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Introduction: The ethical constitution of energy dilemmas

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Growing anthropological research on energy provides critical explorations into the cross-cultural ways in which people perceive and use this fundamental resource. We argue that two dominant frameworks animate that literature: a critique of corporate and state power, and advocacy for energy transitions to less carbon-intensive futures. These frameworks have narrowed the ethical questions and perspectives that the discipline has considered in relation to energy. This is because they are animated by judgements that can implicitly shape research agendas or sometimes result in strong accusations that obscure how our interlocutors themselves may consider the rightness and wrongness of energy resources and the societal infrastructures of which they form a part. We propose a more capacious approach to studying energy ethics that opens up energy dilemmas to ethnographic inquiry. As such, we show how energy dilemmas constitute important sites for the generation of anthropological knowledge, encouraging more insightful and inclusive discussions of the place of energy in human and more-than-human lives.

'Are you sure you aren't from the *New York Times*? Are you accompanied by a TV crew? Will I be reading my words in some undercover exposé?' Such were the words from an oil executive after his company had spent three days vetting one of us (High) ahead of our first meeting in Colorado. His initial distrust and expectation of impending criticism were palpable and far from unique in our experiences of doing ethnographic research on the oil, natural gas, and coal industries in the United States. The second author (Smith) received almost identical questions when conducting research in Wyoming, even when most of her interlocutors knew that she had grown up there and worked in the mines herself. Issues surrounding energy can divide people into starkly opposed camps between those supporting and those contesting the realization of different energy visions. Whether it is the construction of oil pipelines, liquefied natural gas (LNG) export terminals, or offshore wind farms, or it is the closure of coal mines or the burning of charcoal, these happenings crystallize and accentuate the difficult energy

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dilemmas that confront us today. Ethical criteria, ethical states, and ethical responses are brought to bear on the divergent paths that have been tried in the past and that can be pursued in the future. And with climate change becoming an increasingly urgent issue, the stakes involved in our energy practices are enormous and ever-rising. As a matter on which humanity and other beings depend for their livelihood, energy raises fundamental questions that involve judgements about our entangled *telos*. What is the place of energy in life? How are we to make sense of the ways in which energy is produced, distributed, used, and disposed of? And how do such actions relate to what we consider to be right or good? Questions about energy are intensely ethical as they encourage, if not demand, reflection on how we feel we ought to live. There is thus no 'neutral' ground on which to stand when judging the ways in which energy can contribute to or imperil the kinds of lives and societies that we desire for ourselves and our others.

This special issue attends ethnographically to these ethical questions as they emerge in encounters with and understandings of energy. However, given the geopolitics in natural resource extraction, the strong industry lobbies, and clear activist agendas, people's own ethical sensibility in relation to energy can easily disappear from view and be overshadowed by more vocal and vested voices. Indeed, as we will show in this introduction, much of the existing anthropological literature on energy has been framed by two overarching concerns: the first with critiquing state and corporate power; and the second with advocating energy transitions that cast fossil fuel resources as necessarily immoral and renewable resources as their assumed opposites. These frameworks are animated by ethical views that can implicitly shape research agendas or sometimes result in strong accusations that obscure how our interlocutors themselves may consider the rightness and wrongness of energy resources and the societal infrastructures of which they form a part. As such, these impositions hinder the anthropological project of understanding the diversity of living in the world by predefining how people ought to live, what kinds of societies they should want, and how they ought to relate to the environment and other forms of life.

