



## THE SOAPBOX

# The Use of Energy History

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While there is no energy determinism, there is a powerful energy determination at work in all societies.

—Jean-Paul Deléage, Jean-Claude Debeir, and Daniel Hémerly<sup>1</sup>

In a beguiling 1977 essay titled “The Use of Energy,” the agrarian writer Wendell Berry diagnosed the roots of America’s ongoing “energy crisis” in the inescapably cultural nature of energy and its use. Given widespread hopes for creating technologies capable of delivering “infinite” amounts of energy, Berry saw the use of energy as “an issue of religion” tied to dreams of transcending limits and questions of how humans ought to use the energies available to us to live well on this earth. “Our technology,” he noted, “is the practical aspect of our culture. By it we enact our religion, or our lack of it.”<sup>2</sup> Berry also discerned a series of cultural losses in the transition from a moral order rooted in the biological energy of living things to one dependent on “machine-derived energy,” including the loss of an interdependent “energy community” and of the deeply felt knowledge “of essential sources, dependencies, and relationships.”<sup>3</sup> And so, he insisted, the energy crisis—and the way out of it—was not primarily a matter of producing more and better power. It was a matter of use, of culture and re-cultivating the ability to see the value of restraint and the limits of being human—values that he felt America’s regime of fossil-fueled machines had marginalized and threatened to extinguish. Anticipating energy history and energy humanities scholars by about thirty years, Berry argued that the use of energy both expresses and shapes cultural values and practices. But his urgent question was whether cultural values and practices could be marshalled to remake the use of energy.

Berry’s essay often comes to mind when I reflect on the use of energy *history*, which has emerged as a dynamic area of critical historical inquiry into the deep and varied roles that energy resources (for example, coal, oil, wind), concepts, and politics have played in the past, and which is now threatening to become a subfield. When it was published, Berry’s insight about the cultural dimensions of energy use ran against traditional and entrenched ways of thinking about energy resources, which tended to imagine specific resources, such as coal or

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<sup>1</sup>Jean-Paul Deléage, Jean-Claude Debeir, and Daniel Hémerly, *In the Servitude of Power: Energy and Civilization Through the Ages* (London, 1991), 13.

<sup>2</sup>Wendell Berry, “The Use of Energy,” in *The Unsettling of America: Culture and Agriculture* (Berkeley, CA, 1977), 86. The use of energy, for Berry, was also about the relations between machines and organic life, consumption and waste, socio-ecological order and disorder, knowledge and labor, the cultivation of food and health, and more.

<sup>3</sup>Berry, “The Use of Energy,” 89, 96. In this, Berry also anticipated E. A. Wrigley’s distinction between the “organic” and “mineral” regimes. See E. A. Wrigley, *Continuity, Chance, and Change: The Character of the Industrial Revolution in England* (Cambridge, UK, 1988).

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oil, as culturally neutral inputs into economic systems, technologies, infrastructures, and geopolitical relations.<sup>4</sup> This way of thinking continues to prevail in North America, which is even more technophilic and technocratic than it was in 1977. In this context, historians and other practitioners of humanities disciplines increasingly feel pressure to explain our use to our institutions and to our students, who seem to prefer the STEM disciplines and other more obviously pragmatic bodies of knowledge and practice. In an era of careening financialization; metastasizing digital tech, digital media, and artificial intelligence (AI) deepening economic inequality; and profound health and climate crises; declarations about the long crisis of the humanities have revived and intensified. Why study history or literature when the world needs to develop new technologies and efficiencies to enable an energy transition that will avert or minimize the climate crisis and its myriad consequences, or when AI will efficiently do the work of research and interpretation for us? In many quarters, our problem does not seem to be one of use so much as it is one of supply: the supply of actionable innovations, the supply of solutions.

Arguments about the use value of history are as old as the practice of history itself and have taken many different forms.<sup>5</sup> A growing number of contemporary historians, perhaps seeking a use for history or responding to the relentlessly utilitarian incentives of academic institutions and funding sources, are turning to the study of energy's history to show how careful historical research can speak to contemporary climate challenges and contribute to the formulation of durable solutions. This is one reason why "energy transition," a concept that first gained broad interest during the 1970s energy crisis and is now ubiquitous in climate policies and debates, has emerged as a key line of inquiry in the new energy history, which includes the histories of energy resources and their varied social, political, and economic effects written in the wake of the Iraq War and the intensification of climate change discourse.<sup>6</sup> Historians, the reasoning goes, are experts at explaining change over time, and so are well-positioned to explain how one energy regime gives way to another, and in so doing can inform the energy transition to renewables that the climate crisis demands by helping policy makers understand the nexus of factors at play in any given shift from one dominant source of energy to the next.<sup>7</sup> The use of energy history, according to some scholars, then, is to explain how certain societies came to rely on finite and polluting fossil fuels to better understand how that dependence might be undone and reconstituted around more sustainable sources. The value we can offer, according to a new book edited by Stephen G. Gross and Andrew Needham, is to highlight the human agency and conflict—the *complexities*—of energy transitions, which they argue ought to be conceptualized

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<sup>4</sup>Energy is a politically and culturally loaded concept with many meanings in science, economics, popular culture, and elsewhere. For the sake of simplicity, I am using "energy" in this essay to refer to the abstraction of the "ability to do work" and to the resources that humans use to do work (e.g., wood, oil, coal, etc.). Energy historians study energy defined in these ways, as well as the infrastructures, meanings, policies, capacities, and relations associated with them. On the varied meanings and history of the concept of energy, see Cara New Daggett, *The Birth of Energy: Fossil Fuels, Thermodynamics, and the Politics of Work* (Durham, NC, 2019); and Ivan Illich, "The Social Construction of Energy," in *Beyond Economics and Ecology: The Radical Thought of Ivan Illich*, ed. Sajay Samuel (1983; London, 2014), 105–23.

<sup>5</sup>See, for example, R. G. Collingwood, *The Idea of History* (1946; New York, 1956), 19, 315–34. Collingwood posited human self-knowledge as the purpose of historical study, which he also took to be the foundation for social progress. More recently, Lynn Hunt linked history's use to its role in truth telling about the past and present. Lynn Hunt, *History: Why It Matters* (New York, 2018).

<sup>6</sup>For examples of the prevalence of energy transition, see Christopher F. Jones, *Routes of Power: Energy and Modern America* (Cambridge, MA, 2014); and Ian Miller et al., "Forum: The Environmental History of Energy Transitions," *Environmental History* 24, no. 3 (July 2019): 463–533.

<sup>7</sup>Richard F. Hirsh and Christopher F. Jones, "History's Contributions to Energy Research and Policy," *Energy Research and Social Science* 1 (Mar. 2014): 106–11. On "energy regimes" see J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York, 2000); and Michael Niblett, "Energy Regimes," in *Fueling Culture: 101 Words for Energy and Environment*, eds. Imre Szeman, Jennifer Wenzel, and Patricia Yaeger (New York, 2017), 136–9.

not as a clear progression from one energy regime to the next, but rather as layered and continuing transformations (Figure 1).<sup>8</sup>

This reformulation of energy transition as ongoing process is a response to Christophe Bonneuil and Jean-Baptiste Fressoz's insight that there have not really been any energy transitions so much as there have been energy additions, and it is a welcome one.<sup>9</sup> Historians are indeed experts in explaining change and should continue to study the diverse effects of shifting systems of energy provision. Doing so will undoubtedly help us to understand a once-underappreciated material force in historical change.

