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### Envisioning the Energy Humanities: An Introduction

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REVIEWS  
in CULTURAL THEORY

6.3

Energy Humanities

Guest Editors

Jeff Diamanti and Brent Ryan Bellamy

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# Editors' Introduction: Envisioning the Energy Humanities

BRENT RYAN BELLAMY  
AND JEFF DIAMANTI

The pieces in this special issue were originally presented at the 2015 Modern Languages Association's annual convention in Vancouver. They were very much occasioned by what an increasingly large and diverse group of scholars around the globe, at least as early as the inaugural Petrocultures conference in 2012, have been calling Energy Humanities.<sup>1</sup> Yet anyone who has stood on the west side of Vancouver and looked out onto the waterways that flow into the Pacific will know that Canada's west coast, like most urban, continental edges, occasions urgent and radically new visions for the relationship between energy and the way humanity operates globally. For, at the cusp of the continent, standing beside Douglas Coupland's enormous "Digital Orca," coal barges and oil tankers pass by the Vancouver Convention Centre everyday on their way to the Salish Sea carbon corridor. As they float on they pass by a sea plane refueling station that bobs in Coal Harbour. It has often been remarked that energy, especially in the form of fossil fuels, pervades modern life. Here, in Vancouver, on the traditional, unceded lands of the Coast Salish peoples, this truism of our petroculture—that hydrocarbons saturate our social and ecological relations to their very roots—has several layers of mediation and processing stripped away. The "greenest city on the continent" coincides with an energy infrastructure that wraps the planet in a warming blanket of carbon fuel emissions. Both the yuppie

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<sup>1</sup> For the first use of the term "Energy Humanities," see Szeman and Boyer "The Rise of Energy Humanities."

West Enders and those crowding East Hastings Street, knowingly or not, live in near-immediate proximity to vital routes that ship coal and oil resources extracted from Western Canada to global markets. This feels like a weighty revelation, but it is the type of conundrum that this growing field takes as its entry point. At the close of this collection, Jennifer Wenzel asks, “how can we understand the discrepancy between the everyday tedium of filling the gas tank and the sublimely discrepant timescales at work in fossil fuels, the ways in which geologic past, technological present, and environmental future overlap and collide?” If this small excerpt from the larger field is any testament, Wenzel’s call to “understand the discrepancy” leaves opens many paths to developing this knowledge.<sup>2</sup>

Few today will challenge the fact of environmental crisis, even if the facticity of that crisis continues to thwart, rather than accelerate, political resolution. And even fewer would challenge the broad consensus that puts fossil fuels at the heart of that crisis, since agreement in principle has little to no effect on our energy habits. As a critical term for Humanities and Social Sciences research, *energy* names not one but at least two things. The first—energy as idea—is easy to generate thinking around, because energy circulates most freely today in conversations about how to live a life, where to source one’s food, and where to invest one’s capital. Ideas about energy, however, run through the literal circuitry of a world saturated in fossil fuels and their infrastructures. Like most infrastructures, our planet’s networks of carbon power both make possible, and impossible, the kinds of alternatives we might collectively imagine. Thus, energy’s second form is as substance. Energy’s two sides—idea and substance, lifestyle and form of life, base and superstructure—contour what many in the energy humanities have been calling *the impasse*.

The impasse that we have here been painting in broad strokes—the epistemological, aesthetic, political, and economic reasons it remains easier to “settle for recycling,” as Peter Hitchcock will put it, than it is to “break the cycle”—is, in essence, the problem that the energy humanities attempts to address.<sup>3</sup> To put it polemically, the critical ambition of mediating complex systems that make up the world of experience has always been at the heart of social scientific and humanities research. In the wake of industrialization, the energy system—the common denominator of the social, economic, and environmental systems—now threatens prolonged and uneven disaster. Thus the project of mapping, managing, and overcoming the impasse of fossil fueled modernity is not at all other to the capacities and concepts of the social science and humanities. Moreover, that same project is utterly unachievable without qualitative social research. To overcome the cultures, infrastructures, and habits of our high oc-

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<sup>2</sup> See Wenzel “Taking Stock of Energy Humanities” in this issue.

<sup>3</sup> See Hitchcock “Energy Bars” in this issue.

always been at the heart of social scientific and humanities research. In the wake of industrialization, the energy system—the common denominator of the social, economic, and environmental systems—now threatens prolonged and uneven disaster. Thus the project of mapping, managing, and overcoming the impasse of fossil fueled modernity is not at all other to the capacities and concepts of the social science and humanities. Moreover, that same project is utterly unachievable without qualitative social research. To overcome the cultures, infrastructures, and habits of our high octane lifestyle must mean something different than simply abandoning them, as if that were an easy proposition. We might say that the initial task for energy humanities is to elaborate the impasse either in epistemology, as in Imre Szeman's provocative query "How to Know about Oil?", or in phenomenology, as Stephanie LeMenager proposes in *Living Oil* (2014). What the following contributions to the growing field of the Energy Humanities make clear is that next steps are already visible, and that our methods for thinking about energy, its pasts and its futures, are getting rewritten as we speak. The six short essays that follow each establish unique standpoints from which to envisage the shape and function of Energy Humanities research. We do not claim that these pieces name each possible trajectory—certainly the gesture of an Energy Humanities is not to narrowly define the critical projects it generates. Indeed the term is only one possible name for this emerging field. We say one name because the study of energy has only recently emerged from its nascent status, and it seems too early to decide finally what to name the kind of work being produced under various other banners.

Each of the following short contributions to the growing field of the Energy Humanities offer a vista onto what the field is already doing, suggest what it might do better, and argue why the humanities is an indispensable standpoint from which to understand energetic, environmental, and economic crisis. Here is a rundown of what follows: Clint Burnham grounds the collection both in the land, which we occupied to be at the convention, and in the struggles that have been unfolding in the Vancouver area over energy transport; Brent Ryan Bellamy offers an overview of ways we might use existing literary methodologies in concert with the study of energy; Jeff Diamanti offers three theses on the political economy of energy; Adam Dickinson delves into the pataphysical and cellular level of oil's substantive impacts; Peter Hitchcock dials into the way Energy Humanities operates at both local and global scales and institutional and theoretical registers at once; Stephanie LeMenager writes oil culture from the standpoint of living in and with oil infrastructure; and, Jennifer Wenzel pushes Energy Humanities to think beyond its opening gesture, "oil is everywhere," to ask what we should all be doing about it. These pieces offer trajectories for the Energy Humanities that aim to develop as much as they aim to convert thinking and to imagine as much as they hope to generate alternatives.

We would like to thank the Marxist Literary Group for sponsoring our roundtable at the MLA and Mathias Nilges for encouraging us to put the proposal together. Special thanks to Clint Burnham, Adam Dickinson, Peter Hitchcock, Stephanie LeMenager, and Jennifer Wenzel for their incredible generosity and striking contributions.

