in Ulm, Germany in 1813, became an abolitionist, directed the utopian scheme in Venezuela, and later managed the asphalt deposit in south Trinidad. In oil, Stollmeyer found the means not only to riches but, much more importantly, to the paradise without labor. Yet, one he started he acquired he the former, he longer aspired to the latter. In Port of Spain, Stollmeyer observed freed slaves *not* laboring, enjoying their leisure, and he was appalled. His sentiments flipped entirely: work became the virtue and laziness the vice. Stollmeyer constructed oil as merely a means to economic advancement – a fall from the grace that lay within its grasp. By this narrow margin, oil missed its utopian moment. Even today – when oil is produced globally and very little in Trinidad - few credit oil and gas with their most uplifting achievement: a massive, Emancipation-scale liberation from toil.

Commodities, hope, and utopia

Some commodities inspire hope more than others, and such hope enables later disappointment. Arjun Appadurai refers to the “intercalibration of the biographies of persons and things” (Appadurai 1986:22). As gifts circulate, they build the value of persons. In classic anthropological descriptions, the Kula Ring and the potlatch convert boys into revered men. Goods can also destroy men. Andean miners appease the Devil with a gift which becomes tin.

They extract it at their peril and for the benefit of the capitalist. “The circuit,” Michael Taussig writes, “ensures barrenness and death instead of fertility and prosperity.” (Taussig 1980:224). Among the affluent, the diamond holds immense power. Conventional men propose with a polished stone whose durability implies permanence, fidelity, and a love that will not weather. Women glisten and glitter in diamonds whose reflectivity implies purity and nobility of spirit. Here is what Purnima Makekar describes such as the “commodity affect”: “the conjunction between erotic desire and the desire to consume” (Mankekar 2004:408). Such fabricated “sensuality” rests on a weak foundation (Haug 1986:16). One can easily falsify it, as has the “blood diamond” campaign in tracing gems to sites of civil conflict and slave labor. In that case, diamonds imply devastation and death. Once enthralled by diamonds, many consumers now boycott them out of moral revulsion. Cigarettes have undergone a similar inversion of sentiment. Until perhaps the 1970s, smokers associated tobacco with sophistication, elegance, and even health. Smoke was thought to kill lung bacteria while it wafted tantalizingly into and out of woman’s mouth. Medicine shattered this illusion. Now, especially in the US, cigarettes increasingly connote ignorance, incompetence, and disease. Admirers of a commodity, in other words, seem prone to reevaluate it. Extreme romance may flip to extreme antipathy, as if the commodity itself betrayed a sacred trust. Perhaps, the entwining of the thing with the body – the sharing of biographies and, indeed, molecules – contributes to such an identification. If what one breathes or wears does no longer makes one beautiful, does it now make one ugly? Some commodities seem to raise this question continually, crowding out the middle ground.

Among industrial fuels, coal has oscillated similarly between poles. Its symbolic and material qualities suggest the most expansive hopes and disappointments: utopia and dystopia. In the former sense, a London weekly nearly worshipped coal in 1850:

“Man may hereafter live not merely a savage life, but one civilized and refined with the sense of a soul within – of God in the world and over it and all around it – whereof comes man’s hope of a future life beyond his presence here. Thus upward and thus onward forever.”²

The passage contains notions of the civilizing mission and its successor – development – but the sentiments far exceed these narrow bounds. Coal, in this belief, both manifests the will of the Creator and brings its consumers closer to Him. And, more tangibly, coal heated London, passing its energy to the bodies of an expanding, grateful population. If one defines utopia as “a dramatically different form of society” (Claeys and Sargent 1999:1), then 19th century observers clearly saw this revolutionary potential in coal. Utopias are fragile, however; the fantasy degrades easily into a nightmare. And, so, in the 20th century, views of coal have more often associated it with dystopia than with utopia. Richard Llewellyn’s 1939 novel *How Green was my Valley* narrates the rise and fall of the Welsh coal industry. Like an animate force, coal kills men in mines and despoliates the landscape. “By prayer and good thought you will conquer all enemies,” advises a reformer, “And your greatest enemy now is coal. You must become stronger than coal” (Llewellyn 1939:154). In the US, the coal industry now explodes mountaintops to find the substance. Residents of Appalachia view the destruction as worse than ecologically ruinous: it is ungodly. Kentuckians for the Commonwealth, an activist group, quotes from the Old Testament prophesy of a New Jerusalem, where “They shall not hurt nor destroy in all my holy mountain...”³ Worse than sin, coal – in this criticism – amounts to an abomination. The utopian heaven-on-earth has descended into blasphemy.

² “The true story of a coal fire.” *Household Words* 1 (1850), pp. 29-30; quoted in Freese (2003:11). Charles Dickens edited this periodical.

³ Johannsen, et al (2005:iii). The passage is from Isaiah 11:9.

Oil occupies the wide space between these poles. Its symbolic “lore” and degree of recognition depend on geographical and historical contingencies (Leslie and Reimer 1999:416). Nearly always, however, oil falls short of utopia. “The concept of oil,” writes Ryszard Kapuscinski on Iran, “expresses perfectly the eternal human dream of wealth achieved through lucky accident” (Kapuscinski 1982:35). On Venezuela, Fernando Coronil narrates, “Petroleum came to symbolize uncontrollable powers ... as ‘the Devil’s excrement’” (Coronil 1997:353). In Nigeria, Michael Watts describes oil as a “mythic commodity” disseminating a “phantasmagoria of petro-commodification” and an “El Dorado effect” (Watts 2001:189,193,205). Finally, and also in Nigeria, Andrew Apter associates oil with a “‘seeing-is-believing’ ontology that disguised the absence of productive base” (Apter 2005:14). In each instance, oil acts as an extraordinary wealth-making machine, with supernatural powers. Oil is the genie in Aladdin’s lamp – but no messiah. The fantasies described by these social scientists only a fill a glass half way: they do not unlock heaven, a Garden of Eden, Plato’s *Republic*, communism, messianism, or any other model society discontinuous with pre-existing trends. Oman would seem to violate this generalization. There according to Mandana Limbert, official discourse labels the oil-boom years as a “Renaissance.” Religious miracles have occurred – but not because of oil. The wise rule of Sultan Qabus has rejuvenated Omani life. Limbert refers to a “downplaying of oil as the *source* of the dramatic transformations” (Limbert 2008:31-32; emphasis in original). “Oil,” she continues, “...provides few tactile reminders of its presence and is often experienced as wealth” (Ibid:36). At root, those who celebrate oil frequently emphasize its exchange value rather than its use value. Oil means money (Rogers 2012:287). Or, as in the case of the automobile, oil loses its meaning amid the gadgets that it powers (cf. Grandin 2009; Lutz and Fernandez 2010:13ff). Cars have transformed the United States, but