But I nevertheless share Bonneuil's and Fressoz's concern about the utilitarian managerialism that haunts energy history—as well as its potential ideological footpaths—that is evident in frequent claims that our work can help policy makers.<sup>10</sup> In the first place, I tend to agree with former American Historical Association President Carl N. Degler, who observed at the tail end of the 1970s energy crisis that “history is not really a policy science” that can “offer clear policy proposals ... or produce a new source of energy.”<sup>11</sup> I am not sure that telling policy makers (if they, whoever they are, read our work at all!) “it's complicated and political” will really help them to formulate better solutions, and I wonder if “policy” as it is currently practiced has even been much of a driving force in past energy transformations. Above all, as Bonneuil and Fressoz point out, I am concerned that if the new energy history frames itself too narrowly in relation to energy transitions, even if they are studied as complex and ongoing transformations, it will be difficult to break free of the technocratic ideologies and managerialism that currently dominate our institutions and hegemonic approaches to arresting climate and environmental catastrophe.<sup>12</sup> Energy history configured as the study of energy transitions-as-transformations risks overlooking *use*, both in terms of the need to reduce the total use of energy rather than merely reconfiguring it (remember, there have only been energy additions) and in the potential use that this time of energy transformation has for deeper social transformation.<sup>13</sup> It also risks missing out on the many and diverse ways in which, as both Wendell Berry and David Nye have argued, energy use and culture exist in relation with each other.<sup>14</sup>

What, then, is the use of energy history if it is to be liberated from technocratic managerialism, if it must do more than study transitions? My approach in this essay is to start with the uses of energy for history, rather than with the uses of history for energy transition. This means thinking about how materiality—energy is, after all, a form of materiality—might complicate and reconfigure established narratives, concepts, and orientations toward the past, and to the world. To do that, I want specifically to put the emerging global energy humanities field into conversation with historians of modern America, to explore the insights and challenges that focusing on the uses, capacities, and meanings of energy might entail. The picture that will

<sup>8</sup>Stephen G. Gross and Andrew Needham, “Introduction: Toward a New Energy History,” in *New Energies: A History of Energy Transitions in Europe and North America*, eds. Stephen G. Gross and Andrew Needham (Pittsburgh, 2023), 15.

<sup>9</sup>By this, Bonneuil and Fressoz mean that the history of energy resources is the history of adding new fuels to existing ones rather than the new entirely replacing the old. Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History, and Us*, trans. David Fernbach (New York, 2016), 101. Several historians make this case in R. W. Sandwell, ed., *Powering Up Canada: A History of Power, Fuel, and Energy from 1600* (Montreal, 2016).

<sup>10</sup>Bonneuil and Fressoz, 101. See Christopher Jones, “The Carbon-Consuming Home: Residential Markets and Energy Transitions,” *Enterprise and Society* 12, no. 4 (2011): 790–823; and Peter J. G. Pearson, “Past, Present, and Prospective Energy Transitions: An Invitation to Historians,” *Journal of Energy History* 1 (Dec. 2018), <https://energyhistory.eu/fr/dossier/past-present-and-prospective-energy-transitions-invitation-historians>.

<sup>11</sup>Carl N. Degler, “Remaking American History,” *Journal of American History* 67, no. 1 (June 1980): 20.

<sup>12</sup>Bonneuil and Fressoz, 101–2. Such ideologies are also fodder for unsavory forms of populism.

<sup>13</sup>On energy and social transformation, see Petrocultures Research Group, *After Oil* (Morgantown, WV, 2016); and After Oil Collective, *Solarity* (Minneapolis, 2022).

<sup>14</sup>David Nye, *Consuming Power: A Social History of American Energies* (Cambridge, MA, 1998).



**Figure 1.** Frank Lodge's photograph of a prototype electric car charging in October 1973. The original caption reads: "Exhibit at the first symposium on low pollution power systems development held at the Marriott Motor Inn, Ann Arbor. Vehicles and hardware were assembled at the EPA Ann Arbor Laboratory. Part of the exhibit was held in the motel parking lot. General Motors urban electric car gets battery charge. In the background (left) is the EBS electric 'Sundancer.'" EPA-Documerica—Frank Lodge, Record Group 412, National Archives II, College Park, MD.

emerge is one in which attending to energy while enlarging energy history to encompass not only transition, but also currents of cultural values and practices, deepens our understanding of past human experience while also critically reorienting our present perspectives and practices.

To that end, the rest of this essay explores the use of energy history in three parts. The first situates it in relation to crisis and freedom; the second explores how it complicates the grand narratives, certainties, and analytical tendencies of modern U.S. history, which has not sufficiently reckoned with the U.S. role in the formulation of fossil-fueled modernity; and the third section turns the energy lens on historical practice. Modern history as an intellectual pursuit and professional discipline formed during the "great acceleration" of energy and resource use, but its practitioners have been reticent to confront the implications of that

fact.<sup>15</sup> Perhaps we are feeling too embattled to reflect on the entanglements of our discipline with intensive energy use. But, if we take seriously the epistemological and ontological claims of the energy humanities, that certain sources of energy inform modern social and intellectual life, and that access to those energies is integral to our modernity, then we must think through how history as it is currently conceived and practiced might need to evolve in relation to that energy critique.<sup>16</sup> Doing so can only make it more robust and relevant to conditions of the present.

### Crisis, Freedom, and the New Energy History

Despite the recent flurry of interest in the subject, energy history is not all that new. It has never been a majority pursuit, but historians have long studied different energy resources, technologies, and cultures, even if they did not envision themselves as practicing “energy history.” Such studies were usually conceptualized as existing in other fields: cultural history (Kern), environmental history (White), social history (Nye), the history of technology (Hughes and Hecht), labor and political history (Rabinbach), economic and demographic history (Wrigley), and international relations (Painter), among others.<sup>17</sup> Some of these scholars were writing as part of the wave of energy studies that crested after the 1970s energy crisis, others were drawn to energy as a metaphor or analytic for other reasons. Many of these works remain vital and compelling, and they should continue to inform the efforts of historians now turning to energy. There is a richness to how these older works treat energy, as a factor and well of metaphors for the politics of labor, as a way of knowing nature, as entangled in sociotechnical systems, as cultural fuel, and as a driver in social change. They suggest possibilities for energy history within and beyond transition, within and beyond the endless search for solutions.

The new energy history is different from this earlier literature in two key ways. First, it is a more coherent body of work that has come to be pursued more self-consciously as “energy history,” with a growing series of institutional infrastructures to support that self-reflexive practice in the form of job postings, conference panels, working groups, journals, and special issues. The publication of Timothy Mitchell’s provocative book *Carbon Democracy* in 2011 followed by the *Journal of American History*’s excellent special issue on oil in 2012 gave significant impetus to the new energy history.<sup>18</sup> Since then, it has grown rapidly through the publication of many

<sup>15</sup>J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA, 2016).

<sup>16</sup>Ross Barrett and Daniel Worden, “Introduction,” *Oil Culture* (Minneapolis, 2014), xx; Dominic Boyer and Imre Szeman, “On the Energy Humanities,” in *Energy Humanities: An Anthology*, eds. Dominic Boyer and Imre Szeman (Baltimore, 2017), 1.

<sup>17</sup>Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge, MA, 1983); Richard White, *The Organic Machine: The Remaking of the Columbia River* (New York, 1995); David Nye, *Consuming Power: A History of American Energies* (Cambridge, MA, 1999); Thomas P. Hughes, *Networks of Power: Electrification in Western Society, 1880–1930* (Baltimore, 1983); Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge, MA, 1998); Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (Berkeley, CA, 1992); E. A. Wrigley, *Continuity, Chance, and Change: The Character of the Industrial Revolution in England* (Cambridge, UK, 1988); David Painter, *Oil and the American Century: The Political Economy of U.S. Foreign Oil Policy, 1941–1954* (Baltimore, 1986). See also Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York, 1985); and John Clark, *Energy and the Federal Government: Fossil Fuel Policies, 1900–1946* (Champaign, IL, 1987).

<sup>18</sup>Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (New York, 2011); Brian C. Black, Karen R. Merrill, and Tyler Priest, “Oil in American History: A Special Issue,” *Journal of American History* 99, no. 1 (June 2012). There is an annual “energy history dinner” at the American Society for Environmental History conference, an energy history working group (<https://www.chstm.org/content/energy-history>), and the relatively new *Journal of Energy History*. Leading institutions have also established energy history projects and resources: <https://energyhistory.yale.edu/> and <https://histecon.fas.harvard.edu/energyhistory/>.

dozens of books and articles.<sup>19</sup> This growth occurred in parallel, and sometimes in conversation with, the emergence of the energy humanities, an international and more interdisciplinary field initially led by scholars in literature, cultural studies, and political theory. The core claim of the energy humanities is that there is a deep and dialectical relationship between energy inputs and the shape of a society's culture, politics, social forms, and much else.<sup>20</sup> Although energy history is essential to the energy humanities project, there remains a need for greater cross-fertilization of ideas and collaboration to deepen the historical rigor of the energy humanities and to sharpen the critical and conceptual edge of energy history.<sup>21</sup>