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# #Pipeline Politics

CLINT BURNHAM

Thinking about energy pasts and futures, and specifically around pipeline politics, I want to quickly mention an indigenous history of the Mackenzie Valley Pipeline<sup>1</sup> from the 1970s and the current struggle around the future twinning of the Kinder Morgan pipeline—two different historical moments that also work, as LeMenager discusses in her piece, at different scales.<sup>1</sup> In his 2014 book *Red Skin White Masks, Rejecting the Colonial Politics of Recognition*, Indigenous scholar Glen Coulthard (who teaches at the University of British Columbia, Vancouver) examines what he calls the “place-based cultural foundation undergirding the Dene Nation’s critique of capitalist imperialism as expressed at the public hearings of the Mackenzie Valley Pipeline Inquiry between 1975 and 1977” (53). This pipeline, constructed to transport natural gas from Prudhomme Bay, Alaska, to the lower 48 states, was only built after extensive consultations with Northern residents—native and non-native. Coulthard is from the Dene nation of Canada’s Northwest Territories (a nation in which I also have relatives) and he argues that it was the very negotiation of land claim settlements in this period that witnessed “numerous attempts by the state to coercively integrate our land and communities into the fold of capitalist modernity,” a process of, Coulthard’s reading of Frantz Fanon suggests, “primitive accumulation [that] has been at least in part facilitated by the very mechanism of recognition that we hoped might shield our land and communities from it: the negotiation of a land settlement” (53).

Now, I would say that Coulthard’s reading of this history deserves, with all its political urgency, what Gayatri Spivak calls the respect of a rigorous critique, and in the spirit of the Marxist Literary Group (sponsors of the MLA session on which this paper is based) I think it might be worth thinking about, or teasing out, distinctions between primitive accumulation (from volume 1 of *Capital*), David Harvey’s accumulation by dispossession (theorized in the *Socialist Register* in 2004), and Silvia Federici’s emphasis, in *Caliban and the Witch*, also from 2004, on the gendered nature of both historical accumulation and its present day variants.<sup>2</sup> I make these remarks only to note that Coulthard himself does mention Marx, Harvey, and Federici, but only in the most cursory fashion (I may be doing what Brent Ryan Bellamy will call for in terms of a symptomatic reading of indigenous activism and critique; too, the

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<sup>1</sup> See LeMenager “Infrastructure Again, and Always” in this issue.

<sup>2</sup> See Harvey, Federici, and Marx.

relation of primitive and dispossession accumulations at the same historical juncture may be an example of what Jeff Diamanti will describe in terms of the relation of energy to capital).<sup>3</sup>

The second moment, then, concerns a struggle this past fall (of 2014) at my home university, Simon Fraser University (SFU), in and around its campus on Burnaby Mountain, ten miles east of here, where Texas-based Kinder Morgan proposed to drill a tunnel through the mountain, with the goal of tripling its shipping of bitumen to the port of Vancouver and foreign markets. When KM started surveying in the fall, protestors began acts of civil disobedience, and two SFU professors, Lynn Quarmby (chair of the Molecular Biology and Biochemistry department) and Steve Collis (poet, and my colleague in the English department) were served with multi-million dollar lawsuits for their roles in slowing down KM's work. (This convergence of the sciences and the humanities challenges, I think, Dominic Boyer and Imre Szeman's call for an *Energy Humanities* [*University Affairs*, Feb. 2014] that will somehow recuperate our sunset industry. I prefer Jordan Kinder's comment in another MLA panel on bitumen that "it is easier to imagine the death of the humanities than it is the end of the reign of Canadian Prime Minister Stephen Harper"). Interviews and other texts that Quarmby and Collis had written were entered into evidence at the civil trial in November 2014, including a blog entry by Collis, the final paragraph of which ran as follows:

As barricades were assembled from garbage dumped down a hillside from the parking lot in Burnaby Mountain Park, an old, rusted oil barrel was uncovered and rolled up the hill. It's a talisman, a symbol of the old world we are trying to resist and change. It is, we hope, the last oil barrel that will have anything to do with this mountain forest. (Collis 2014)

Now, there was a bit of a comedy of errors as the protest went on, devolving in some ways into celebrity arrests (people going to the protest specifically to be arrested—the kind of thing LeManager may mean when she talks about what we worry about privately as critics and activists), and KM's injunction being thrown out of court when it turned out they had used the wrong GPS coordinates. Both sides claimed victory and I will leave it to history to determine that. But as a nod to the "literary" side of the MLG, I will make a quick genre or digital humanities comment, that while Collis' text was quite simply, as I said, a blog entry (Collis 2014), it was entered into evidence as a poem by KM's lawyer (so this resonates both with what Adam Dickinson discusses in his piece in terms of eco-poetics (or the eco-digital), but also Bellamy's

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<sup>3</sup> See Bellamy "Energy and Literary Studies" and Diamanti "Three Theses on Energy and Capital" in this issue.

notions of genre.<sup>4</sup>

The saga—or struggle—of Kinder Morgan/Burnaby Mountain may also resonate with other lessons delivered at the MLA 2015 convention, including a session on Althusser, where the argument was made (not least by my SFU English colleague Carolyn Lesjak) that the capitalist mode of production ultimately (in the last instance) is a matter of *economic exploitation* not repression or violence. That is to say (and with respect to Collis’ anarchist politics, police complicity is not the (anarchist or Foucauldean) point: police repression is the means to an economic end. This argument may be confirmed or indeed negated, I think, by more recent political developments in the petro-state that is Canada. In early 2015, the Conservative government of Stephen Harper introduced an anti-terrorism bill that many human rights specialists saw as a threat to free expression. At the same time, a leaked document from the national police force, the RCMP, showed how “violent environmental extremists” are a perceived terrorist threat to the country’s oil and gas industry.

But this classic moment of police *interpellation* suggests the need for a critical, as well as activist, solidarity with the analysis (and politics) brought to bear by Coulthard: that is, an alliance between settler and indigenous activism *and* theory. Coulthard’s treatise on the recent history of First Nations politics in Canada argues forcefully, via Fanon, that a politics of recognition, a politics based on liberal, state-based accommodation, only pathologizes resentment as resistance, a resistance that is thoroughly tied to place-based identity. That is to say, a politics of the land. For a nation inextricably tied to resource extraction and exploitation as is Canada, such land-based politics will only be a hindrance.

*Two back-channel instances of critique followed this session that are worth marking. During the discussion comparisons were made between “Energy Humanities” and “digital humanities”, and I remarked that unlike DH’s anti-theory success with institutional support, EH would likely take a more counter-hegemonic stance – needless to say, this argument met with resistance. Curiously, the same critic also suggested I, or the panel, listen more to indigenous voices, a suggestion with which I can only agree.*

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<sup>4</sup> See Dickinson “Energy Humanities and Metabolic Poetics” in this issue.

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# Energy and Literary Studies

BRENT RYAN BELLAMY

Energy Humanities excite thought, innervate methodology, and occasion new research. In one jolt the proposition that humanities researchers, literary scholars among them, address history from the standpoint of energy fuses against accusations of irrelevance that humanities departments face. The call asks researchers to join in an assessment of the historical dynamics of energy systems in order to speculate, along the lines proposed by Imre Szeman and Dominic Boyer's question, "how to work towards a sustainable energy future?" (40). Given the current global climate and the tumult over energy resources, it would seem that there is no time like the present to come to terms, on a number of fronts, with the cultural, economic, and political roles of energy in late capitalism and its historical development.

Allan Stoekl, author of *Bataille's Peak* (2007), suggests that those taking up energy ought to resist the well-nigh ontological stance oil might take should we allow it to overshadow our other concerns. In the foreword to *Oil Culture*, he writes, "the most effective way of refusing such a reification of oil, all the while granting it the visibility it deserves, is to write its history ... It's when we think about what 'oil history' could mean that we take a *natural* entity and recognize its *cultural* centrality" (xii). Though oil presents itself as critically overwhelming, responses to it should not back away, but instead find ways to *mediate* the particulars of oil and the general situation of our energy system. Put differently the goal is to understand the contemporary (or many contemporaries) as energy soaked moments in history, and what I call for here is an elaboration on the forms of critical mediation we have, and need, in order to get to the energy sources of culture, and the cultural sources of energy. Thus, humanities scholars are already in position to address the historical specificity of energy. Literary study in particular brings a hermeneutic precision to the table that engages the relationship between narrative and duration.