drivers identify more with the wheels than with the fuel. When it could claim credit for utopia, oil goes missing in action.

Among novelists, too, oil lurks at the threshold of invisibility. Amitav Ghosh diagnoses a dearth of “petro-fiction” and “the muteness of the Oil Encounter,” as he terms the social shifts accompanying petroleum (Ghosh 1992:30). Implicitly, Ghosh apologizes for his own *The Circle of Reason* (1986), much of which takes place among migrants to a fictional Gulf emirate. The characters never see wells, rigs, or drillers, let alone petroleum itself. They built the “New City [which] appeared overnight, like a mushroom. The Oilmen forgot all about a new Oiltown, for the whole country was their Oiltown now” (Ghosh 1986:263). Oil alone, however, hardly figures in Ghosh’s social criticism. The new shopping collapses even before opening, and the main protagonist – buried alive – emerges to rid his shantytown of money. As Peter Hitchcock argues, “oil’s saturation of the infrastructure of modernity ...[obstructs] its cultural representation” (Hitchcock 2010:81). This absent presence runs through Abdelrahman Munif’s *Cities of Salt* (1994), considered the greatest oil novel written after World War II. Narrating the American expropriation of Bedouin and Arab lands, Munif mentions petroleum directly on three times (Ibid:459,644,618). Again, the oilmen – and women – bear the greatest symbolic charge. They throw a party on the beach that stuns the locals: “Sorrow, desires, fears, and phantoms reigned that night. Every man’s head was a hurricane of images, for each new that a new era had begun” (Ibid 221). Dystopia nearly breaks out, but Munif’s writing skirts around any such programmatic prediction or description. These novels fall within the genre of “petro-magic-realism”: a literary mode that conveys the good and bad potentials of oil through its own illusions (Wenzel 2006:456-57; Chambers 2006). Characters live within out promises and disasters of oil – without ever actually drilling, combusting, or even seeing it. The Oil Encounter

is more surreal than real. If Ghosh and Munif give oil any role, it is purely symbolic, lacking the materialism necessary for full-throated dystopia or any form of utopia.

Upton Sinclair is the exception that proves the rule. *Oil!*, his 1927 novel, describes the California oil business in palpable detail – and then denounces in dystopic terms. James Ross and his son, Bunny drill in Paradise, California. Oil makes its appearance as “the great black jet that came rushing up out of the ground, a couple of hundred feet into the air, with a sound like an endless express train going by” (Sinclair 1927:159). This abundance could fuel a utopia. Sinclair thought in those terms: he already founded the Helicon Hall Colony in New Jersey, an agricultural commune destroyed by fire in 1907 (Hitchcock 2010:92). But, Paradise soon becomes its antithesis. Even as the blow-out is in progress, Bunny imagines his oil field in only conventionally lucrative terms: “it was going to yield him a treasure that would make all the old-time fairy tales and Arabian Nights adventures seem childish things” (Ibid:160). The resource does promote the Ross family from wildcatters to an oil major. Bunny, though, notices its effect upon the workers, earning far less than their labor is worth. His friend Paul becomes a union organizer and then a Communist, seeking to “awaken the slaves” in the oil fields (Ibid:432). Later, Sinclair declares in an almost editorial voice, “workers in big industry are wage slaves,” and, with the radio, industry is the “basis upon which to build the greatest slave empire in history” (539). Meanwhile, Bunny founds a socialist community and school and loses his fortune. The Paradise field vanishes in “enormous oceans of flame rolling over the earth” (500). Sinclair’s petrofiction brings together the material and symbolic qualities of oil - in ways that rupture the flow of pre-existing flow of events. And it is all downhill from there. Sinclair closes *Oil!* with a “muckraking” diatribe against capitalist greed, “the black and cruel demon... which roams the earth, crippling the bodies of men and luring the nations to destruction by visions of

unearned wealth, and the opportunity to enslave and exploit labor. THE END.” Thus, on the ultimate question of slavery – the most salient index of revolution in the entire New World – oil fell on the wrong side of history.

This judgment runs directly counter to historical potential and to some historical fact. Consider the use value of petroleum. As it burns, oil provides power. In physical terms, the energy density of oil and gas – their ability to do work packed into a small volume – exceeds all non-nuclear alternatives. One US gallon of oil contains the energy equivalent of 98 metric tonnes of organic material.⁴ Available in liquid form, this concentrated combustibility can lift, propel, and heat nearly anything nearly anywhere. In lifting coal, for instance, oil-powered machines “emancipate[d] a race of galley slaves, the stokers” (Mumford 1934:235). Here, hydrocarbons have alleviated toil. In other sectors, producers have employed oil to “create new powers of action, greatly extending the physical limits of human and animal power” (Mitchell 2011:66). Generally, liquid hydrocarbons gave owners of means of production a choice: produce the same amount in shorter work day, or produce much more with the same work day. Whenever feasible, manufacturers and farmers took the second option. Hence, millions of laborers still work long hours with few holidays – and are now exposed to hydrocarbon-derived pollution as well. Still, hydrocarbons have changed the quality of millions of working days. The hours take less out of one. Compared to manual plowing, driving a tractor exhausts the worker less and enables more enjoyment afterwards. And the engineer who designs the tractor does not even break a sweat. Hydrocarbons at least make possible and imaginable a petro-utopia in which free citizens use their minds more and their bodies less. For a large elite, *this* is the truth of oil. Even for them, though, the meaning of oil has always lagged behind its objective effects. The

⁴ Cite Dukes, Jeffrey S. 2003. “Burning buried sunshine: human consumption of ancient solar energy.” *Climatic Change* 61:31-44.??

very combusters identify petroleum more often with the money it buys than with what the work it does. Oil has earned utopian praise without ever receiving it.