Second, the growth of the new energy history unfolded in a context of ongoing and widening claims of crisis, including U.S. militarism in the oil-rich Middle East and the now ubiquitous awareness of the climate crisis and the urgent need that it entails for switching to new sources of energy. Crisis has been a driving factor in the new energy history, beginning with Mitchell's seminal book, which grew out of his engagement with antiwar activism during the Iraq War and the debates about the relationship between oil and democracy that the war inspired.<sup>22</sup> But where Mitchell's complex and expansive account managed to avoid its pitfalls, the crisis context of energy history has spawned a pervasive political pragmatism. Energy historians often offer up their insights about energy regime formation and transition to the generational challenge of shifting away from fossil fuels to more sustainable forms of power.<sup>23</sup>

<sup>19</sup>There are too many to provide a comprehensive list, but examples include Brian C. Black, *Crude Reality: Petroleum in World History* (New York, 2012); Daggett, *The Birth of Energy*; Darren Dochuk, *Anointed with Oil: How Christianity and Crude Made Modern America* (New York, 2019); Daniel French, *When They Hid the Fire: A History of Electricity and Invisible Energy in America* (Pittsburgh, 2016); Bob Johnson, *Carbon Nation: Fossil Fuels in the Making of American Culture* (Lawrence, KS, 2014); Bob Johnson, *Mineral Rites: An Archeology of the Fossil Economy* (Baltimore, 2019); Christopher F. Jones, *Routes of Power: Energy and Modern America* (Cambridge, MA, 2014); Andrew Needham, *Power Lines: Phoenix and the Making of the Modern Southwest* (Princeton, NJ, 2015); Gross and Needham, eds., *New Energies*; Abigail Harrison Moore and R. W. Sandwell, *In a New Light: Histories of Women and Energy* (Montreal, 2021); Peter A. Shulman, *Coal and Empire: The Birth of Energy Security in Industrial America* (Baltimore, 2015); David M. Wight, *Oil Money: Middle East Petrodollars and the Transformation of US Empire, 1967–1988* (Ithaca, NY, 2021); and Natasha Zaretsky, *Radiation Nation: Three Mile Island and the Political Transformation of the 1970s* (New York, 2018).

<sup>20</sup>Imre Szeman and Caleb Wellum, "Energy Humanities and the Petroleumscape," in *Oil Spaces: Exploring the Global Petroleumscape*, ed. Carola Hein (New York, 2021), 212.

<sup>21</sup>Some core energy humanities texts include Dominic Boyer, "Energopower: An Introduction," *Anthropological Quarterly* 87, no. 2 (2014): 309–33; Darin Barney and Imre Szeman, eds., "Special Issue: Solarity," *South Atlantic Quarterly* 120, no. 1 (2021); Ross Barrett and Daniel Worden, eds., *Oil Culture* (Minneapolis, 2014); Imre Szeman and Dominic Boyer, eds., *Energy Humanities: An Anthology* (Baltimore, 2017); Frederic Buell, "A Short History of Oil Cultures," *Journal of American Studies* 46, no. 2 (2012): 273–93; Amitav Ghosh, "Petrofiction," *New Republic* (Mar. 2, 1992): 29–34; Peter Hitchcock, "Oil in an American Imaginary," *New Formations* 69 (2010): 81–97; Matthew T. Huber, *Lifeflood: Oil, Freedom, and the Forces of Capital* (Minneapolis, 2013); Stephanie LeMenager, *Living Oil: Petroleum Culture in the American Century* (Cambridge, MA, 2014); Graeme Macdonald, "The Resources of Fiction," *Reviews in Cultural Theory* 4, no. 2 (2013): 1–24; Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York, 2016); Petrocultures Research Group, *After Oil* (Morgantown, WV, 2016); Mark Simpson, "Lubricity: Smooth Oil's Political Frictions," *Petrocultures: Oil, Energy, Culture* (Montreal, 2017), 287–318; Allan Stoekl, *Bataille's Peak: Energy, Religion, and Post-Sustainability* (Minneapolis, 2007); Imre Szeman, *On Petrocultures: Globalization, Culture, and Energy* (Morgantown, WV, 2019); Imre Szeman, Jennifer Wenzel, and Patricia Yaeger, *Fueling Culture: 101 Words for Energy Environment* (New York, 2017); Jennifer Wenzel, "Petro-Magic Realism: Toward a Political Ecology of Nigerian Literature," *Postcolonial Studies* 9, no. 4 (2006): 449–64; Sheena Wilson, Adam Carlson, and Imre Szeman, *Petrocultures: Oil, Energy, Culture* (Montreal, 2017); and Patricia Yaeger, "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources," *PMLA* 126, no. 2 (2011): 305–26.

<sup>22</sup>Timothy Mitchell, Imre Szeman, and Caleb Wellum, "Carbon Democracy at Ten: An Interview," *Cultural Studies* 37, no. 3 (2023): 351–369.

<sup>23</sup>Gross and Needham provide an excellent overview of the status of "energy transition" within energy history.

The new energy history thus seems to be cohering into what leading energy humanities theorist Imre Szeman has called a “crisis discipline.”<sup>24</sup> Building on the notion first developed by Robert Cox for the field of environmental communications, Szeman claims that the environmental humanities’ alignment with crisis entails epistemological commitments and practices oriented toward addressing the climate and environmental crises.<sup>25</sup> Many of those who practice energy history similarly frame their work of explaining how energy transitions happen as a contribution to confronting crisis. The trouble, aside from the need to question crisis as a foundation for historical meaning, is that electoral politics and hegemonic public discourse have little interest in the careful and nuanced insights of academic researchers, whether they come from environmental communication, environmental humanities, or, perish the thought, energy history.<sup>26</sup> But rather than lament our irrelevance, Szeman encourages humanists to embrace the limits inherent in our fields and to excel at what we do well, noting:

What’s missing in official, institutional politics (and, indeed, elsewhere in neoliberal society) is what the humanities has managed to keep alive: elaborations of histories and counter-histories; interrogations of the discourses and ideologies which form subjects and societies; analyses of power and privilege; and investigations of culture writ large as a crucial site of analysis of what is repressed or cannot be expressed socio-politically. The humanities ensure all the big questions remain alive.<sup>27</sup>

The scope of our investigations ought to be freed, at least a little bit, from crisis and the managerial demands of problems and solutions to develop a deeper understanding of how energy has structured, shaped, or otherwise influenced the big questions. History can play a key role in pursuing the big questions about energy and human societies at different scales and in different places, in developing histories and counter-histories of, for example, paths not taken and possibilities left behind, of contingencies and the deep cultural force of energy’s use.<sup>28</sup> This is not to discount the role of production or transition in shaping use, but to argue for an expansion of our ambitions.

Indeed, this is one of the primary arguments of those working under the auspices of the energy humanities: that energy exerts a certain epistemological and ontological force, and that access to ever greater amounts of energy has been integral to the history and development of modernity, including its cultural values and practices.<sup>29</sup> These are historical claims asserting that while modernity cannot be *reduced* to energy determinism (though some have tried), telling its story requires attending to energy resources and the social, political, and technological worlds to which they give rise.<sup>30</sup> Sustained engagement from historians in energy humanities

<sup>24</sup>Imre Szeman, “A Crisis Discipline? The Task of the Environmental Humanities to Come (Results of a Personal Study),” *Resilience: A Journal of the Environmental Humanities* 10, no. 1-2 (2022): 108–118). See also Robert Cox, “Nature’s ‘Crisis Disciplines’: Does Environmental Communication Have an Ethical Duty?” *Environmental Communication* 1, no. 1 (2007): 5–20.

<sup>25</sup>See also, Imre Szeman and Jennifer Wenzel, “What Do We Talk About When We Talk About Extractivism?” *Textual Practice* 35, no. 3 (2021): 505–23.

<sup>26</sup>Janet Roitman has argued for the necessity of thinking about the epistemological blind spots inherent in so frequently starting from crisis to find meaning in and for history. Janet Roitman, *Anticrisis* (Durham, NC, 2013).

<sup>27</sup>Szeman, “A Crisis Discipline.”

<sup>28</sup>Bonneuil and Fressoz, 105–16.

<sup>29</sup>Caleb Wellum, “Oil, Culture, and Modernity,” in *Handbook on Oil and International Relations*, eds. Roland Dannreuther and Wojciech Ostrowski (London, 2022), 50–65. See also, Szeman and Boyer, 1.