Where, how, and when to incorporate energy into our various and varied research programs? I would like to offer what will seem like an all-too broad schematic for the study of literature and energy, but is actually quite modest methodologically. My proposition is that those interested in cultural and literary studies might find such a schema useful in thinking through what Energy Humanities might offer to existing and emerging questions alike. In short, one could 1) include energy in the narrative frame of history; 2) locate the signs of energy through close reading; 3) assess trends

across a set of digitized texts; 4) return to old archives looking for new finds; 5) read against the text against itself; or, 6) search out the tell-tale absences of energy. The following remarks briefly touch on each proposition.

New historical and new critical approaches could return to coal era novels such as Charles Dickens's *Hard Times* (1854), which offers a bleak description of Coketown: "It was a town of red brick, or of brick that would have been red if the smoke and ashes had allowed it...It was a town of machinery and tall chimneys, out of which interminable serpents of smoke trailed themselves forever and ever, and never got uncoiled" (19). Here, coal makes an obvious impact on the realist novel. Energy saturates setting, generating a poesis parallel to that of character, but only occasionally overlapping. What else does *Hard Times* say about the impacts of carbon energy on the industrial revolution or on the bodies that lived and labored in such places or on the soil, the air, and the water? Are other texts similarly marked? This approach turns the explicit, the obvious, the setting of energy in history, into the point of contact for a critical study of energy.

A distant reading approach could look for energy keywords in a variety of texts and genres. Reading energy on the level of content would be a way to understand when and how energy sources arise in literary form and to ask which forms seem to come to terms with energy, in any given manner, most prominently and most directly. This approach could be a way to move beyond the broad questions, towards more focused research on stories about wood, about coal, about oil, about nuclear energy, and so on. These approaches are already available; it is amazing how attuned distant and close reading in particular are to gleaning for the narratological qualities of energy (for instance, one might look for scenes of coal stoking and steam engines in novels already interested in maritime and oceanic mobilities).

When it comes to genre, I first consider my work on U.S. post-apocalyptic novels. I would ask, what does it mean to write about an energy scarce future in the midst of an energy rich one? And, what can be learned by reading against the grain in stories set after the end of petromodernity? Other questions materialize rather quickly once we begin to look for energy in relation to other literary genres from the steam powered western to the "Improbability Drives" of science fiction.<sup>1</sup>

These observations about genre can also be tested within a global scale in a comparative mode. The contemporary situation in Russia, as described by Alexander Etkind (2014), remains vastly different from the North American context—indeed, he de-

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<sup>1</sup> For a full consideration of science fiction and energy see Gerry Canavan "Retrofutures and Petrofutures" and Graeme MacDonald, "Improbability Drives."

scribes the post-soviet oil novel as a kind of “magical historicism” (161) replete with historian protagonists, shape-shifting wolves, and new forms of energy which result in the destitute eating products made of oil. Similarly, in the (neo)colonial context of the Niger Delta, Jennifer Wenzel deploys the term “petro-magical-realism” as a way to elaborate “the fantastic and material elements” of Amos Tutuola’s fiction, “linking formal, intertextual, sociological, and economic questions about literature to questions of political ecology” (450). Reading the genre as bound up with energy opens compelling pairings of texts and situations.

Perhaps the most attractive approach is a symptomatic reading that looks for energy as a kind of structuring absence. Amitav Ghosh asks why the oil encounter has not produced the same literary response as the colonial spice encounter did—there are many novels about the spice trade, where are the oil novels? A symptomatic approach to energy would need to follow Patricia Yaeger’s suggestion that “...energy invisibilities may constitute different kinds of erasures” than other invisibilities (309). How are the imprints of coal dust left on the texts of 1848 different than the nuclear glow of high modernism? Does oil drip from the post-1989 novel on a global scale, and how might its markings change during the political turbulence of the long-1990s and early twenty-first century?

These suggested approaches cannot be read without attendant theoretical commitments, once combined with other abiding concerns, such as decolonization, anti-racism, feminism, queer politics, and ecocriticism, a radical idea of what Energy Humanities can be and do for our future will emerge.<sup>2</sup> Perhaps it is the authority of oil as energy that precludes its narrativization on the same level as the spice encounter or the industrial uses of coal. Perhaps it is difficult to write a compelling plot that still maps out energy infrastructures without falling into the genre trap of the thriller or presenting something massively incalculable. Beyond a doubt, the fact that its role is being re-narrated today demonstrates the age of its flourishing is at a crucial moment for intervention.

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<sup>2</sup> For a discussion of the way some of these concerns and politics overlap, especially gender and Indigenous politics, see Wilson “Gendering Oil.”

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# Three Theses on Energy and Capital

JEFF DIAMANTI

Speaking in December 2014 to the UN convention on climate change in Lima, India's environment minister insisted with stark clarity that "The world must accept that India's per capita carbon emissions will need to rise rapidly if it is to eliminate poverty" (Lawrence and Wilkes). While the very futurity of "the world" has for a long time depended on a universal cut to carbon output, in the BRIC nations—on whose economic growth both western financial markets and international consumers depend for macroeconomic stimulation—the dirty truth that co-implicates capital and energy sounds out as a political roadblock in the philanthropic crusade against 2°C. Since when has a rapid rise in capital depended upon a rapid rise in carbon—as opposed to say labour time, land, or some other source? Is the 2014-15 crash in oil prices (not to mention the 'new normal' of 2015-2016), and with it overnight shockwaves across geopolitical, monetary, and cultural spheres an expression of the same historical causality that pairs carbon and capital in the global economy? Are we witnessing today the historical apex of the carbon-capital complex, and will the natural history of energy overcome, or exacerbate the economic history of capital?

What I want to suggest here is that this carbon-capital complex—the dizzying truth that poverty is tied to a deficit in energy—will never lay far from most other environmental concerns we might have, since the political history of energy is inseparable from the economic, conceptual, and political history of capital. The following three theses are meant to address the fact that the critique of political economy looks very different with energy at the heart of it and that scholars in the growing field of Energy Humanities are in a good position to put it there:

- 1. Energy and Capital are precise opposites at the level of their concept; but,*
- 2. Energy and Capital permeate the historicity of one another once the latter industrializes the former; hence,*
- 3. A political disarticulation of Energy from Capital is a negation of the latter's historical elasticity.*

1. At the most elementary level, neither capital nor energy is a thing but a concept, or more precisely a name given to a process involving transformation either from a thing or to a thing over time. Capital (whether you are Smith, Marx, or Hayek) is the transformation of M to C to M again, and it has the unique capacity to increase its value in the meantime, while energy names the transfer of force from one state or object to another. Difference sets in once each is observed over time, however, since their temporal character unfolds in opposite directions: *while capital in circulation picks up steam, energy loses it*. Thus while both Bataille and Lefebvre were attuned to the rhythms of political economy, they gave their praise to energy's "general economy" external to the one shaping history. The second law of thermodynamics, from a positivist standpoint on economics, does not apply to capital, even if, as Philip Mirowski reminds us, the scientific ambition of 19<sup>th</sup> century political economy was to chart the "physics of society" (Mirowski 1).