Iron slaves

The contingencies marking oil as merely lucrative began with an energy crisis – experienced as a labor shortage. Britain finally emancipated the slaves in her colonies in 1838. For Caribbean sugar growers, this liberation provoked a three-fold disaster. First, the cost of labor – as growers now had to pay wages – skyrocketed. Second, labor became less available with each freedman who abandoned the plantations in disgust. Many ex-slaves valued independent living – as urban dwellers or smallholder farmers - more than any available form of wage of employment. Third, the terms of trade for British-grown sugar began to collapse. Even after France abolished slavery in 1843, West Indian growers were competing against slaveholders in Cuba, Brazil, and the United States. Inevitably cheaper to produce, slave-cut sugar squeezed the sales of Jamaican, Trinidadian, and Guyanese exports. In possibly the first “fair trade” movement, Anglo-Caribbean growers pleaded with Parliament for the application of an import tariff or boycott against slave-made sugar – but to no avail. London seemed to want to have its cake and eat it: that is, to enjoy the moral satisfaction of freeing slaves without paying the resultant higher prices for a sweet cup of tea. This set of trans-Atlantic debates became known as “the sugar question.” Under that title, a widely circulated 1845 pamphlet proposed what seemed like the only solution implementable by West Indians: the shipment of free immigrants across the Atlantic to the sugar islands. “Let Africans populate our West Indian Colonies,” exhorted the writer, “until Guiana is as dense as Cuba” (Anonymous 1845:17). Such a migration promised both to civilize African laborers and ensure the continuation and financial

soundness of emancipation. In the event, Jamaica, Trinidad, and Guiana did import cane cutters – from India rather than Africa and as indentured not free labor. In retrospect, Britain answered the sugar question by reinventing slavery in a milder form.

In 1845, Conrad Stollmeyer dreaded this outcome proposed a third way between slavery and immigration: the iron slave. Unique among commentators on the sugar question, Stollmeyer defined the problem as a shortage of energy, rather than one merely of human beings. Having left Germany for London, he answered “The sugar question” with his own manifesto, “The sugar question made easy.” The solution, he began, depends “entirely upon the vivifying power of the sun ...and the energies and knowledge of present and future proprietors of sugar plantations” (Stollmeyer 1845:7). Machines, in other words, would convert solar power into labor. “ONE IRON SLAVE,” Stollmeyer wrote breathlessly, “will do the work of *three hundred* human slaves.” “Go to the *iron* districts of England,” he exhorted the West Indian planters, “have them well moulded and cast...” (Stollmeyer 1845:18, emphasis in original). The design already existed, sketched by John Adolphus Etzler. By late 1845, Stollmeyer and Etzler had organized a public exhibition in Oxfordshire of their agricultural machine. Known as the satellite, it depended upon a power source – wind, tidal, or wave action – that would pull ropes and spin the machine around a pivot. (In the case of solar power, mirrors would focus sunlight on a water vessel, producing steam to turn a turbine.) As it rotated, the satellite – armed with a variety of tools – would cut trees, plant seeds, or harvest crops. The trial went badly. Gadgetry clawed against the ground without great effect and without connection to a power source – whose efficacy had to be trusted (Stoll 2008:120-21). In a utopian periodical, Stollmeyer admitted to “*little* and accidental causes which hindered us from coming off with a grand *éclat*” but affirmed

absolutely “the possibility of performing agricultural operations with inanimate powers.”⁵ To those persuaded or persuadable, iron slaves had resolved the energy crisis.

More than that: mechanization would replace but *all* hard labor, free as well as forced. The satellite promised a complete revolution in the balance of leisure and work, entirely new subjective and material conditions which Eztler had already described as “The paradise within the reach of all men without labor by powers of nature and machinery” (Etzler 1833). Eztler and Stollmeyer had met in New York in 1840 at a celebration of the birthday of Charles Fourier (Nydahl 1977:xvii).. Both admired the French utopian. For the past seven years, Eztler had been writing books and tracts under his influence. Stollmeyer, then a printer in Philadelphia, had been publishing the works of Fourier’s American disciples. These utopians took issue with Robert Owen and his brand of agrarian socialism. Too much depended on long, back-breaking hours spent in the fields. “Compared to the idleness and well-being which he [the worker] enjoys on Sunday,” Fourier wrote, “this indirect form of slavery is not any less physically constraining than real slavery” (quoted in Beecher and Benvenu 1971:141). It was not any less dispensable either. Christians, Fourier insisted, were mistaken when they assumed work to be a permanent curse for Adam and Eve’s trespass. “Scripture did not say that this punishment would not end one day, nor did it claim that man would never be able to return to the happy state he first enjoyed” (quoted in Beecher and Benvenu 1971:149). People could return to Eden by sharing work, dividing each job into short and enjoyable assignments to which they were drawn through “passional attraction.” In the community Fourier imagined – known as the Phalanx – tasks would range from farming to cooking to light manufacturing, and each member would do many of them for each other in reciprocal rotations. This paradise satisfied more desires than had the

⁵ *The Morning Star*, 11 October 1845; emphasis in original.

original one. Fourier gave the example of “[T]he young Bastien, [who] to recognize Celiante, who has obliged him in various services, will hardly neglect to offer the proof of gratitude that a young man of 20 years can offer to a lady of 50.”⁶ From this titillating utopia, Eztler and Stollmeyer omitted carnality, embraced leisure, and identified an energy gap (Claeys 1986). The Phalanx and its iron slaves needed a means of capturing inexhaustible power.