<sup>30</sup>For an unapologetically energy determinist account of modernity, see H. T. Odum, *Environment, Power, and Society* (New York, 1971). For criticism of Odum, see Deléage, Debeir, and Hémery, *In the Servitude of Power*, xiv. Thomas Turnbull has recently warned against embracing energy determinism, in part to retain the humanism of history and a future open to revision, but also to avoid its potential to support the form of reactionary biologism that ultimately attracted the German historian Rolf Peter Sieferle. Sieferle saw in energy history an opportunity to escape social constructivism and relativism through a return to materiality, and ultimately turned to a defense of

debates, who often make broad claims that beg for deeper historical research, can only improve our appreciation of the role of energy use in history. Ariel Ron's recent *American Historical Review* article, "When Hay Was King," is a particularly compelling and exciting example of how attention to energy can fundamentally reshape our understanding of things we thought we knew, in this case, the development of Republican economic ideology, the continued importance of economic nationalism amid globalizing conditions, and the history of capitalism in the nineteenth-century United States.<sup>31</sup> Ron helps us to see the sinews of energy tying together the histories of modern nationalism and industrial capitalism.<sup>32</sup>

While Ron uses energy to tie together nationalism and industrial capitalism, paying closer attention to energy, as we should, also forces us to rework our understanding of other assumed certainties in modern American life, such as freedom itself. Energy historians have begun to acknowledge that "energy transitions change the way we think," but there is much more to reconsider in response to Dipesh Chakrabarty's provocation about the relationship between the "the mansion of modern freedoms" and the "ever-expanding base of fossil fuel use" upon which it stands.<sup>33</sup> Pierre Charbonnier has recently taken up this charge, arguing that it is possible and imperative to write the "material history of liberty" and that doing so can lead to all sorts of disorienting questions and possibilities.<sup>34</sup> Charbonnier notes, for instance, how Franklin Roosevelt's wartime elevation of "freedom from want" to the level of basic political principle helped to hallow desires to overcome the limits of nature. New access to the capacities afforded by fossil fuels, in the form of electricity, automobility, cheap mass housing, and a blooming plethora of consumer goods, helped to give such ideas of freedom and progress a new power and made the middle classes synonymous with social mobility. These consumerist values seeped into other political arenas, in which access to material abundance came to be equivalent with the guarantee of rights.<sup>35</sup> As the emerging global hegemon during—and one of the driving forces behind—the "great acceleration" in energy and resource use since 1945, there are many compelling questions about the relationship in the United States between consumption, the apparent supersession of nature and of material limits, and the ideas and discourses of freedom that grew out of the use of energy, and which over time came to be taken as common sense. For all the importance it has in the founding, historical development, and contemporary political culture of the United States, historians have been quick to embrace crisis and transition, but slower to think through the materiality of freedom as an ideal and practice.<sup>36</sup>

### The Use of Energy in Modern American History

Rectifying this lacuna by attending to the entanglements of energy not only with climate crisis but with the articulation and practice of freedom in modern American history also provides an

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*Lebensraum* via the study of energy history. Thomas Turnbull, "Energy, History, and the Humanities: Against a New Determinism," *History and Technology* 37, no. 2 (2021): 247–92.

<sup>31</sup>Ariel Ron, "When Hay Was King: Energy History and Economic Nationalism in the Nineteenth-Century United States," *American Historical Review* 128, no. 1 (Mar. 2023): 177–213.

<sup>32</sup>Ron's research is also organized around the energy transition of the nineteenth century, as an energy intensification, and concludes with reflections on how this history may be relevant to a green energy transition.

<sup>33</sup>Gross and Needham, 16; Dipesh Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry* 35, no. 2 (Winter 2009): 208.

<sup>34</sup>Pierre Charbonnier, *Affluence and Freedom: An Environmental History of Political Ideas*, trans. Andrew Brown (New York, 2021), 4.

<sup>35</sup>*Ibid.*, 173.

<sup>36</sup>The energy humanities is a remarkably global field, with particularly high representation in Canada and Europe as compared to the United States. It is not clear to me why this should be the case, though the history of certain forms of political economy and historical practice in these nations, from the work of Harold Innis to the Annales School, may partly explain it. U.S. history also tends to be insular, relative to other historical fields, perhaps owing to the size and power of the United States, and the global stakes of its politics.

opportunity to remake the grand narratives, certainties, and key practices that comprise modern American history. Despite several waves of scholarship focused on the historical dynamics of energy resources, including the new energy history, energy remains at the periphery of the grand synthesizing narratives of modern American history, which tend to focus on struggles over liberty and rights.<sup>37</sup> As Eric Foner writes, “No idea is more fundamental to Americans’ sense of ourselves as individuals and as a nation than freedom. The central term in our political vocabulary, freedom—or liberty, with which it is almost always used interchangeably—is deeply embedded in the record of our history and the language of everyday life.”<sup>38</sup> Liberty was there in the Declaration of Independence, in the Constitution, and in justifications for war, from the Lincoln’s “new birth of freedom” during the Civil War to the “Four Freedoms” of the Second World War and the articulation of a “free world” in the Cold War.<sup>39</sup> Freedom and liberty have of course always been subject to debate and political struggle, but their content and practice have also evolved in relation to a nexus of shifting material, political, economic, and cultural conditions (Figure 2).

Despite years of cutting-edge scholarship in environmental and energy history, the energetic dimension of American freedom is largely absent in the nation’s grand narratives. The bestselling U.S. history textbook for undergraduates, *Give Me Liberty: An American History*, focuses on the “changing contours of American freedom” but without reference to the materiality of energy resources.<sup>40</sup> Energy is of course there, just beneath the surface, in the textbook’s account of industrialization, the rise of the automobile, the story of American consumerism, and extensions of U.S. geopolitical interests and actions. But *Give Me Liberty* privileges primarily nonmaterial aspects of freedom: its meanings, the social conditions that make it possible, and the boundaries that are drawn and redrawn around it through political contestation and struggle.<sup>41</sup> When explaining the roots of America’s postwar “golden age” of rising standards of living, high wages, and economic expansion, *Give Me Liberty* points to government policies, strong unions, and U.S. global economic hegemony, ignoring the foundational importance of expanding access to fossil fuels. Oil makes a brief appearance in a discussion of the 1970s energy crisis, but the “beleaguered social compact” of the 1970s that paved the way for the New Right is nevertheless framed minimally in relation to energy. The authors also criticize Richard Nixon for equating freedom and consumption in his June 1959 “Kitchen Debate” with Soviet Premier Nikita Khrushchev, begging the question of to what extent consumption, as structured by the untroubled use of energy, was and continues to be a synonym for freedom in the United States, and elsewhere.<sup>42</sup> Reading syntheses such as these, it is important to ask: where do these political

<sup>37</sup>An important exception, which aims to rethink energy in terms of religion and culture, and to bring energy into the grand narrative of post-Civil War U.S. Christianity, is Dochuk, *Anointed with Oil*.

<sup>38</sup>Eric Foner, “The Contested History of American Freedom,” *Pennsylvania Magazine of History and Biography* CXXXVII, no. 1 (Jan. 2013): 13. “The United States of America, with its great moral and material resources, stands at the forefront of those peoples who seek to maintain freedom for the individual citizen, as opposed to that state which regulates all phases of the life of the individual, permitting no deviation from a fixed pattern.” Ralph H. Lutz, “The History of the Concept of Freedom,” *Bulletin of the Association of University Professors* 36, no. 1 (Spring 1950): 32.

<sup>39</sup>Foner, 14.

<sup>40</sup>Eric Foner, Kathleen Duval, and Lisa McGirr, *Give Me Liberty: An American History*, 7th ed., Vol. 2 (New York, 2023), xxix.

<sup>41</sup>*Ibid.*, xxxvi.

<sup>42</sup>*Ibid.*, 943–5, 1043–5. Jill Lepore’s recent book similarly focuses on “three political ideas ... political equality, natural rights, and the sovereignty of the people,” but does not relate their formation and evolution to materiality, to energy. See Jill Lepore, *These Truths: A History of the United States*, Inquiry Edition, Vol. 2 (New York, 2023), xxiv. For other examples, see Jane Dailey, *Building the American Republic: A Narrative History from 1877*, Vol. 2 (Chicago, 2018), which treats American history as a story of building and maintaining a republic through the ebbs and flows of Republican virtues; and Glenda Gilmore and Thomas Sugrue, *These United States: A Nation in the Making, 1890–Present* (New York, 2015). Energy is also on the distant periphery of the grand narratives in the Oxford History of the United States book series, such as David M. Kennedy, *Freedom from Fear: The American*



**Figure 2.** Photographer Chester Higgins links liberty with oil pollution in May 1973. The original caption reads: “Oil slick surrounds the Statue of Liberty in New York Harbor.” EPA-Documerica—Chester Higgins, Record Group 412, National Archives II, College Park, MD.

ideas that feature so prominently in the big story of the United States come from, and which material conditions and practices have structured and molded them? What is their relation to the technological and institutional arrangements that secured a cheap and abundant supply of energy, and what might they look like under different material conditions?