2. And yet the story of capital is a fiction so long as its intensive and extensive gains since industrialization are told independent from its subsumption of literally unimaginable quantities of non-human energy into not only the production process, but across distributional logistics and modes of consumption too. If commodity (a) is itself not a plastic form of petroleum (chances are it is), its arrival at the market, in addition to its exchange value, is the consequence of an enormous and global energy infrastructure anyways, the growth of which is a governing variable in the growth of the economy as such. We might then pause to isolate typologies of energy under capital in order to get back to difference, but we'll have no luck. Oil prices alone are responsible for the vast majority of volatility in what Dr. Werner Antweiler of University of British Columbia's Sauder School of Business calls Canada's "petrocurrency," which is a mere metonym for that historical expression I am saying wraps capital in carbon's warm embrace.

Growth, too—whose conceptual debt is to biology—gives us another vista onto the dialectic since it names the accretion of energy's domination over labour. Typically, macroeconomists will use the Douglas-Cobb function to isolate the source of growth in a given cycle, where either labour deepening (more labour time) or capital deepening (more investment in the fixed forms of capital like machines) are responsible for gains, but those same economists have been at a loss since sometime in the 1970s to account for upwards of 12% of post-1945 growth. In Robert Ayres and Benjamin Warr's findings, nearly all of the missing input is made up for if energy is represented as an input variable, as a form of work unto itself, in the production process, rather than a factor of labour or capital (196). Energy in general and carbon in particular mediate in Marx has called the general law of capitalist accumulation, or the historical tendency for capital gains to be reinvested not on the labour market but in private stock (such as technology). No business owner in their right mind would replace

machines with workers (labour switching), because relative surplus value is achieved not with more labourers, but more labour productivity. Capital accumulation is both mathematically and historically impossible over time without a linear increase in energy stock.-

3. There's no shortage of cross-disciplinary efforts to correct what Laval economist Bernard Beaudreau calls the “absence of energy from production and distribution theory” (3)—the physiocrats understood it before Smith, while Fredrik Soddy, Georgescu-Roegen, Fred Cottrell, Eduard Sacher, Charles Hall, and Herman Daly have all had a good deal to say about what an energy positive theory of economics might look like. What I want to say is that *the dialectic between energy and capital exceeds the economic science of representation*. Neither a value theory of distribution, nor production-based theories of value include (or need) a historical account of social reproducibility. What more frequent and eventually terminal swings in now cyclical energy crises promise is not a more authentic hermeneutic of capital—for instance one that includes carbon in particular, or energy more generally, in its price—but a historical breakdown in the historicity of capital as an organizing principle of social and environmental exchange.<sup>3</sup> In my estimation, this helps explain why so many social and political theorists have recently begun forecasting new forms of political fascism and economic feudalism: those who sit on the receiving end of the carbon-capital complex have good reason to put up physical and symbolic walls around what they have accumulated, because while accountants have routinely externalized energy from their ledgers, everyone else has been slung around by its economic elasticity. Energy's capacity to shape both the forces of production (automation, global logistics, and so on) and alas *the forces of reproduction* (dishwashers, sanitation, food systems, electrification, the digital) has been the decisive factor postponing a logical and terminal crisis in the labour-capital relation, since capital in the postindustrial era is as much a measure of labour shedding as it is of energy deepening.

That same condition, however, has its infrastructures, choke points, off switches, pipelines, and ports of call, the particular sites of which militate against collectivization by definition and design, and are nervously shielded from a “terror” bent on breaking the accord (Canada's controversial Bill C-51 in 2015 confirmed that energy regression is a truly terrifying prospect if you are a capitalist). Every energy crisis

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<sup>3</sup> In the monograph version of this argument, its debts to critics such as Diane Elson, Paul Burkett, John Bellamy Foster, and German value theorists associated with the journal *Krisis*—Claus Peter Ortlieb and Elmar Flatschart in particular—will be spelled out in full. For a fuller account of what I would like to develop as a specifically Marxist critique of energy, see Diamanti and Bellamy's forthcoming collection on marxism and energy (MCM Prime Press).”

brings the historicity of capital closer to extinction, but without a political disarticulation of energy and capital—which is to say a collectivization of those energized forms of reproduction—there’s no reason to hope for much more than a new age dark in more ways than one.

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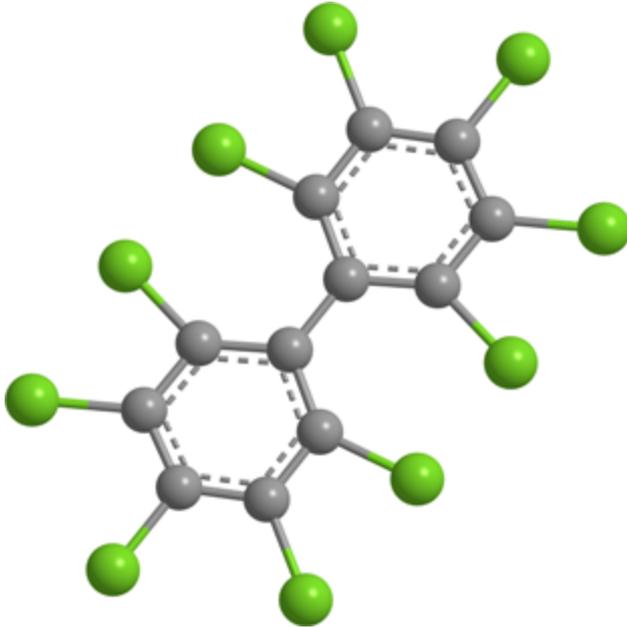
# Energy Humanities and Metabolic Poetics

ADAM DICKINSON

Energy Humanities is an emerging field of research that examines the way energy systems have shaped cultural, political, and economic formations through history. One of its defining characteristics, according to Dominic Boyer and Imre Szeman, is that Energy Humanities emphasizes the necessary contribution of the arts in re-imagining areas of study traditionally thought to be under the purview of the sciences (40). The speculative nature of this overlap between art and science invites, I would propose, a consideration of pataphysical approaches when it comes to thinking potential forms of renovated inquiry. Often dismissed as playful pseudo-science, pataphysics is defined by Alfred Jarry as “the science of imaginary solutions” (22). I see it as a creative/critical practice that transposes the methods of science, its procedural fidelities and focused analytical techniques, into alternative means and mediums in order to perform experiments on the limits of linguistic and cultural signification. By employing unconventional methods, involving ambient environmental influences and procedures, pataphysics deserves attention not only as an object, but also as a potential *form* of Energy Humanities inquiry conducting research at the complex and controversial nature-culture thresholds. After all, through the proliferation of toxic chemicals, the industrialized world is carrying out a kind of fantastic, imaginary science project of its own on the bodies of its citizens without consent. Petrochemical pollution is an example of what Timothy Morton calls a *hyperobject*, a substance so massively distributed in time and space that it requires us to re-imagine the nature of objects. Common among pataphysical works is a focus on changing scales of observation and frames of perception—whether it’s Jarry’s Dr. Faustroll shrinking down to the size of a mite to investigate a water droplet (25), or Kenneth Goldsmith’s various experiments in controlling variables of signification in “uncreative writing.”

A pataphysical approach to oil, for example, invites us to take seriously the important ways in which petrochemicals, when looked at from a different scale, constitute actual forms of writing. Synthetic chemicals have become part of the hormonal conversation of what it means to be human, rewriting the metabolic processes of our bodies (our own internal energy systems). It is safe to say that all of us have at least trace amounts of Monsanto in our blood and fat in the form of PCBs. Rick Smith and Bruce Lourie argue that “The damaging effects of hormone-disrupting chemicals on

fertility, the brain and behaviour quite possibly make them a more imminent threat to humankind than climate change” (ix).