In such quantities, solar and other forms of energy demanded a “spatial fix.” The utopians reached far outside the world of Fourier – to the tropics. Europe was still discovering this belt, particularly across the Atlantic. In 1804, Alexander von Humboldt completed his epic journey through northern South America, Mexico, and the Caribbean. He and his companion, Aimé Bonpland, published their account in 30 volumes, the last one appearing in 1834. Considered the founding text of biogeography, this *œuvre* mapped the tropics as a series of botanical and climatic zones. But it also owed much to prior European notions of the New World as truly new (Gerbi 1973:406). Over the still-emergent land mass, fecundity ran rampant. “This plants,” von Humboldt wrote in 1805, “exercises an absolute empire over these regions: Man, despite his efforts – struggling against an almost untamable nature – has only removed from them a little territory for agriculture.”⁷ These descriptions inspired Etlzer’s 1844 pamphlet “Emigration to the tropical world for the melioration of all classes of people and of all nations.” The document estimated that “Twelve to 25 times the present population of the world would find room and food within the tropical zone alone” and “plantains will yield as much nutritive stuff on one acre, as 133 acres of wheat or 44 acres of potatoes in Europe, according to Humboldt, an

⁶ “*le jeune Bastien, pour se reconnaître envers Celiante qui l’a obligé dans divers services, ne manquera guère de lui offrir la preuve de gratitude qu’un jeune homme de vingt ans peut offrir à une dame de cinquante*” (Fourier 1840:7).

⁷ “*Ces végétaux ...exercent un empire absolu sur ces régions: l’homme, malgré ses efforts, luttant contre une nature presque indomptable, ne leur a enlevé que peu de terrain pour la culture*” (Humboldt 1805:18).

undisputed authority” (Etzler 1844:5 and n.d.:2). Stollmeyer, too, echoed the reference, describing “the luxuriance of the vegetable world in the Tropics which astounded even Alexander von Humboldt” (Stollmeyer 1845:15). Sunlight nourished the growth. Etzler imagined additional forms of infinite energy – or, as he put it, “gigantic powers of nature, of wind, water, and the sea’s waves” (Eztler 1844: 346). “Each of these powers,” he had already written, “requires no consumption of materials ...” (Etlzer 1833:4). Renewed every day, flows too and around the planet depleted no minerals or forests. And at the equator – or the “bosom of our Mother Earth,” as Stollmeyer later called it – these currents surged beyond all human needs.⁸ At low latitudes, Stollmeyer and Eztler believed they solved the problem of want in every way.

To persuade others, however, they had to defeat contemporary notions of scarcity. Published in 1798, Thomas Malthus’s *An Essay on the Principle of Population* commanded at least as much attention from the reading public as did von Humboldt’s work. Like the naturalist, Malthus had found fecundity – among the human animal, however (Glacken 1967:637). Its rate of breeding would outstrip increases in agricultural yield and force mass starvation. Malthus had neither considered the tropics nor had the benefit of Humboldt’s scholarship. The latter did read Malthus and responded with a more nuanced understanding over-consumption and inequality (Sachs 2006:78). Utopians reacted in a cruder fashion. Their periodical dismissed Malthus with disdain and deliberate italics as an “animal ...not bred or encouraged in the *Tropics*.”⁹ Etzler himself refrained from naming Malthus but surely included him among “pretended sages who recommend *checks* to human population” (Etzler 1844:8, emphasis in original). “[T]he stupid European,” Etzler continued, suffered from self-defeating parochialism: “He is like a cock on his own dunghill, which takes that for this world ... though boundless beautiful fields of pasture and

⁸ *The Trinidadian*, 22 January 1853.

⁹ *The Morning Star*, 1 February 1843. Emphasis in original.

grains be open to sight for his pleasure and over-abundance of food” (Ibid: 12). The math substantiated these insults. Land in a 4000 mile-wide belt could support 100 billion people (Ibid). Earlier, Etzler had estimated as one trillion the maximum tropical population (Etzler 1833:98). None of these calculations was falsifiable at the time – or even today. In the event, capitalist ideology helped Etzler overcome Malthus. It elevated infinite growth from a contested vision to hegemonic dogma (Stoll 2008). And the dogma might just become true if and only if, as Stollmeyer practically shouted, “ONE IRON SLAVE ... will do the work of *three hundred human slaves.*” (Stollmeyer 1845:18, emphasis in original). Together, machine and nature would banish all limits to freedom.

To prove their point, Stollmeyer and Etzler required a test larger, more tropical, and certainly more successful than the Oxfordshire trial. In 1844 and 1845, the two men acquired land in Venezuela, and Etzler published his strongest claims in the pamphlet “Emigration to the tropical world for the melioration of all classes of people of all nations” (Etzler 1844). In Britain, they founded the Tropical Emigration Society. The institution aimed to settle equatorial America and, through the power of example, put an end to slave labor, indentured labor, and labor altogether. To prospective communitarians, Etzler advertised “a tract already capable of supplying the wants of one million of men... where every member can enjoy as much happiness as his nature is susceptible of...” (Etzler 1844:17). “Leisure and freedom from care and drudgery,” he predicted, “will beget a desire and taste for the refinements of life and intellectual pleasures (Ibid: p. 18). Attracted by this vision, forty-one utopians embarked for Port of Spain and, after some refreshment, crossed the gulf of Paria to Guinimita on the Venezuelan coast. The satellite did not accompany them but, it was assured, would arrive shortly. Stollmeyer and Etzler commanded operations from Port of Spain – presiding over what was probably the