Opening up these energy dilemmas to ethnographic inquiry, this special issue shows how they constitute important sites for the generation of anthropological knowledge, encouraging us to be curious and interested, puzzled and surprised by how others view and experience the world. Rather than approaching the recurring judgements that are made in the anthropological scholarship on energy as just reactions to, if not frustrations with, current political events, we show how they have been left strikingly unchallenged by anthropologists. This is despite numerous introspective critical turns and returns in anthropology. Given the way in which anthropology as a discipline has evolved, certain modes of inquiry have come to flourish. We will first consider this history and the role of judgement in anthropological argumentation and then offer a detailed examination of anthropological engagements with energy practices in order to show how a particular and problematic ethics of life runs through this scholarship. The essays that follow in this special issue then illustrate an array of ethical sensibilities and questions that arise in people's energy encounters. The essays present reflections and experiences, visions and failures, concords and conflicts, that 'gesture both to the supra-individual, supra-present contexts in which we all craft quotidian ethics, *and* to the expansive geographies and timescapes in which the effects of our ethical practices ramify', as Hannah Appel notes in her concluding piece (Appel, this volume, p. 179, our emphasis). These 'ethical worlds' are multiple and overlapping, sometimes in mutual

Figure 1. Energy generation from wind and oil coexists side-by-side in many places in the United States, as here in Texas. (Photo by Ben, courtesy of a Creative Commons licence, available at *https://tinyurl.com/ydz5kmev*.)

accordance and other times at odds, demonstrating why it is important to think of energy ethics in much more capacious ways. These ethical worlds present a plurality and complexity, idiosyncrasy if not inconsistency that current scholarship is poorly positioned to grasp.

As anthropological engagements with energy continue to grow (e.g. Boyer 2014; 2015; Love & Isenhour 2016; Smith & High 2017; Strauss, Rupp & Love 2013*a*), many scholars in this field seek to imagine transitions to new energy futures, as we illustrate below. We strongly argue that in order for this to be generative of new insights and deeper understandings of the complexities involved, we must start by giving greater recognition to how our interlocutors make sense of the world. As noted by Thomas Csordas, it is necessary to engage in 'a simultaneous consideration of the morality of anthropology and an anthropology of morality', demanding 'attention to how humans, including ourselves as anthropologists, can distinguish between right and wrong' (2013: 524). We thus suggest an analytical open-mindedness that allows for our interlocutors to not always share our views of how the world should and could be: that is, an analytical approach that allows for them to be social, situated, and unpredictable persons entangled in the politics of life. Ethical sensibility animates the everyday thoughts and practices of people, whether they work in renewables, nuclear energy, or fossil fuels; whether they work in industry, policy, or advocacy; whether they produce, distribute, or consume energy.

Yet it is important to note that this is not about defending the ethical worlds of energy actors (or anyone else for that matter) or about contesting the importance of those ethical worlds with which they intersect and contradict. As James Laidlaw has noted, '[T]he claim on which the anthropology of ethics rests is not an evaluative claim

that people are good: It is a descriptive claim that they are evaluative' (2013: 3). In focusing on energy ethics, this special issue thus attends to 'a sort of grey territory that obliges us to rethink what we take for granted about the distinction between the bright side and the dark side of our moral world and about the separation of the ethical from the political' (Fassin 2013: 249). Rather than ignoring the political, we consider the pervasiveness of ethics in social life with a keen awareness that people do not necessarily meet their own or others' expectations or hopes. Questions of energy ethics are thus intensely ethical *and* political. And in order to get a sense of this and avoid the 'moral terrorism' that ensues when having an 'unacknowledged attachment to a given idea of truth' (Zylinska 2014: 82, 83), this special issue thus proposes to create an analytical space where we can attend to, take seriously, and seek to understand people's own experiences and evaluations without uncritically imposing our views of how we would like the world to be (see also Coleman 2015; Fassin 2008: 334), lest we risk energy becoming the latest chapter in the 'long history of global interventions based on unquestioned good' (Appel, this volume, p. 182).