*IMAGE PCBs*

By rewriting the biochemical messages in our bodies, endocrine disruptors underscore the importance of semiotic processes in biological systems. Synthesizing aspects of linguistics and biology, the emerging discipline of biosemiotics emphasizes that all living things exist within worlds of signification, within a *semiosphere* where the production and interpretation of signs are fundamental to life. Communicative dynamics are central to the interaction of organisms within their environments and also essential to internal endocrinological and immunological environments, where plentiful membranous surfaces interpret and respond to hormonal messages. According to Jesper Hoffmeyer, language must be seen as an extension, not a distinct break, from the biosemiotic activity of a female dove, for example, who coos not only at the male but also at her own ovaries in order to stimulate the release of eggs (118). If biosemiotics encourages us to think more broadly about communication, Jane Bennett provokes us to think about our material environment in similarly affective terms, “such as the way omega-3 fatty acids can alter human moods or the way our trash is not ‘away’ in landfills but generating lively streams of chemicals and volatile winds of

methane as we speak” (vii).

Given the implications for thinking communication and writing more broadly, how might contemporary literary artists respond to the predicament of chemical pollution and its potentially toxic effects on human metabolism? How do endocrine disrupting chemicals, as forms of biosemiotic writing, put pressure on literary forms and genres? There are examples of contemporary writing concerned with what I will call “metabolic poetics,” which might serve as a starting point for thinking pataphysical responses to the hyperobject of chemical pollution. I think of metabolic poetics as acts of reading and writing, derived from or responding to the expression of energy and energy politics in biological mediums, especially in the context of homeostatic states and homeorhetic trajectories. Juliana Spahr’s *The Transformation*, for example, is in part an ethnobotanical exploration of cultural infection precipitated by immersion in the complex politics of Hawai’i and 9/11. The book chronicles the effects of “prickly new cells” that have entered the blood, changing how the speaker and her partners think of analogy, grammar, and government (39). Other examples include Evelyn Reilly’s *Styrofoam* (plastic pollution as hyperobject),<sup>1</sup> Jenny Sampirisi’s *Croak*, a frog-and-girl opera that explores an inverse human-frog relationship where the language of chemical pollution has rewritten and deformed the bodies of frogs, and Craig Dworkin’s conceptual poem “Fact,” which presents an exhaustive list of the chemical ingredients that make up the sheet of paper the poem is printed on.

My own current method of pataphysical inquiry deals quite extensively with the metabolic poetics of oil-derived and oil-related chemicals. I am conducting biomonitoring and microbiome testing on my body to look at the way the outside writes the inside in both necessary ways (certain kinds of bacteria) and harmful ways (chemical pollution). I want to make a biosemiotic map of the toxicological and symbiotic circumstances of my body and turn it into a species of writing (a chemical/microbial autobiography) that explores the subject as an assemblage of objects, as an intimate, “trans-corporeal” expression (Stacy Alaimo)<sup>2</sup> of the hyperobject of chemical pollution. As part of mapping this “exposome” (Wild 1848),<sup>3</sup> I am in the midst of testing

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<sup>1</sup> For another poetic response to the hyperobject of plastic pollution, see my book *The Polymers*, which is an imaginary science project that combines the discourses, theories, and experimental methods of the science of plastic materials with the language and culture of plastic behaviour.

<sup>2</sup> “Trans-corporeality,” for Stacy Alaimo, “opens up a mobile space that acknowledges the often unpredictable and unwanted actions of human bodies, nonhuman creatures, ecological systems, chemical agents, and other actors” (2).

<sup>3</sup> Wild argues that we need to bring the same precision to mapping an individual’s environmental exposure that we already bring to mapping an individual’s genome.

my blood and urine for the following chemicals, which I decided upon based on the biomonitoring protocols used by the Centers for Disease Control and Prevention (USA), Health Canada, and Environmental Defence (Canada):

Phthalates,

PCBs (polychlorinated biphenyls),

PFCs (perfluorinated chemicals),

OCPs (organochlorine pesticides),

OPIMs (organophosphate insecticide metabolites),

PAHs (polycyclic aromatic hydrocarbons),

HBCDs/PBDEs (flame retardants),

Triclosan (antibacterial additive),

Parabens,

BPA (bisphenol A), and

31 heavy metals.

I am also getting my microbiome synthesized in order to discover some of the viruses, microbial eukaryotes, and fungi that inhabit my body. I plan to develop poetic compositional methods that extend out of the biological predicament of my particular body and reflect the constraints and procedures that I experience as a being composed of other beings and “volatile” materials (Jane Bennett). Preliminary tests are just starting to come in. So far it is amazing to consider how my body wears industrial, agricultural, and military history whether I like it or not (PCBs, Organochlorine insecticides, uranium). I want to see my own body, the chemicals in my blood, as forms of media expressing the biology of petroculture, expressing my own strange intimacy with the energy sources of my historical moment.

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He argues that “At its most complete, the exposome encompasses life-course environmental exposures (including lifestyle factors), from the prenatal period onwards” (1848).

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# Energy Bars

PETER HITCHCOCK

Not surprisingly, to think energy is always to address constitutive limits—the bars that ground and complicate any materialist understanding of the faintly oxymoronic term “Energy Humanities.” For efficiency—and after all, the exploitation of energy resources is about efficient resistance to anthropocentric atrophy—I will distill this response to four points about the local, the global, the institutional, and the theoretical. The idea is, on the one hand, to appreciate deeply the critical openings implicit in the notion of energy in a humanities frame; and, on the other, to register necessary incredulity that our efforts can resist the tendency to add just one more option to our endeavors rather than critique as criticality in the current conjuncture. In this way our understanding of energy bars might move beyond discourses of quotidian consumption. What does energy teach us about limits?

In Vancouver, the site of the 2015 MLA, the city is faced with a complex scene of contradiction. While its namesake in Washington state agonizes over whether to develop its harbor around upscale condos or Bakken shale oil, Vancouver already ships out 2.2 million metric tons of oil per year to enrich its local economy. The voluntary tanker exclusion zone that operates up and down British Columbia does not apply to oil ports like Vancouver, where most of the oil tankers and barges ply their trade. Whereas voluntary compliance around environmental protection is usually an oil business charade, the Canadian government has decided to spare the oil shippers from playing even this gesture in Vancouver. There are thousands of eco-activists in and out of academe in Vancouver who resist the inevitabilities of an oil economy, and the point is not to disparage their ongoing efforts (the Green Party is particularly strong in Vancouver and the NSV movement [Neighborhoods for a Sustainable Vancouver] has greatly enhanced environmental dialogues and practices in the city). But for all that, local power (in all of its senses) is distributed the old fashioned way and reminds us that the first law of energy business is inertia and necessitates a consonant force to oppose it that would break the cycle rather than settle for recycling.