Attending to energy also reveals the dark underbelly of the mass energy use fueling many ideas and practices of freedom in U.S. history: the coercions and injustices of energy resource extraction and infrastructure. Energy humanities scholars have long drawn attention to the oppressive and violent political dynamics of energy infrastructures and extraction on workers, indigenous communities, and various underclasses who become trapped in relations of subjection by virtue of their proximity to or waged dependence on sites of fuel extraction and production.<sup>43</sup> This emphasis echoes environmental histories concerned with environmental justice and slow violence, but uniquely reveals how the freedoms of certain forms and intensities of energy use are inextricably linked with human suffering and injustice.<sup>44</sup> Attention to energy extraction and infrastructure likewise puts the history of U.S. imperialism in a new light, as in Megan Black’s recent reframing of U.S. empire through the Department of the Interior.<sup>45</sup>

*People in Depression and War* (New York, 2001); and James T. Patterson, *Restless Giant: The United States from Watergate to Bush v. Gore* (New York, 2005).

<sup>43</sup>Darin Barney, “Who We Are and What We Do: Canada as a Pipeline Nation,” in *Petrocultures: Oil, Politics, Culture*, eds. Sheena Wilson, Adam Carlson, and Imre Szeman (Montreal, 2017), 78–119; Jordan B. Kinder, “Solar Infrastructure as Media of Resistance, or, Indigenous Solarities Against Settler Colonialism,” *South Atlantic Quarterly* 120, no. 1 (Jan. 2021): 63–76; Dana Powell, *Landscapes of Power: Politics of Energy in the Navajo Nation* (Durham, NC, 2018); Anne Spice, “Fighting Invasive Infrastructures: Indigenous Relations against Pipelines,” *Environment and Society* 9, no. 1 (2018): 40–56.

<sup>44</sup>Johnson, *Mineral Rites*.

<sup>45</sup>Megan Black, *The Global Interior: Mineral Frontiers and American Power* (Cambridge, MA, 2018). See also Needham, *Power Lines*.

Since the production and delivery of energy has depended on dispossession and interclass violence, in contrast to energy's popular associations with speed and convenience, then attention to it may help to reframe the struggles for liberty that animate so many grand narratives of U.S. history, including the stories we tell about civil rights, human rights, and other political movements to extend the reach of freedom.

In addition to helping us reimagine the grand narratives of modern U.S. history, a second use of energy in the field is to disrupt well-worn progressive-conservative binaries—and certainties. My own work on the 1970s energy crisis aims to do this by turning to neoliberalism as a structure of feeling, rather than and as distinct from neoconservatism, as the locus of the energy-indebted epochal shift of the 1970s and 1980s. Foregrounding the problem of the use of energy made it untenable to maintain a clear “New Right” narrative in the late twentieth-century United States. As I have argued elsewhere, what Matthew Lassiter called the “red-blue divide” that dominates U.S. politics fails to account for the neoliberal turn, as seen through the politics of austerity that both left-leaning environmentalists and right-leaning economists brought to the question of energy consumption and conservation in the late 1970s.<sup>46</sup> By approaching the energy crisis as a cultural construction, my work shows how hegemonic interpretations of its meaning breathed new life into neoliberal efforts to restore oil abundance and U.S. power through a return to market-driven prices. A variety of actors viewed managing consumption, with the goal of increasing it, through the market as the key to rendering obsolete any concerns about limits to growth or to capitalism. Ironically, moreover, my work shows that these efforts to manage energy use, although aimed at maintaining fossil capitalism, contradicted the imaginaries of freedom and mobility typically attached to oil, fueling a resurgence of populism that nevertheless aided the neoliberal turn and which continues to animate the politics of oil and energy in North America.

The investigation of energy threatens to revise still other certainties, perhaps most important among them the way we periodize and mobilize modern U.S. history and politics. Centering energy forces us to think about how we decide where and when to begin and close our narratives, and how we interpret the character and significance of key historical moments and changes. Take the history of the New Deal, for example, which figures as a key moment in many historical narratives and as a potential model for the future. There is a broad consensus within the energy humanities that, contra the Elon Musks of the world, technology will not save us from climate disaster and from having to change the status quo when it comes to consumerism, individualism, and capitalism. The achievement of a new energy reality is therefore not only an opportunity but an imperative for social transformation. But what kind of transformation should that be, and how will we get there? There is a widespread if not a universal presumption, for instance, of the need for a return to a form of mass progressive politics that recalls the New Deal era, but which fails to reckon with that era's material conditions. Indeed, despite the criticisms that have been directed toward the New Deal—it did not go far enough, it did not benefit all equally, it did not end the Great Depression—one of the reasons the decline of New Deal liberalism and the rise of the New Right has been a central line of inquiry in postwar U.S. political history is because many historians view the New Deal as a significant step in the right direction toward a more fair and just society, to which the U.S. must return.<sup>47</sup>

<sup>46</sup>Caleb Wellum, *Energizing Neoliberalism: The 1970s Energy Crisis and the Making of Modern America* (Baltimore, 2023); Caleb Wellum, “‘A Vibrant National Preoccupation’: Embracing an Energy Conservation Ethic in the 1970s,” *Environmental History* 25, no. 1 (Jan. 2020): 85–109; Matthew D. Lassiter, “Political History beyond the Red-Blue Divide,” *The Journal of American History* 98, no. 3 (Dec. 2011): 760–4.

<sup>47</sup>Books concerned with the rise and/or fall of the New Deal are too numerous to provide a comprehensive list. Some of prominent examples include Alan Brinkley, *The End of Reform* (New York, 1995); Kim Phillips-Fein, *Invisible Hands: The Making of the Conservative Movement from the New Deal to Reagan* (New York, 2009);

Jefferson Cowie's *The Great Exception* stands as one of the most compelling and accessible versions of this argument. Cowie argues that the New Deal represented a "great exception ... from some of the main contours of American political practice, economic structure, and cultural outlook." It was a time when the federal government applied its power and resources in the service of "collective economic rights."<sup>48</sup> Yet the New Deal was a fragile accomplishment, threatened from the start by countervailing forces. Of the political limits or fissures that helped to undo it, Cowie looks to the state, the weakness of organized labor, racial tensions and inequalities, the role of culture in religious politics, and, running throughout, "the complex ideologies of a Jeffersonian individualism" that New Deal collectivity failed, in the end, to navigate.<sup>49</sup> Moreover, since politics rather than economics is what drove the great exception, for Cowie, returning to the right politics has the potential to turn the exception into the rule. This kind of argument resonates with the sentiments of the Marxist literature scholar Raymond Williams, who claimed in 1958 that the primary challenge of the future would be to "use ... our new resources to make a good common culture; the means to a good, abundant economy we already understand."<sup>50</sup>

Much like the largely political framings of America's grand narratives and of its core debates about liberty, such framings of the "great exception" fail to account for the fact that the New Deal coincided with a world historical increase in energy production and use in the United States, mostly from fossil fuels. Carefully attending to energy may thus throw into doubt our certainties about the New Deal's novelty and its potential as a model for the future. What was its relationship to fossil fuels and growth?<sup>51</sup> Is such an approach viable in a warming world of 8 billion people, most of whom are nowhere near an American standard of living—itself a term from the great acceleration era? How did the use of energy inform and enable the New Deal?<sup>52</sup> Indeed, as Bonneuil and Fressoz point out, New Deal electrification programs *displaced* more decentralized systems of electricity provision in rural America—a major moment in the shift away from the renewable energy sources that we now call "alternative," belying the signifying power of energy-dense fossil fuels (Figure 3).<sup>53</sup>

Attention to energy can also render strange ostensibly mundane practices, and in so doing, can reveal energy use as a cultural force that structures human experience and subjectivity. Driving, for instance, is one of the dominant practices of energy use for many Americans (Figure 4).<sup>54</sup> Several studies have revealed driving's rich cultural and environmental history.<sup>55</sup> But there is more to explore about its links, for instance, to the history of American modernity, to the experience and durability of certain notions of liberty and freedom, and to the constitution of the grand narratives and political projects of the modern United States. Turning to film

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and Gary Gerstle, Nelson Lichtenstein, and Alice O'Connor, eds., *Beyond the New Deal Order: U.S. Politics from the Great Depression to the Great Recession* (Philadelphia, 2019).