We recognize how this is in itself not just an analytical call, but also an ethical and political one. And this is because it seeks to recognize *all* humans as ethical agents. Rather than drawing on and reproducing oppositions and tensions in society, it seeks to bring together people's multiple, differing, and interconnecting reflections and experiences. To ignore this not only produces a seriously distorted and simplified view of human and more-than-human life; it also jeopardizes our trust in each other's ethical capacities and the importance of bringing a diversity of perspectives to bear on energy dilemmas. At a time when we are confronted with deep questions about how we should live, what kinds of societies we want, and how we should relate to other forms of life, it is crucial to not miss this opportunity. Twenty years ago a group of economists considered the 'uncomfortable thought that they should ponder more fully the ethical foundations of their subject' (Groenewegen 1996: 12) – an admission that is also shared today by many leading economists of energy and climate change (Broome 2012; Stern 2014). But ultimately, our energy predicament is not simply about efficiency and other calculations that allude to notions of objectivity, but also importantly about values. And this puts us squarely in the domain of ethics.

The promise and predicament of critique

In anthropology, the use of ethnography to draw critical attention to practices and institutions that readers may take for granted is as old as the discipline itself (Hart 2001; Holbraad 2012: 35). The practice of 'cultural critique' that unsettles and relativizes assumptions has been foundational to the establishment of anthropology and its ongoing intellectual project. As noted by Keith Hart, central to the practice of cultural critique is the practice of judgement: that is, 'the ability to form an opinion on the basis of careful consideration ... of worth' (2001: 3037; see also Peters & Lankshear 1996: 54). Despite the challenge of awkward scales, if not the incommensurability of concepts, a deeply subjective process of translation, rescaling, and refocusing is necessary for the anthropologist in order to discern the worth of persons and things across 'contexts' (Feuchtwang 2010; Strathern 2010). How can charcoal be 'green'? To what extent can oil be a 'gift from God'? And what does it mean to say that your low return on gasoline is due to your family's misbehaviour? Categories of being have to be rendered intelligible and judged for their worth so that domains come to intersect and interrelate. Recognizing that we are not dealing with 'matters of fact' but 'matters of concern' (Latour 2004:

232), cultural critique renders explicit the emergence of what the anthropologist deems to be valued forms.

The intellectual practice of the discipline has been subject to intense scrutiny, introspection, and questioning since the establishment of anthropology as an academic discipline in the late nineteenth century. It has thus been commented that 'anthropology has been in crisis for as long as anyone can remember' (Grimshaw & Hart 1994: 227). What is interesting to note is that whilst these challenges have been numerous and far-reaching, none of them have put a serious question mark by the practice of cultural critique. Rather, it grew in prominence as emphasis shifted from life to text, from power to authority, from explanation to interpretation. And with these shifts came a greater analytical affordance for cultural critique and practices of judgement. Anthropologists could not claim to root their judgements in 'objective facts' or in supreme 'expert knowledge' accumulated through participant observation (Clifford 1986: 2). Instead, ethnography came to be understood as much as a literary endeavour as a scientific one, providing not facts but 'fictions in the sense of "something made or fashioned"' (Clifford 1986: 6). Language could be regarded not simply as descriptive but also as persuasive, while accounts could be regarded not as representative but only ever as partial and political. These critical introspections challenged the ethics of representation and the purpose of anthropology as they urged us to consider whom we write for and how we produce knowledge. While some saw this as a dangerous and dramatic path towards endless fragmentation and excessive relativism (Gellner 1992), it offered 'an invigorating stimulus' to the practice of cultural critique (Hart 2001: 3040).

Recognizing how cultural critique is rooted in judgement, some scholars have offered poignant self-reflexive accounts of how they deal with the difficult nature of making analytical judgements in anthropology: that is, a mode of reasoning that entails both knowing and valuing. Stephan Feuchtwang (2010) describes the difficult balancing act that he has experienced between his personal political persuasions and the realities of fieldwork and analysis. For him, it has required a bridging of multiple contexts and time lags in order to repeatedly correct his 'double vision'. And for Marilyn Strathern (2010), it has been a long process of learning when and how she judges in her personal and ethnographic experiences. She has come to realize moments in which worth can only be established when she takes a step back and suspends immediate judgement. These personal accounts of academic practice demonstrate how important, yet profoundly difficult, it is to know how we make judgements and assign value to that which and those whom we seek to understand. As noted by Susanne Brandtstädter and Karen Sykes,