There is a huge literature on price manipulation in the energy industries (it's worth noting such massaging of price also applies to renewables, particularly in solar panels). Oil, of course, has been geopolitically fixed for decades, especially since the crises of the early Seventies, and has often come to the rescue of America as a failing hegemon, where depressed oil prices dissipate the more than nagging suspicion of its

working classes that their wages have barely moved in forty years. The geopolitical bar on energy now finds pricing overdetermined on one level by the U.S. ramping up its pumping and fracking as an expert export play, and on another as a rather obvious punishment of Putin-inspired expansionism. Whereas the collapse of the Soviet Union was accelerated by a fake arms race, the reining in of Russia can now be achieved by an equally fraudulent desire to push the price of a barrel of oil well below the \$100 necessary to keep the oligarchic orgy humming and delusions of grandeur grand. Will this pricing reach those for whom it would represent a tangible material benefit (for heating, cooking etc. in the global South)? There are many reasons this cannot last long, but one payoff will come in the 2016 U.S. presidential election when those who have played the game will be offered their inertial treats (light hands on resource exploitation, pricing, environmental restrictions, taxes, etc.). Much more than the Energy Humanities, carbon democracy is a quintessential oxymoron that often means the pleasure of doing business, geopolitically. Perhaps the humanities should not let this limit demarcate the arenas of its concern.

The Energy Humanities is a *primum mobile* of the public/private split in institutions of higher learning. It is increasingly clear that the luxury of studying energy in the humanities pivots on a resource war. Simply put, in public institutions like mine that boast part time instructional rates approaching 70%, allocations to the humanities, and new initiatives like ecological critique, are in short supply. The environmentalism we deal with concerns matters like class size determined by the fire marshal (not by pedagogy), security for Saturday classes, and when to deactivate escalators and elevators to save on repair bills (not power, necessarily). With a university so starved of tax dollars, the humanities is merely a discretionary cost and is more in danger of extinction than the polar bear. The humanities in the United States was a public initiative coterminous with the formation of its state. If the humanities wants to talk energy it might also usefully discuss how it has been drained of its public mandate.

A fourth reference point suggests the Energy Humanities offers tremendous opportunities, and not just those of opportunity cost or crass opportunism. Theoretically, it enjoins all of those intellectual, cultural and political aspirations we associate with interdisciplinary commitment. Within materialist theory, it has long been a space where critical concepts can be rewritten or transformed by deeply ecological imperatives. In my work the micro and macro realities of energy are striated or complexly interanimated by ideological critique which occasionally weaves the aesthetic, the economic, and the political in surprising ways, including the methodological shock of thinking ideology today in the first place. But it also usefully challenges theoretical shibboleths and gestural intellectualism so that what Althusserians might call a problematic is further problematized and sometimes undone by placing the transnational division of energy, let us say, front and center in how we conceptualize the

world. If for me this is often a postcolonial question (for instance, LED for the west, incandescent for the rest) it is clear that its cultural suasion needs a new grammar, an ecological syntax. And the humanities help to foster this language of change.

Limits within the academy, of course, cannot simply be calibrated according to scarcities across energy markets, but the antinomies of both constitute a timely and critical juncture for the humanities. As the late and dearly missed Patricia Yaeger pointed out in her Editor's Column for the *PMLA* a few years back, energy has long been a creative source for artists and critics in understanding the ways we constitute "living" on this planet. The point in foregrounding such discussion within the humanities is not to forget about limits, but is rather to focus on the imaginative challenges they represent. This does not simplify the discourses of energy and their capacity to both improve and ravage the conditions of actual existence. Instead it takes such limits as also a problem of cognitive capacity, a place where culture and all the worlds we make may need refueling of a very different kind.

# Infrastructure Again, and Always

STEPHANIE LEMENAGER

This essay grows out of a roundtable meant to assist the development of the so-called Energy Humanities. Each participant was asked to contribute a generative question. Mine was the question that now begins every conversation in the Humanities, that of scale. I asked it because it is unavoidable. The scale problem seeds and feeds the Environmental Humanities, which is an aspirational, activist, interdisciplinary field that grew from rising awareness of global climate change, from a need driven both organically and institutionally to declare the Humanities as transformational cultural practice, and from an informed disgust about the ecological and social costs of economic globalization. Tian Song wryly reminds us that greenhouse gases are global “garbage,” (Song 2012) and analogously the Environmental Humanities assume a global waste-archive through which to sift, assembling cultural knowledges, from the traditional to the digital, in response to the injuries of neoliberalism. Generative works such as Allan Sekula’s *Fish Story* (1995), Gay Hawkins’ *Culture and Waste* (2002), Anna Tsing’s *Friction* (2005), and Rob Nixon’s *Slow Violence and the Environmentalism of the Poor* (2011) explore the dizzying swings between micro- and macro-scale crises enabled by neoliberalism as it has been exported worldwide and as it manifests itself in a North American landscape for forty years marked by labor’s devaluation, manufacture’s outsourcing, resource wars, and new forms of fossil fuel extraction with massive external costs.

Living oil in the U.S.A. of the twenty-first century is living subprime. It’s living bankrupt in suburbia on fire, as are so many southern Californians that a Los Angeles-based Zombie radio podcast titled (hopefully) “We’re Alive!” has been adopted as an interactive collective resiliency plan through fan fiction. Living oil is living out of a truck and conceiving oneself as “living the dream” because you can turn your key and get “heat” and “music,” as does a Bakken oil worker in Isaac Gale and Alec Soth’s haunting documentary about transient labor in Williston, North Dakota, “Sweet Crude Man Camp” (2013). Living oil is the subprime dream of the new American middle class, as we are reminded by the recent rapid expansion of subprime auto loans in the U.S.A., which indicate not only a continuing financial landscape of Wild West deregulation but also the real need of U.S. workers—without good credit, striving—to travel to their jobs by car where there is no public transport. Living

oil—the title of my most recent book—is living within the infrastructure that fossil fuels made, since roughly 1930. It’s living in the old century, the twentieth, but without many of the safeguards (a genuinely progressive tax structure, labor rights, civil rights) hard won in that century that made it boom. And today living oil is living without oil, in that the relatively cheap, more easily extracted energy of the twentieth century is gone, as is our ignorance of the connection between fossil fuels and climate change. “There is a good taking for granted and a bad taking for granted, and at least theirs was good then,” writes Rick Bass about “people of the thirties, forties, fifties, sixties, and seventies who used Too Much Gasoline, Too Much Energy” (171). His own generation, he laments, has “a little more awareness,” so the party’s over (171). Bass published the book these quotes come from, *Oil Notes*, in the same year that Bill McKibben published *The End of Nature* (1989), the first popular treatment of global climate change. Both books are anxious as hell about what comes after the frontierist phase of U.S. cultural and economic imperialism that brought us, it now seems, the end of the inhabitable world.

Living oil is persisting, holding on—all etymological implications of living—in the infrastructure that oil made. As Adam Dickinson writes in the brilliant *The Polymers* (2013), a collection of poetry and provocation about the complex molecular chains we associate with petrochemical plastics, “We have nothing to read but our chains. Our chains reread us precipitously” (3). Today our trains re-read us precipitously. I mean the long, heavy trains that an anarchist photographer in my hometown of Eugene, Oregon, has identified as carriers of Bakken crude. Since Lac-Mégantic, such trains, running through the Canadian and U.S. West, toward the Pacific, and otherwise toward the Gulf and the Atlantic coasts, are conceived as “oil bombs” rather than the sentries of North American wealth and promise that trains were for small towns of the 1920s, 40s, 60s, or the 1880s, for that matter, with their happy resonance memorialized in the work of Sherwood Anderson, Willa Cather, and Wallace Stegner. Oil train traffic has increased some 4000% since 2008, small towns in the Pacific Northwest suffer traffic jams as cars await the passage of oil trains at local street crossings, oil trains coming through in the tens and soon hundreds per week, oil trains easily derailed because they are longer and heavier than they should be, exceeding the 30-car limit of the “no problem” train as declared by the American Association of Railroads, oil trains newly regulated for travel at speeds (40-50mph) deemed unsafe to prevent puncture in the case of derailment and still, in some cases, using old DOT-III railcars designed for less flammable, lighter crudes than those of the Bakken shale or the Athabaskan oil sands.<sup>1</sup> Trains designed to carry oil that no

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<sup>1</sup> Oil train facts and figures from Jared Margolis’s *Runaway Risks* and Matt Krogh’s report *Off the Rails*, a report prepared by Matt Krogh, Campaign Director at ForestEthics with contributions of research and analysis by Eric de Place, Policy

longer exists, carrying oil that does. They reread us, as we read them, our precipitous supply lines. The “living” in living oil has connotations of belief, with which it shares an Indo-European base, but also of leaving, which shares that same base. Those indigenous, farming, and environmentalist coalitions who Naomi Klein represents as an international geopolitical movement, “Blockadia,” suggest that a politics of refusal—eg. *leaving* oil—starts with disrupting the infrastructure.