<sup>48</sup>Jefferson Cowie, *The Great Exception: The New Deal and the Limits of American Politics* (Princeton, NJ, 2016), 9

<sup>49</sup>Cowie, 11.

<sup>50</sup>Raymond Williams, "Culture Is Ordinary," in *Raymond Williams on Culture and Society: Essential Writings*, ed. Jim McGuigan (Los Angeles, 2014), 9.

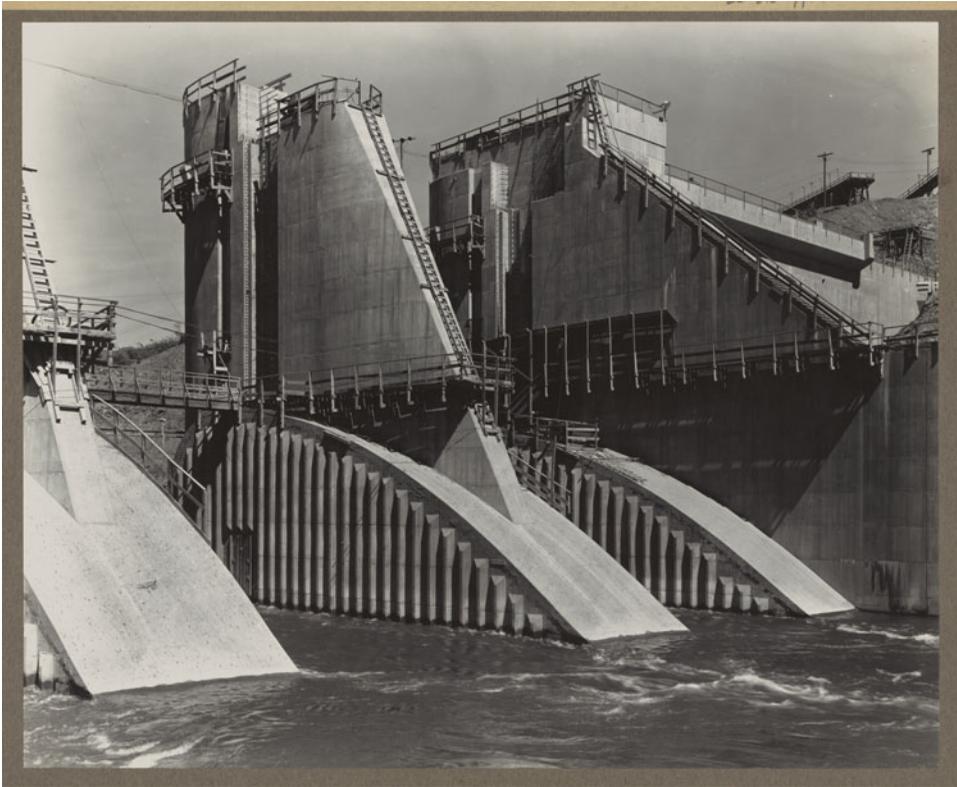
<sup>51</sup>Molly Geidel, "Petrodocumentary and the Remaking of New Deal Culture," *American Quarterly* 72, no. 3 (Sept. 2020): 797–821.

<sup>52</sup>For an excellent analysis of oil's relation to the New Deal, see Huber, *Lifeblood*. My forthcoming (2023) book highlights the role of the energy crisis—that is, the prospect of having less or more expensive energy to use in the future—in the decline of the Great Exception. Wellum, *energizing Neoliberalism*.

<sup>53</sup>Fressoz and Bonneuil, 110. See also Robert Righter, *Wind Energy in America: A History* (Norman, OK, 1996).

<sup>54</sup>The average American drives 13,476 miles every year, equivalent to halfway around the earth. There are significant differences by gender and age. <https://www.fhwa.dot.gov/ohim/onh00/bar8.htm>.

<sup>55</sup>Cotton Seiler, *Republic of Drivers: A Cultural History of Automobility in America* (Chicago, 2008); Christopher W. Wells, *Car Country: An Environmental History* (Washington, DC, 2012); Sarah Frohardt-Lane, "Promoting a Culture of Driving: Rationing, Car Sharing, and Propaganda in World War II," *Journal of American Studies* 46, no. 2 (May 2012): 337–55.



**Figure 3.** Energy-intensive New Deal infrastructure projects, such as the Central Valley Reclamation Project, helped to expand energy use. This Farm Security Administration photograph is from September 1942. The original caption reads: “Central Valley Reclamation Project, Calif. Pier 11, spillway section of the Keswick Dam, as seen from a point downstream.” Library of Congress, Prints & Photographs Division, LC-DIG-ppmsca-17344.

in our scholarship and teaching can be an effective way to explore these relations in depth. For instance, during the 1970s, a key moment of energy awareness in U.S. popular culture, several films envisioned the centrality of driving to mid-century American life but struggled to develop a coherent critical framing of driving’s deep cultural force.<sup>56</sup> Such films included George Lucas’s classic car film, *American Graffiti*, and Sam Peckinpah’s not-so-classic trucker western, *Convoy*, as well as Robert Altman’s *Nashville*. The latter features several key car scenes, from a traffic jam to a junkyard in which a British character declares “these cars are trying to communicate!”<sup>57</sup> Altman sensed in some way the significance of those junked cars to the story of modern America, but ultimately failed to hear whatever it was the cars were trying to say. That failure is itself revelatory. Given the centrality of cars to hegemonic U.S. visions of a sustainable, net-zero future—and to the past century of U.S. economic history—the task of critically engaging the practice of driving is as urgent as it ever was.<sup>58</sup> Historians might furthermore ask what other machine orders they can investigate or reimagine in relation to the use of energy as a culture-shaping force. The purpose of doing so is not merely to understand how to manage

<sup>56</sup>See Caleb Wellum, “Keep Moving: *Convoy* (1978), Car Films, and Petropopulism in the 1970s,” in *American Energy Cinema*, eds. Robert D. Liftset, Sarah Stanford-McIntyre, and Raechel Lutz (Morgantown, WV, 2023), 257–71.

<sup>57</sup>For more on energy in American cinema, see Robert D. Liftset, Sarah Stanford-McIntyre, and Raechel Lutz, eds., *American Energy Cinema* (Morgantown, WV, 2023).

<sup>58</sup>Tesla, “Master Plan Part 3: Sustainable Energy for All of Earth,” April 5, 2023, [https://www.tesla.com/ns\\_videos/Tesla-Master-Plan-Part-3.pdf](https://www.tesla.com/ns_videos/Tesla-Master-Plan-Part-3.pdf).



**Figure 4.** “Highway in Bexar County, Texas, from an automobile.” Library of Congress, Prints & Photograph Division, LC-USF33- 012640-M3 [P&P] LOT 623.

a transition to other forms of energy use or mobility, but to demonstrate the contingencies of current energy regimes—contra their claims to inevitability—as well as to grasp the social, cultural, and political dynamics of energy, of how the use of energy structures historical subjects in ways that resemble race, class, and gender, but always also in conversation with those forces.

Energy has many other potential uses for U.S. historians that I do not have time to explore in detail in this essay, including revising understandings of a central binary in U.S. political and cultural history, *dependence/independence*, which continues to play a key role in the cultural politics of energy in the United States.<sup>59</sup> This binary of course dates back to the Revolutionary War and to arguments for and against slavery, and in the twentieth century has come to be deeply associated with the use of oil, as an addiction that Americans cannot kick, and as a way of talking about the embeddedness of the nation in relations with other countries. It will be important, as well, to continue historicizing the taken-for-granted concept of “energy” itself, as Cara Daggett has recently done, and as Anson Rabinbach did for Europe, to think through in the American context what energy has meant as a concept and a metaphor, and what kind of social, political, and cultural work that concept has been able to do.<sup>60</sup> Doing so may show how electricity shaped the formation of subjectivities, or how processes of energy production and crisis inform core cultural ideas, such as Natasha Zaretsky has recently argued for nuclear energy and the politics of abortion.<sup>61</sup> Attending to the social construction of energy, and to the conditions and relations in which that construction took place, moreover, will enable historians to rethink key historical structures, concepts, and movements of modern U.S. history

<sup>59</sup>On dependence/independence in 1970s energy politics, see Meg Jacobs, *Panic at the Pump: The Energy Crisis and the Transformation of American Politics in the 1970s* (New York, 2016).