greatest debacle of any 19th-century utopian scheme. In swampy, malarial conditions, settlers hacked at the vegetation to the point of malnutrition and exhaustion. No iron slaves appeared. Eventually, fifteen settlers died before the survivors straggled back to Trinidad in early 1846. Eztler fled the scene, disappearing entirely for the rest of his life, while Stollmeyer answered questions in Port of Spain (Stoll 2008:126-31; Besson 2001:291). He explained to the same the same utopian periodical: climate was not responsible; nor was the satellite, or its absence. Stollmeyer blamed human error – “I can trace every case of sickness to individual or collective imprudence” – on the part of the settlers themselves.¹⁰ After an official enquiry, the *Port of Spain Gazette*, focused attention on Stollmeyer, speculated as to his level of gross negligence, and described the settlers’ “privations and horrors which it makes the blood run cold to think of.” Stollmeyer’s reaction to this criticism is unknown. What might have struck him most were its omissions. The *Gazette* described the scheme’s objectives only in terms of acclimating Europeans to the tropics.¹¹ Dreams of the iron slave, abundant leisure, and the end of labor vanished without remark.

Labor reconsidered

In the next twenty years later, Stollmeyer – still living in Port of Spain – acquired all the means necessary to revive those dreams with greater chances of success. He gained control of the largest natural hydrocarbon seep in the world. From the humiliation of Guinimita, he recovered rapidly. The colonial governor, Lord Harris, introduced Stollmeyer to Thomas Cochrane – also known as the Earl of Dundonald - a semi-retired naval officer, abolitionist, and one-time hero of the British naval blockade against slavers. Cochrane had acquired a concession

¹⁰ *The Morning Star*, 28 February 1846.

¹¹ *The Morning Star* reprinted this article on 1 August 1846.

to extract natural bitumen from a deposit in south Trinidad known as the Pitch Lake. Mostly absentee, Cochrane delegated this venture to Stollmeyer. Even before doing so, the Earl had experimented with the use of bitumen as a substitute for coal. In the 1850s, the two men developed that product – actually, the first form of combustible petroleum – and founded the Trinidad Petroleum Company (Higgins 1996:14). Their work required more ingenuity than one might expect. At the Pitch Lake, hydrocarbons do bubble up steadily and in enormous volumes, but in an extremely dense form. Before Cochrane, bitumen was remembered as the caulking substance Sir Walter Raleigh has used to repair his ships. Later, it became a major constituent of asphalt-surfaced roads. How could an industrialist convert what was essentially tar into a fuel light enough and volatile enough to burn and release energy? By 1860, Dundonald and Stollmeyer had solved that problem through a process of heating and refining. They produced kerosene which rapidly replaced whale oil as a fuel for illumination. “Pitch lamps” soon cast their wan, flickering glow over nighttime Port of Spain. The same fuel, now known as kerosene, could out-perform coal. With a higher energy density than any other 19th-century hydrocarbon, kerosene delivered heat in a small package. It could spare workers the drudgery and danger of hauling solid fuels – not least in the sugar factories of Trinidad. Here, at last, was an energy promised, at least, a “paradise with less labour.” But neither man viewed their product in remotely utopian terms.

Stollmeyer – whose ideals had been loftier than Cochrane’s – had already sold them out in a rapid, well-documented fashion. In 1852, he had taken over the voluntary editorship of *The Trinidadian* newspaper. Its previous editor, George Numa des Sources, had left to found another settlement in Venezuela, called Numancia. Surely relishing the chance to expound his views, Stollmeyer perpetuated the paper’s utopian slant. As his editorials soon made apparent,

Guinimita had not shaken Stollmeyer's faith. "[N]ever despair," he exhorted a hundred settlers ready to depart for Numancia, "even if you some of your associates fall victims to sickness and death." "You will have to suffer and work much and hard in the beginning," he continued somewhat paradoxically, "to obtain 'PARADISE WITHOUT LABOUR'."¹² The following edition summarized the conditions that necessitated Numancia and, indeed, any almost any form of flight from Trinidad. Stollmeyer admitted that, since Emancipation, "the colored race is no longer degraded to the level of brutes." But, the colony's subsequent legislation – regarding usury, taxes, and land – returned them to "systematic degradation." Stollmeyer continued: if, barred from social advancement and education, the freedman "leads a careless life, and falls into indolence and dissipation, he is branded with the epithet of the 'lazy, worthless, slovenly, dirty creole'."¹³ In this defense of sloth, Stollmeyer's ideals already started to give way. He portrayed labor almost positively – as a good withheld from Trinidadians by greedy landlords. In the previous month, he described even hard, agricultural work less as a form of suffering and more as investment in the future. "This fertility of the soil," reported, "...in a very short time repays the toils of the industrious laborer."¹⁴ Redolent of the Protestant Work Ethic, Stollmeyer's writing already began to recast the paradise without labor.

Humiliation may have accelerated this ideological conversion. In 1853, *The Port of Spain Gazette* – assisted by Stollmeyer's own big mouth and ego – defamed him even more thoroughly than it had do after Guinimita. The sad affair began in early August, a certain J. Kavanaugh barred Stollmeyer from entry to his private club. The disagreement centered on Stollmeyer's non-payment of membership dues or Kavanaugh's objection to one of Stollmeyer's

¹² *The Trinidadian*, 1 December 1852. Emphasis in original.

¹³ *The Trinidadian*, 8 December 1852.