Marshall McLuhan described infrastructure as media. Along similar lines, one could say that infrastructure is embodied memory. As I describe in a gloss on my concept “petromelancholia,” by which I mean an endless grieving and thus re-mem-bering of oil suffered by the oil industry, by well-oiled lobbyists and politicians, by (some) everyday North Americans: “The petroleum infrastructure has become embodied memory and habitus for modern humans, insofar as everyday events such as driving or feeling the summer heat of asphalt on the soles of one’s feet are incorporating practices, in Paul Connerton’s term for the repeated performances that become encoded in the body. Decoupling human corporeal memory from the infrastructures that have sustained it may be the primary challenge for ecological narrative in the service of human species survival beyond the twenty-first century” (LeMenager 2014, 104). An ironic new ad campaign by Volkswagen named “Mémoire de Pétrole” celebrates the electric-model V.W. *Golf* by offering the scent of gasoline—“Mémoire de Pétrole” is a cologne—to speak sensually about a fossil fuel age gone by. Enter the e-Golf, goodbye petroleum aesthetics—sights, sounds, smells. “Presented alongside work by Berlin-based photographer Attila Hartwig [psychedelically colored photographs of oil spills], Mémoire de Pétrole was passed through the crowd, spritzed onto thin blue ribbons...”<sup>2</sup> While Germany’s famed *Energiewende* or energy transition comes under fire because of its balancing investments in coal, this promotional stunt feels idiotic in the tautological sense, an “idiotcy” of mirroring *as* meaning that Jennifer Wenzel implies when she speaks of “petro-porn,”<sup>3</sup> the mere display of our diverse affective investments in petroleum and petrochemicals *as* critique.

Yet one cannot dismiss Mémoire de Pétrole as such idiotcy without considering the dramatic irony that shadows it: today fossil fuels are bigger than Jesus Christ, to paraphrase John Lennon’s blasphemy, and the U.S.A. stands to outpace Saudi Arabia as their number one producer in merely five years. Mémoire de Pétrole *IS* the scent of the twenty-first century, in that always-already way that makes pointing it out seem naïve. Yet by lifting it from of the realm of the subliminal, swanking it up on thin blue ribbons in a gallery or putting it on the Web as a faux-glossy advertise-

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Director at Sightline Institute.

<sup>2</sup> Many thanks to Nicole Seymour for this reference.

<sup>3</sup> See Wenzel “Taking Stock of Energy Humanities” in this issue.

ment for scent, Volkswagen advertises the way that infrastructure works, again, as memory, and how alternate infrastructures—for instance a road system that sustains the electric car—might create new memories, neuronal pathways, politics, desires. The “alternative hedonism” Kate Soper has called for. Infrastructure, like memory, is determinative *and* design-able.

When we talk about deliberate memory, memorization or memory making, we often talk of maps—cognitive maps, mnemonics, even mapped paces around a room, meant to spur recall. Mapping can be tactical, in a way that memory isn’t supposed to be—and yet can be, too. When she was an undergraduate college student, Emily Ferguson, the Ontario-based blogger of “Line 9 Communities,” stayed up night after night assembling satellite images, publicly available information and integrity data, creating a map of an Enbridge pipeline whose route had been withheld at a public meeting. The map got tens of thousands of hits in a few weeks, and it made Ferguson a figure of national importance in Canada, a representative to Canada’s National Energy Board.<sup>4</sup> Ferguson and Jeffrey Insko, a professor-activist in Michigan whose property has been earmarked for an Enbridge pipeline, identify the formation of “citizens along the line” as an innovative rethinking of bioregionalism, the summoning of political community along pipelines, oil-track, stressed grids.<sup>5</sup> The “region along the line” is infrastructure critically remapped and remembered, under the pressure of violated property rights or tribal sovereignty. As DIY speculum culture was to the feminist revolution, DIY mapping might be to North America’s grassroots *Engeiwende*. Map it. Know thyself. Walk the line.

This essay began with the question of scale and has performed an answer to that question without directly addressing it, until now. Has it become apparent that I see infrastructure as the interface of multiple scales, as a means of finding, within overlapping and at times unthinkable systems, point of view? Reframing the everyday so that its obscured workings become visible has been called defamiliarization in literary criticism and an geographic aesthetic orientation or “poetics of infrastructure” by the Center for Land Use Interpretation’s Matt Coolidge.<sup>6</sup> It’s been called radicalism by the sociologist Harvey Molotch, who described “radicals” in the wake of the Santa Barbara oil spill of 1969 as “persons who live in conditions where injustice is apparent, and who have access to more complete information about their plight than the average man, giving them a perspective that allows them to become angry in a socially meaningful way” (44). Living oil is people becoming angry in a socially meaningful

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<sup>4</sup> See Ferguson *Line 9 Communities*.

<sup>5</sup> See Insko “Line 6B Citizens Blog.”

<sup>6</sup> See my interview with Matt Coolidge in *Resilience, A Journal of the Environmental Humanities* 1.1.

way, at the interface of overlapping scales, of global markets and polymers. Map your supply lines, your pleasures. Re-read them. Not precipitously.

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# Taking Stock of Energy Humanities

JENNIFER WENZEL

Soon after I arrived at Columbia University last fall, I was asked whether I would like to be nominated for a sustainability award sponsored by the Resnick Institute at CalTech. In 250 words or less, I had to describe my invention, including the potential market for it and whether it could be scaled up. For a humanist, these are strange questions to contemplate. Indeed, how can our work in the nascent field of Energy Humanities be described as an invention, or as a contribution to sustainability, however we define that tricky term? Even if we tend to think more in terms of *interventions* than *inventions*, what claims can we make about the work that, say, poetry, metaphor, narrative, point of view, imagination, close reading, or the humanities more broadly can do in the world?

Much of my intellectual energy in the past few years has been devoted to capacity-building work in the environmental and Energy Humanities. I've written spiel after spiel—for audiences including an environmental studies class at Austin College (my undergraduate alma mater in Texas), the folks at CalTech, and the president of Columbia University—to explain how the humanities' signature questions, modes of inquiry, and habits of mind can help us grapple with some of the most urgent challenges of our time: environmental crises, dependence on finite resources, and the economic inequalities and power imbalances that both create and result from these problems. In the classroom, too, my students are most consistently moved and politicized by questions of environmental and energy justice. (One particularly earnest student reported spending the weekend learning to ride a bike after reading Michael Watts' and Ed Kashi's photo-essay book *Curse of the Black Gold: 50 Years of Oil in the Niger Delta*, "so I never have to drive a car again.") The world is hungry for the kinds of knowledge and critique we have to offer.