<sup>60</sup>In addition to Daggett and Rabinbach, on the concept of energy, see Lynn Badia, “The Nation as Energy: Imagining Society through Energy Intensity,” *American Quarterly* 72, no. 3 (Sept. 2020): 771–95. On energy and cultural values, see Johnson, *Carbon Nation* and *Mineral Rites*.

<sup>61</sup>Zaretsky, *Radiation Nation*.

in relation to energy, but without falling into crude energy determinisms. Energy is ultimately not one thing, but a set of relations of power that can be revealed in use.

### The Use of Energy History for Historical Practice

This discussion of what the analytic of energy can offer to U.S. history raises the question of another use of energy for history: that of rethinking modern historical practice, at the level of methodology but also in its institutional and professional practice. Historians tend to offer the methods, tools, and strengths of history as it is currently constituted as a vital contribution to the problems currently faced by a warming world of seemingly endless and cascading crises. History is often offered as a set of practices and perspectives that exists outside of energy history, and which can help to illuminate that history to help address pressing challenges.

To take one example, Ute Hasenörl and Jan-Henrick Meyer recently argued in the European context that if historians unified their deep historical knowledge of energy around specific challenges, such as energy transition, they could contribute significantly to understandings of how past energy transitions worked without excising, oversimplifying, or diminishing the nuances and surprising turns of those transitions.<sup>62</sup> They then offer several compelling avenues for further historical study of energy, including historicizing renewable energies, historicizing the present dominance of fossil fuels, and historicizing social movements, in the last instance, turning the historian's critical eye to the role of energy in shaping the "worldviews of engineers, decisionmakers, and consumers."<sup>63</sup> This historicizing move is of course intellectually important, and my point here is not to dismiss the epistemological power of historical research and understanding. My purpose is to ask to what extent the challenge of energy transition—and the intellectual challenge of energy itself—exerts pressure on the very tools, methods, and norms of historical scholarship.

If the energy humanities' central claim is true—that energy abundance and its associated capacities of the twentieth century in some way shaped not only political and economic dynamics of societies saturated in fossil fuels, but also their cultures and ideas—then the discipline of history, like all contemporary knowledge formations, has also been shaped by that abundance. Historians, perhaps ironically, are well-positioned to assess the truth of this epistemological claim, and to reflect on the ways in which access to the use of certain forms of energy may have shaped our theories and practices. If race, gender, and class exert force on the content and emphasis of historical interpretation, of its theoretical preferences and habitual practices of knowledge production and dissemination, is it not possible that the use of energy has exerted a similar force? If so, to what extent? What are the intellectual and practical implications of that shaping? What happens if we historicize the discipline of history in relation to energy?

Historians have long reflected on the ways in which historical conditions have shaped the concepts and practices informing our craft. E. H. Carr, in his mid-century classic *What Is History?*, linked the very constitution of the historical to forms of social, political, and historical consciousness, as well as to the development of "modern technological and industrial processes"—processes that were and remain energy intensive. Whether or not one agrees with Carr's framing of history, he clearly understood that the craft of history would and should change in response to shifts in the conditions of historical understanding—that conceptions of history are themselves historical.<sup>64</sup> There are many examples of critiques of history writing organized around colonialism, race, and class, but to date, historians have not really reckoned with how the modern technologies and industrial processes to which Carr refers, all of which

<sup>62</sup>Ute Hasenörl and Jan-Henrick Meyer, "The Energy Challenge in Historical Perspective," *Technology and Culture* 61, no. 1 (Jan. 2020): 297.

<sup>63</sup>*Ibid.*, 300.

<sup>64</sup>E. H. Carr, *What Is History?* (1961; New York, 1990), 148–9.

were and are energy intensive, have shaped the discipline. What Carr could not articulate at the time, but had perhaps unknowingly put his finger on, was that the control and use of energy inform what is taken to constitute history and historical practice.

As the study of energy history grows—and there is no sign of its slowing down—historians will have to consider the force that energy use exerts on our methods and practices. Several scholars have crafted incisive accounts of the role of energy in other powerful and modern knowledge formations, from Taylorism to postwar economics.<sup>65</sup> Timothy Mitchell in *Carbon Democracy*, for instance, traced the role of coal and oil in shaping ideas about political economy, as well as objects and practices of governance. In a particularly provocative section of the book, he shows how oil abundance underwrote one of the primary objects of the economists' knowledge and of modern governance—"the economy"—which in turn enabled economic growth to be reconceptualized and installed at the very heart of liberal democratic politics.<sup>66</sup>

Mitchell's claim that the materiality and use of oil shaped the expertise of economics raises intriguing questions for history about how energy use has informed our core concepts. This is not to say that history can be completely historicized or relativized in relation to energy. It may even turn out that energy exerts a relatively minor force in our craft. But in a time of climate and other crises, with liberal democracies and their experts thrown into question, historians have an obligation to confront our own methodological relation to the current crisis, which may lead to new insights and understanding. How will core concepts like nation, consumption, and identity be sharpened or changed by attending to energy? What about analytic lenses like race, class, and gender? Given literal and symbolic connections between energy and slavery, and between energy and liberty, oil, coal, and electricity have undoubtedly shaped the lives of African Americans and other racialized groups. Energy's conceptual and historic relation to work and to industrial capitalism means it has had profound implications for the formation and experience of class. The same is true, as Moore and Sandwell argue, for gender, from the experience of women as energy consumers who helped to drive energy transitions, to the different experiences and values attached to the labor of men and women, to the rather gendered emphases of past energy history and its tendency to focus on men and production rather than women and consumption (Figure 5).<sup>67</sup> Attention to energy will shift and invigorate these longstanding analytical categories.

One particularly fruitful avenue of research is thinking through the historical treatment of power in relation to the use of energy. Michel Foucault's diffuse and pervasive notion of power as forming subjectivities, for instance, has widely informed historical analysis over the past twenty years. Much of Foucault's conceptual language for describing power and how it works focuses on signs and discourses, but nevertheless draws metaphors and images from energy production and consumption: of networks, systems, action, and power. What if we think of Foucault as writing at the height of the great acceleration, amid swirling concerns of energy shortage and crisis? What happens to his claim that the human subject is "placed in power relations which are very complex" if energy enters the formulation of those power relations, and how might that inform how we approach subjects and power in the past?<sup>68</sup> Anthropologist Dominic Boyer, who notes that Foucault's rise to influence paralleled a loss

<sup>65</sup>On Taylorism, see Rabinbach, and on economics and the economy, see Mitchell.

<sup>66</sup>Mitchell, 127–43.

<sup>67</sup>On energy and gender, see Moore and Sandwell, *In a New Light*. On energy, race, slavery, and class, see Bob Johnson, "Energy Slaves: Carbon Technologies, Climate Change, and the Stratified History of the Fossil Economy," *American Quarterly* 68, no. 4 (Dec. 2016): 955–79; Walter Gordon, "International Powers: Energy and Progress in *Dark Princess* and *Black Empire*," *American Quarterly* 72, no. 3 (Sept. 2020): 581–602; and Myles Lennon, "Decolonizing Energy: Black Lives Matter and Technoscientific Expertise Amid Solar Relations," *Energy Research & Social Science* 30 (Aug. 2017): 18–27.

<sup>68</sup>Michel Foucault, "The Subject and Power," *Critical Inquiry* 8 (Summer 1982): 778.