¹⁴ *The Trinidadian*, 6 November 1852.

editorials or both. At any rate, Stollmeyer related the conflict in the page of *The Trinidadian*. “We preferred to use our usual armour of defense,” he explained, “the pen.”¹⁵ Feeling himself libeled, the 70-year-old Kavanaugh hit Stollmeyer shortly thereafter with a stick in the streets of Port of Spain. The next issue of *The Trinidadian* decried this “brutal assault” which very nearly rendered “our beloved wife and our five children orphans.”¹⁶ Stollmeyer pressed charges and demanded damages of £500. The judge found Kavanaugh guilty of assault but awarded Stollmeyer a token £5. With what must have been schadenfreude, the *Port of Spain Gazette* reprinted the entire court transcript. In this text, the Defense debunked everything from the thickness of the stick, to the ferocity of his 70-year-old assailant to Stollmeyer’s self-described counter-attack reminiscent of “our dueling days.” Finally, the Defense criticized his grammar. Referring to him sarcastically as “Sir Oracle,” the attorney asked: “Was there ever anything so ridiculous as the editorial WE in this case.”¹⁷ The *Port of Spain Gazette* further editorialized : “... the plaintiff drew upon himself the punishment he received.”¹⁸ In the course of this affair, Stollmeyer reaffirmed, “We have taken up the pen in the holy warfare of the Press against oppression, ignorance, vice, and intemperance...”¹⁹ By end of it, though, he may have been looking for a way to leave *The Trinidadian*. His final editorial mentioned the destruction of the printing press through fire, but characteristically gave greater weight to his own shift in preferences. “It is time for us to think about more profitable modes of employing our time,” he wrote still with the royal pronoun, “and to concentrate all our efforts upon the fashionable and

¹⁵ *The Trinidadian*, 3 August 1853

¹⁶ *The Trinidadian*, 6 August 1853.

¹⁷ C.F. Stollmeyer vs. J. Kavanaugh, Supreme Civil Court, Port of Spain, reprinted in *Port of Spain Gazette*, 7 October 1853.

¹⁸ “Comment on the trial,” *Port of Spain Gazette*, 7 October 1853.

¹⁹ *The Trinidadian*, 6 August 1853.

praiseworthy object of making money.”²⁰ If shame may have *pushed* Stollmeyer from reformist writing, the black gold of bitumen definitely *pulled* him away.

In fact, various hydrocarbons proliferated in the 1850s, and Stollmeyer made a careful choice among them. Two decades after Emancipation, the sugar factories on Trinidad’s plantations still employed Mumford “galley slaves” as stokers. They fed the fires that kept cane juice boiling day and night at constant temperature. Commonly, plantations burned wood and crop residues known as megasse. Organic matter combusted so rapidly that the stokers had to transfer it ceaselessly on long shifts, risking burns and even graver accidents (Mathieson 1926:64; Mintz 1985:50). By the 1850s, Trinidadian growers had mostly shifted to coal (de Vertueil 1848:77). The new fuel probably improved working conditions in the factories. Coal’s energy density stands at double or triple that of crop residues, including megasse. The new fuel could easily cut the stoker’s lifting job in half. Bitumen could achieve the same efficiency. Initially, Stollmeyer emphasized its economy, as a product of the nearby Pitch Lake, over coal imported from Britain. In 1853, *The Trinidadian* ran his signed advertisements for “Cheap fuel ... equal to coals,” cash preferred.²¹ By 1871, experiments sponsored by Stollmeyer and Cochrane proved this equivalency in energy terms. “With perfect combustion,” Stollmeyer advertised to planters, “a ton of raw asphalt will give as much heat as ton of the best of the best stone [anthracite] coals.” The new hydrocarbon, then, promised to make the labor savings achieved by coal economically sustainable in the long term. The same publicity, however, suggested an additional step, cutting the asphalt in smaller pieces. A machine would actually

²⁰ *The Trinidadian*, 24 December 1853.

²¹ For Example, *The Trinidadian*, 9 March 1853.

split the asphalt, but “manual labour” would sift and transfer the pieces.²² Still, shifting from megasse to bitumen – or even adding bitumen to the fuel mix, as was more frequent – surely alleviated some of the toil in sugar factories. If so, Stollmeyer reduced work only as unintended by-product of his business objectives.

	Megajoules per kg	Calories per kg	Kilowatt-hours per kg
Gasoline	47.3	11.3	13.1
Crude oil	42-45	10.0-10.8	11.7-12.5
Kerosene (or refined bitumen)	42.8	10.2	11.9
Coal (or crude bitumen)	27-30	6.4-7.2	7.5-8.3
Agricultural residues and wood	10-17	2.4-4.1	2.8-4.7

Figure 1: Energy Densities of Various Fuels²³

Indeed, he rejected a second set of labor-saving hydrocarbons out of hand. Also in the seminal 1850s, Stollmeyer and Cochrane perfected a technique for distilling bitumen into kerosene. This fuel burned brightly and, in Europe and North America, soon replaced whale oil in street and home lights. In 1856, Cochrane joined with other investors to form the Trinidad

²² Conrad F. Stollmeyer, “Raw asphalt as auxiliary fuel with megass, wood, or stone coals,” November 1871. Cochrane Family Papers, Box 8, Duke University Library Archive, Durham, North Carolina.

²³ The energy content of agricultural residues and wood varies due to moisture content. Figures exclude biomass fuels dried by means other than air drying. Coal figures refer to bituminous and anthracite coal only. Mass does not include the oxygen reactant in air. Source: “Bioenergy conversion factors,” downloaded from https://bioenergy.ornl.gov/papers/misc/energy_conv.html on 29 June 2012.