Yet the work of building an academic field brings challenges of its own. One is the contradictions among the various imperatives that shape scholarly production. My aforementioned spiels on the Energy Humanities enumerate the ratios and equivalences at work in fossil fuels, which quantify energy in term of vast scales of space and time, or calculate the muscular equivalents – whether human or animal – of machines that run on mineral energy. How can we understand the discrepancy between

the everyday tedium of filling the gas tank and the sublimely discrepant timescales at work in fossil fuels, the ways in which geologic past, technological present, and environmental future overlap and collide? How many oceans full of tiny creatures had to die and fossilize over how many millions of years in order to produce the 10 or 20 gallons of gas that you put in your tank? How many “energy slaves” would you require to perform the work that coal, oil, and natural gas do in your everyday life? “At some point,” as I write in the introduction to “Fueling Culture: Energy, History, Politics,” “this arithmetic gives way to an alchemy that turns dirty energy to gleaming gold.... It enable[s] an economy and infrastructure of the as-if, where one reaps the benefits of resources that one does not actually have.” These ratios and conversions will blow your mind if you let them, but we mostly don’t let them: that’s the secret of petro-magic’s conjuring trick.

At some point in tabulating this fuzzy math, however, I start to feel like the man behind the curtain. It’s as if I’m the magician, pulling the rabbit out of the hat, night after night: *voilà!* petro-complacency, *take that!* I begin to perceive the conventionality and inadequacy of the shtick. My concern has to do both with the deep intellectual pleasure that I derive from the frisson of oil’s quotidian/sublime, and with the repetition of the gesture in my own work and elsewhere in this emergent field. When more and more of us in the Energy Humanities are making these moves, they can start to feel like a kind of petro-porn. *Ok, there you go again with the temporal and material mindfuck of oil. What else you got?* In other words, our goal is not the endless (and endlessly pleasurable) proliferation of neologisms that begin with *petro-*, but instead a future under the sign of some other prefix.

I would offer two and half ways of thinking about this concern.

First, acknowledging the pleasures of—and even love for—oil is a necessary aspect of understanding our relationship to it. Given its ubiquity in our daily lives (at least in energy-rich societies), nearly everyone derives some kind of pleasure from the world that oil has built. Disavowal of such pleasures or, even worse, abstemious shaming of other people’s “addictions” does not offer a promising path toward critical understanding and transformation.<sup>1</sup>

Second, the repetition of conceptual moves might be described rather differently, as the work of forging a methodology and consolidating a field. The imperative of *originality* in scholarly production—which repetition seems to contravene—could be understood in terms of Foucault’s distinction between authors and “founders of discursivity”: figures like Marx and Freud who are “authors of a theory, tradition, or

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<sup>1</sup> See LeMenager, *Living Oil*.

discipline in which other books and authors will in their turn find a place” (153-54). Adapting and democratizing this distinction, we might say that, taken together, the individual work of pioneering scholars in emergent fields like Energy Humanities can also have a collective function of founding a discourse and creating the matrix within which conversation becomes possible. (See, for example, Brent Bellamy’s above enumeration of possible methodologies for studying literature and energy).<sup>2</sup>

Alternatively, and more tentatively, it’s worth thinking about scholarly production *as* production, and the demand for originality (and scholarly “productivity” itself) in terms of hyperconsumption, planned obsolescence, and the eternal lure of the “new and improved” as strategies for managing capitalism’s own imperative—grow or die—which has for more than a century been premised on cheap energy. Because oil is, in a manner of speaking, *everything*, Alan Stoekl insists that “we need to do *more*” than to understand it in chemical or capitalist terms (xiv); Ross Barrett and Daniel Worden argue that it “requires *more* than just a commitment to alternative energy, *more* than just individual consumer choices” (xix); and I seek a methodology that offers something *more* than a list of texts about oil to show how wrong Amitav Ghosh was about the paucity of petrofictions. By “more... more... more,” all of us mean a qualitative difference, new thinking adequate to the seemingly infinite power of this finite power source. Yet our critical desire (for another kind of originality) veers uncomfortably close to oil’s love affair with quantity, its mantra of *more*.

A second challenge in this emerging field involves the kinds of knowledge we ask students to produce. In my course on “Literature and Oil,” students write an “Oil Inventory,” an assignment inspired by a line from Antonio Gramsci that Edward W. Said cites in the introduction to *Orientalism*: “The starting point of critical elaboration is the consciousness of what one really is, and is ‘knowing thyself’ as a product of the historical process to date, which has deposited in you an infinity of traces, without leaving an inventory” (25). In their Oil Inventories, students trace the presence (or absence) of oil and its history in their own lives. I encourage students to take risks with the form of the inventory; the results are fun to read and get the students to think about themselves analytically, structurally, and imaginatively.<sup>3</sup> This exercise offers a kind of inoculation against that too-easy depoliticizing gesture of pointing out energy hypocrisy (whether one’s own or others’), as if anyone who drives or flies or eats Kellogg’s cornflakes forfeits the right to wonder and worry about fossil fuels. We are oil subjects who inhabit a society predicated on fossil fuels: that’s the big picture the Oil Inventory invites students to glimpse.

<sup>2</sup> See Bellamy “Energy and Literary Studies” in this collection.

<sup>3</sup> For a discussion of this assignment and the course, see Wenzel, “How to Read for Oil.”

And yet. The “Oil Inventory” is an effective assignment that transforms students’ thinking individually and in our collective discussion. The problem is that I haven’t figured out a follow-up assignment that would ask students to *do something* with the self-knowledge they’ve produced in an inventory that Said and Gramsci understood as preliminary, preparatory for something else. At least for the purposes of this roundtable, I’m going to say that this failure is not because of my own lack of creativity, but instead because of the topic itself: *because oil*. It feels like a pedagogical version of what Imre Szeman calls “impasse,” the predicament of “know[ing] where we stand with respect to energy,” yet not being able to act in a way adequate to that knowledge (324). I’ve figured out how to get students to begin to know themselves in relation to oil, but not how to ask them to write 5-7 pages that will use that knowledge to cut into the world. And to scale up my own little failure to the emerging field at large: now that we have an energy humanities, what exactly do we think it can do?

One of the less encouraging lessons that I take from the historical work of scholars like Matthew Huber is that the Oil Inventory was actually invented by the oil industry. In “Refined Politics,” Huber analyzes advertising campaigns dating back to the 1940s that ask consumers to consider the ubiquity and indispensability of petroleum products in their lives. ExxonMobil has actually such been running such a campaign this year: “Energy Lives Here™” features a TV commercial called “Enabling Everyday Life,” which traces the global energy and transport infrastructure necessary to boil an egg.<sup>4</sup> This ad offers a perfect example of Huber’s somewhat paradoxical but no less powerful argument that the energy industry creates knowledge and awareness of our dependence on oil precisely in order to ensure passivity. In the ExxonMobil commercial, the voiceover implicitly asks viewers to *forget* the ad’s own revelatory visual mapping of all that is involved in boiling an egg: “you don’t need to think about the energy that makes our lives possible....because we do.” Our task in the energy humanities is to reclaim that thinking from the industry, a task made harder because capitalism understands the workings of the imagination and desire better than we would like. In other words, we are at an impasse not merely *despite* our knowledge about energy, but also, at least in part, *because* of our knowledge about energy.<sup>5</sup>

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<sup>4</sup> See “Energy Lives Here™.”

<sup>5</sup> See Wenzel, “Consumption for the Common Good?” for a broader discussion of the paradoxical relationship between knowledge and action in commodity capitalism.

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