**Figure 5.** A woman displays undrinkable water from her well, polluted by the Hanna Coal Company, in October 1973. Just as attention to gender will change our understanding of energy history, attention to energy has the potential to reshape analytical categories like gender, class, and race. The original caption reads: “May Workman holds a jar of undrinkable water that comes from her well, and has filed a damage suit against the Hanna Coal Company. She has to transport water from a well many miles away. Although the coal company owns all the land around her, and many roads are closed, she refuses to sell.” EPA-Documerica—Erik Calonius, Record Group 412, National Archives II, College Park, MD.

of faith in expertise during the 1970s oil shocks, has offered the neologism “energopower” as a lens for understanding political power by attending to energy resources, infrastructures, and uses.<sup>69</sup> It is a lens for seeing “new dimensions of power” made possible by our current condition of environmental, political, and cultural crisis.<sup>70</sup> The energy humanities, to date, has claimed a deep relationship between subjectivity and energy, but now is the time to retool our historical categories to investigate that claim, to see what happens if and when energy joins the analytical triumvirate of race, class, and gender as integral to the subject, and to political and cultural theory more broadly.<sup>71</sup>

Aside from history’s concepts, the professional practice of history is at present rather carbon intensive. Historians value archival research, for instance, as the intellectual pinnacle and unique disciplinary identity of our profession. But as professional history expanded throughout the twentieth century, it sent increasing numbers of historians on increasingly frequent flights to archives to do their important work. That increase in energy use for the purposes of historical research has undoubtedly helped to expand the amount of historical information and understanding that is unearthed, developed, taught, and debated.

<sup>69</sup>Dominic Boyer, “Energopower: An Introduction,” *Anthropological Quarterly* 87, no. 2 (2014): 318, 325–8. See also Dominic Boyer, *Energopolitics: Wind and Power in the Anthropocene* (Durham, NC, 2019).

<sup>70</sup>Boyer, “Energopower,” 327.

<sup>71</sup>Imre Szeman and Caleb Wellum, “Energy Humanities and the Petroleumscape,” in *Oil Spaces: Exploring the Global Petroleumscape*, ed. Carola Hein (New York, 2022), 222–3.

Practically speaking, however, all that flying is one of the major ways in which the discipline as it is presently configured, focused on solo-authored monographs and articles based on archival research, is carbon intensive. In one attempt to reckon with the energy inputs that go into humanistic academic research, literature scholar Stephanie LeMenager included a Life Cycle Assessment of her book *Living Oil* in an appendix to the book.<sup>72</sup> Although the assessment shows that a humble academic monograph lacks the energy waste of a typical American cheeseburger, which for LeMenager means that “comparatively speaking, the news isn’t entirely bad for this or any academic book in print,” the assessment does not include the kinds of archival research flying that a historian might do, or the conference and workshop circuit that have become part of the academic life. Indeed, one study of the carbon footprint of a UK geography department found that air travel for research and student field trips contributed the largest source of greenhouse gas emissions in the department. “The production of knowledge,” note the authors, “can be a carbon-intensive business.”<sup>73</sup> Of course, even the pervasive constructivist terminology evident in this sentence, of the *production* of knowledge, gestures toward a conception of knowledge and intellectual activity indebted to carbon-intensive models of industrial production, perhaps also bespeaking how the energy conditions and practices of the twentieth century have contoured the intellectual landscapes of scholars and researchers.

On top of frequent travel to archives, where we hope to discover and construct new historical knowledge—to make intellectual progress—many of us are required by our institutions and by disciplinary norms to attend far-flung conferences that have ballooned in size over the past decades. The American Historical Association and Organization of American Historians boast of having more than 1,500 historians attend.<sup>74</sup> But these mega conferences, not to mention the many smaller conferences and workshops, embody a deep tension within history, and within our institutions, between growing pressure to internationalize—through partnerships, student recruitment and experience programs, and faculty hiring priorities—and the efforts of universities and many of their researchers to position themselves at the forefront of knowledge and action on sustainability. Fossil fuels have of course been a material condition of possibility for the intensity of global forms of mobility and exchange that make these internationalization efforts possible and desirable. And historians would not appear on anyone’s list of top carbon polluters. But these tensions within the discipline and within academia will not go away; they are realities that must be confronted at the level of the institution, of common academic practice, and of method and theory.

There are many scholars and research networks already thinking through these questions of decarbonized humanities method and practice. Anne Pasek, for instance, co-convenes the Low Carbon Research Methods group, which through workshops and events is exploring how the design of research and collaboration can include carbon considerations, as well as how an energy transition affords an opportunity to create a more humane and equitable academia.<sup>75</sup> Motivated by a similar set of concerns, I along with Pasek and Emily Roehl organized a multi-sited workshop called “Energy In/Out of Place” in 2020 that tasked research teams in

<sup>72</sup>Stephanie LeMenager, *Living Oil: Petroleum Culture in the American Century* (New York, 2014), 196–209.

<sup>73</sup>Joe Williams and Whitney Love, “Low-Carbon Research and Teaching in Geography: Pathways and Perspectives,” *The Professional Geographer* 74, no. 1 (2022): 41. Colin Dey and Shona Russell, “Still Flying in the Face of Low-Carbon Scholarship? A Final Call for the CSEAR Community to Get on Board,” *Social and Environmental Accountability Journal* 42, no. 3 (2022): 208–22.

<sup>74</sup>The 2023 OAH Conference on American History bills itself as “a gathering of 1,500+ historians”: <https://www.oah.org/meetings-events/oah23/>. The Archive of Past AHA Annual Meetings reports attendance numbers of 1,500–3,600 attendees, sometimes featuring programs of nearly 400 sessions: <https://www.historians.org/annual-meeting/past-meetings-archive>. There is a small but growing movement to change these academic practices, or at least to raise awareness about the environmental dimensions of the conference circuit (<https://zeroemissionuniversity.com/resources/>).

<sup>75</sup><http://lowcarbonmethods.com/index.html>.

five different locations around the world with creating digital projects about the role of energy in shaping the places where they live and work.<sup>76</sup> The workshop eliminated flying and found innovative ways to provide space to create and share new knowledge. To take one more example, the Petrocultures Research Group has organized experiments in collective thinking and writing at its After Oil Schools that take seriously the challenge the climate crisis poses to the status quo of our knowledge practices through a commitment to the co-creation of knowledge.<sup>77</sup> Archives and solo-authored work are important and will remain at the core of the discipline. But these conversations about method and practice are vital ones that need the insight of historians whose participation could also help to re-form the craft of history in a warming and rapidly changing world.

## Conclusion

The use of energy history lies in its potential to reform both historical research and practice. In an earlier Soapbox essay, Kathryn Lofton warned against the temptation of turning the history of religion to the task of combating prejudice by providing histories of prejudice. Such interventions are not only intellectually and ethically questionable but are also highly unlikely to succeed.<sup>78</sup> Instead, Lofton argued that history should find its power “in its depth of hermeneutic acuity” and embrace its “capacity to complicate our contemporary senses, even our social scientific senses....”<sup>79</sup> So, too, with energy history: it is most powerful when it complicates contemporary senses of energy as an economic matter of supply and demand, as a matter of technological innovation, or as a matter of transition. Interpreting the past through the lens of energy complicates ideas, processes, and histories that we thought we knew about the United States and elsewhere. A vital application for energy history going forward is to highlight the strangeness and contingency of our historical and present uses of energy, and to explore the slipperiness of energy and its complex interactions with how people understand and operate in the world and where energy politics takes place. Rather than separate energy history from the energy humanities, historians can and should investigate the contested cultural meanings of energy, and how its use has shaped foundational practices and values, paths that will complicate and unnerve the emerging hegemonic approaches to energy transition and climate, all of which are very much in need of scrutiny. Energy enables us to bring together the scientific, the economic, the political, the social, and the cultural, to see how they inform and shape each other.

An energy transition is an important but insufficient answer to the current constellation of crises. The technocratic form of transition that many countries are currently pursuing will not necessarily spell the end of the excessive extraction and consumption that marked the era of fossil capitalism. Merely substituting one set of technologies for another, relying on the assumption of relatively unchanged patterns of consumption (though not necessarily of work), fails to understand that the question is as much and as urgently one of use, and therefore of culture, as it is of supply. Historians can respond by turning to energy as a lens to understand how the use of energy and its infrastructures has constituted the subjects of history. In so doing, history can help to reveal the conditions and possibilities that will inform “our creation of the future.”<sup>80</sup>

<sup>76</sup><https://hcommons.org/deposits/item/hc:49811/>.

<sup>77</sup><https://afteroil.ca/>.

<sup>78</sup>Kathryn Lofton, “Why Religion Is Hard for Historians (and How It Can Be Easier),” *Modern American History* 3, no. 1 (Mar. 2020): 71.

<sup>79</sup>*Ibid.*, 72.

<sup>80</sup>Collingwood, *The Idea of History*, 334.