Petroleum Company, whose sole purpose was to produce and export kerosene (Wiltshire 2007:23). The local market grew as well, and Port of Spain soon enjoyed steady illumination. Stollmeyer managed much of this business. Why did he not send kerosene to the sugar factories? Kerosene's energy density exceeded that of bitumen and anthracite coal by a significant margin. If a switch could be effected, the rate of fuel injection to the fires would fall proportionately. Of far greater importance, the liquid quality of kerosene would obviate stoking altogether. Kerosene would travel in pipes, either with gravity or with relatively easy pumping uphill. The fuel could convert at least one stage of sugar production into a "paradise without labour." Yet, no country besides tsarist Russia replaced coal with kerosene (or petroleum) in the 19th century (Mitchell 2011:31). That country contained enough petroleum – from which kerosene could also be distilled – to serve illuminative and mechanical purposes. All other markets treated hydrocarbons as scarce and non-substitutable. Kerosene did what only kerosene could do: keep the lights on.²⁴ Prices reflected these priorities, and coal was cheaper than kerosene per unit of energy, as it still is. Stollmeyer does not appear to have challenged any of this rationale. Indeed, he reappeared in the press in 1866 to criticize a rival liquid fuel: crude petroleum. In 1859, not far from the Pitch Lake, Walter Darwent had drilled one of the first oil wells in the world. Petroleum, which was also distilled into kerosene, quickly undercut Stollmeyer's market share. Rather than investing in crude, however, Stollmeyer predicted its exhaustion with more-than-Malthusian speed. "[I]t would be safer to speculate" he wrote to a Port of Spain newspaper, "upon the great prize in the Frankfort lottery than upon the finding of

²⁴ See Anonymous (1906:371) for a belated discussion of the benefits of kerosene and/or oil in sugar manufacturing.

oil-wells in Trinidad.”²⁵ Again, questions of supply – this time with a misplaced pessimism – superseded those of labor and toil.

In fact, Stollmeyer’s antipathy towards “slavery” had slipped away even while he was still editing *The Trinidadian*. Stollmeyer traded his utopian vision for another form of grandiosity. An editorial praised Cochrane for “[t]he establishment of this new branch of industry [that] will become the most important event in the history of our island.”²⁶ Pitch would supersede Emancipation – and in more ways than one. “May we not then cherish the hope, “ Stollmeyer asked his readers, “that from this accumulation of wealth a radical change will take place throughout the civilized world towards the amelioration of suffering humanity ...?” The answer was positive, but suffering no longer connoted work. Quite the opposite: the same editorial referred to “thousands and thousands who will be employed in the different manufactures to which our mineral treasure is susceptible.”²⁷ Pitch, in short, would create, rather than obviate, the need for human labor. Instead of supporting a comfortable status quo, bitumen would drive economic growth. Along these lines, Stollmeyer suggested another settlement scheme, this one bringing to Trinidad freedmen from the United States. He promised them, “a home ... where in a short time they may be able by their industry, and assisted by the productiveness of our soil to acquire a position for themselves ...” And, further, “[w]ith a population reinforced by thousands of industrious immigrants ... provisions [crops] would become abundant.”²⁸ Here, Stollmeyer also reconsidered tropical nature: it would enhance, rather than replace, human efforts. Indeed, to the extent that it did obviate labor, equatorial abundance now spawned dystopia. In 1855, Stollmeyer complained in a private letter, “This

²⁵ *The Trinidad Chronicle*, letter to the editor by Conrad F. Stollmeyer, 7 August 1866.

²⁶ *The Trinidadian*, 10 August 1853.

²⁷ *The Trinidadian*, 16 February 1853.

²⁸ *The Trinidadian*, 22 January 1853.

climate and the rich soil of the island enables men who have very few wants to live isolated as squatters idling away 9/10 of their time.” And to top it off, “They have only the animal instincts developed.”²⁹ In short, Stollmeyer reversed the moral positions of labor and leisure. What was once virtue degraded to vice, and the “paradise without labor” became a contradiction in terms.”

The vehemence of this change of heart suggests a deeper bias. In Trinidad, after the failure of Guinimita, Stollmeyer observed freedmen enjoying their leisure, and he was appalled. These sentiments he confided to relatives and friends, rather than to readers of the *The Trinidadian*. In 1854, he complained to his mother, “The former conditions under slavery have spoilt the labourers here and they hate to work.”³⁰ “The Blacks are as lazy as possible,” he wrote to an American utopian in 1855, “ignorant rumdrinkers with few exceptions, they are worse off than in the time of slavery.”³¹ He sounded like a bitter, dispossessed slave-master, but already the leading intellectuals of this class had developed a more sophisticated understanding. “[T]he slave [was] obliged to toil for the benefit of his master,” explained L.A.A. de Verteuil in his incompendious 1858 geography of Trinidad, and “viewed the obligation of working as a curse” (L. de Verteuil 1858:489). Any abolitionist should have sympathized with this logic. Cochrane expressed shock at “negroes in rags lying around the streets of Kingston” but also found them willing to work for “those [rare planters] who pay a reasonable price for work and are punctual in the payments” (Dundonald 1851:109-10; cf. Lloyd 1947:201). Surely utopians could have expressed this dual sentiment, but distaste seemed to have overwhelmed analysis – perhaps from the very beginning. In 1833, Ezlter had written to Americans:

²⁹ Conrad F. Stollmeyer to Arthur Craig, December 1855. I am grateful to Steven Stoll for sharing this document, which is in his private possession.

³⁰ Quoted in A. de Verteuil (1994:100). Anthony de Verteuil, who is a descendent of L.A.A. de Verteuil, gives no further information on the letter or on its original language.

³¹ Conrad F. Stollmeyer to Arthur Craig, December 1855. I am grateful to Steven Stoll for sharing this document, which is in his private possession.

“The slaves in your country will cease to be slaves ... new mechanical means will supersede their employment ... You may then easily dispose of this unfortunate race... [S]end them to some distant part of the world...and make amends for the grievous wrongs they have suffered in this country” (Etzler 1833:14).

At root, these utopians did not devise machines so as to liberate slaves from their masters. They hoped for the reverse: to liberate masters from their slaves – to expel these redundant humans. As per the colonial turn of phrase, “labor” in the “paradise without labor” denoted (brown) people as much as it denoted work itself.

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In Trinidad, oil missed its utopian moment due to Stollmeyer’s mounting intolerance. He was not more racist than the spirit of the colonial times. Indeed, as an abolitionist, he was probably less so – at least in the 1840s. But experience long after emancipation provoked a different sort of prejudice – the entrepreneur’s resentment of loafers. Trinidad’s freedmen were, in fact, living in conditions analogous to Fourier’s Phalanx. They enjoyed their leisure and helped each other to get by. Even without machines, the landscape could generate sufficient nutrition under minimal cultivation. Freedmen and women even practiced sexual promiscuity – or at least wished the colonials to believe they did. In the later 19th century, Carnival evolved into a bawdy spectacle of Afro-Trinidadian resistance to discipline and propriety. An observer as willing as Stollmeyer appeared to be in the 1840s would have found much to admire in this form of recreation. The Stollmeyer of the 1850s, however, replaced passionate attraction with the Protestant Work Ethic. He was building a business with competence and success. In fact, the

extraction of pitch required hard labor. At the bottom of Stollmeyer's enterprise, men hacked at the bitumen with pickaxes and loaded the material into handcarts. In this respect, bitumen differed little from coal. Only distillation – later in the commodity chain – produced the liquid fuel that flowed and reduced labor. Stollmeyer appreciated the flow of money more and most of it on asphalt for roads. “The Pitch Lake is a mine of wealth,” he wrote to an investor in 1871, “and, if properly, judiciously, and liberally handled, can make fortunes for all at present concerned in it.”³² He Stollmeyer was swimming in the hydrocarbon sea of utopia without getting wet. Perhaps he made the mistake of a later historian, confusing utopian end with the means of reaching them. “Stollmeyer lived,” wrote Donald Wood in 1968, “to see something of the fulfillment of Etzler's vision of technology transforming in the tropics. In his later years he was a director of the electricity, telephone, and ice-manufacturing companies of Trinidad” (Wood 1968:89). None of these businesses would have pleased the earlier Stollmeyer, the man who named his son Charles Fourier. In 1904, Stollmeyer's obituary praised him for precisely the qualities he had once sought to render obsolete: “industry, energy, [and] indomitable perseverance ...”³³

Beyond this one man, oil affected the balance of work and rest in ways that were contingent and unpredictable. From the beginning, hydrocarbons enhanced the productivity of human labor. Turbo-charged in this way, a worker could finish the day's quota shortly after breakfast. Few have ever appreciated the radical possibilities at hand. In 1880, Olivier Lafarge concluded his essay entitled “The right to laziness” with a paean to coal power: “the machine is the redemption of humanity, the God that will redeem the man from *sordidæ artes* and wage

³² Conrad F. Stollmeyer to James McAlley, 8 November 1871. In Duke University Library Archives, Cochrane Family Papers, Box 8.

³³ *Creole Bitters*, 3 May 1904.

work, the God that will give him leisure and liberty.”³⁴ The “right to laziness,” however, never rose above the legal status of a privilege. Colonial governments disparaged it, elaborating a “myth of the lazy native” who refused to work for whites (Alatas 1977). As if to disprove the insult, anti- and post-colonial manifestos and constitutions disavow any right of repose. Such documents are more likely to enshrine a right to work. In so doing, they exploit the opposite side of the hydrocarbon equation: a worker who finishes the first task in short order may finish many more by closing time. Hydrocarbons allowed workers to *do* more. “Machines,” as Timothy Mitchell summarizes, “created new powers of action, greatly extending the physical limits of human and animal power” (Mitchell 2011:66). Fossil fuels, in other words, have always promised either more rest or more activity. The former option appealed to Fourier and Lafargue – but not, by and large, to states and corporations. Production – along with the search for constant capitalist growth – captured the day. Without intending to, however, capital and labor have enabled a measure of laziness. Hydrocarbons produce more with less of the *sordidæ artes*. An enormous swathe of humanity organizes, manages, and directs machines, sometimes without even breaking a sweat. Those who benefit most from this alleviation of toil often acknowledge it the least. States and elites exploiting oil see themselves as merely “mak[ing] fortunes for all at present concerned in it.” Few recognize the semi-utopia – the paradise with less labor – in which so many of us live.

That lack of appreciation – what one might call a symbolic deficit – makes oil’s cost harder to count. The identified positives of hydrocarbons are not commensurate with its anticipated negatives. Oil generates goods and wealth, benefits that are countable, visible, tangible, and mundane. Yergin’s “epic quest for oil, money, and power” reads more like a novel

³⁴ “...*la machine est la rédempteur de l’humanité, le Dieu qui rachètera l’homme des sordidæ artes et du travail salarié, le Dieu qui lui donnera les loisirs et la liberté*” (Lafargue 1994:59).

– or a successful development policy – than an epic. The truly epochal shift is occurring on the cost side of oil’s balance sheet. At the current rate, carbon emissions and climate change will eventually flood all coastal cities and render agriculture too unpredictable for large-scale settlement. These costs of oil are uncountable; they exceed a policy-maker’s imagination. One can only compare the advantages and disadvantages by assigning to dystopia a value of infinity or a value of zero. Because it is convenient, producers and consumers of hydrocarbons discount the dystopia to zero. It does not figure in most of the economic calculus by which societies price and trade energy. But - if things had gone differently in Trinidad in the 1850s and in other crucibles of oil culture – hydro-carbons might occupy the same register as climate change. That would be a symbolic register comparing utopias and dystopias, dreams and nightmares not here but just across the boundary of sleep. If consumers first appreciated the promise of oil, they might feel its betrayal more keenly. This is a wild speculation, what Svetlana Boym would call “off modern...an exploration of the side alleys and lateral potentialities of the project of critical modernity.” At the Pitch Lake of the 1850s, the alleys for utopian oil all converged. Stollmeyer diverted them and helped frustrate a critical modernity contesting hydrocarbons.

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