> To distinguish between the moralist and the critical polemic is a matter of knowing what *judgement is, and is not* . . . Passing judgement means combining the felt sense of what is a good decision with careful reasoning about the possibilities of ever knowing another person's 'true' intentions. Exerting judgement in order to correct wrongs and grievances suggests that anthropology might step too closely along the moralist's path (2010: 91-2, italics in original).

As we will show in the following section, anthropological studies of energy have been numerous and wide-ranging. However, they have often exerted unreflexive judgement on what the place of energy in human life *should* be, which energy sources are *good*, and whose conduct is *wrong*. While judgements are fundamental to our practice of cultural critique, we can learn much from those anthropologists who have come closer to knowing what judgement is. This is particularly crucial for research on energy, where

personal political persuasions can so easily cause 'double vision' and where many energy actors have come to anticipate our hostile criticism.

Thinking anthropologically about energy

Anthropologists have been working on issues of energy since Leslie White's (1943; 1959) early thesis that the 'cultural development' of societies could be correlated to their energy production. Since then, ethnographic studies of energy have contributed key perspectives to the discipline as a whole. Given its conceptually vexing status as material yet immaterial, near yet distant, potentially dangerous yet necessary to life, energy has offered a particularly rich arena from which to explore human social life. The dominant Western understanding of energy as 'the capacity to do work' emerged from a particular historical and cultural context in eighteenth-century Europe and with the particular aim of improving the efficiency of machines. This context of the Industrial Revolution resulted in 'norms, values, and principles' of energy deriving from 'the scientific control of the forces of nature through mathematical language and the application of the scientific method' (Frigo 2017: 7, 8). These particular assumptions do not hold across other understandings of energy, such as the Vedic concept of *agni*, the Chinese *qi*, the 'vital energy' animating agrarian communities in Panama and Colombia (Gudeman 2012), or a more diffuse force of life that many Americans believe is embedded in relationships among humans and other entities (Lennon 2017; Rupp 2016). Ethnography richly demonstrates the multiple and sometimes conflicting ways in which people understand and experience energy, from Alaskan Native communities and scientists weighing renewable and fossil fuel development (Chapman 2013) to citizens of São Tomé and Príncipe anticipating a future with oil (Weszkalnys 2011; 2014).

Ethnographic studies of electrification projects have been particularly evocative for illuminating the social construction of energy and processes of cultural change. These show that new technology is embedded in, but also transforms, its sociocultural, economic, and political contexts. In rural Zanzibar, people associated newly provisioned electricity with Islamic ideals of purity and safety, even as the ability to stay up watching television past sunset resulted in some people missing morning prayers. Religious restrictions there against men and women sharing social space relaxed but did not disappear in the context of newly lighted homes (Winther 2011). For Peruvian *campesinos*, off-grid electricity offered a welcomed sense of heightened connectivity with the wider world along with the ability to work locally in the village instead of migrating to the city (Love & Garwood 2013). Indian villagers with access to small solar electricity batteries drew on kinship idioms and expectations when sharing them with others in the vicinity (Singh, Strating, Herrera, van Dijk & Keyso 2017). These approaches depart from the cultural evolutionist framework, which Leslie White advocated during the discipline's first sustained interest in questions of energy.

Energy's infrastructural dimensions raise further methodological opportunities and challenges. As Dominic Boyer writes, the 'enabling power' in electricity is in some ways like other forms of infrastructures, being at once both a 'thing' and a 'relation between things' (2015: 532, quoting Larkin 2013: 329). Rather than interacting with energy directly, people often experience it indirectly through their use of objects, such as engaging with electricity through manipulating electronic devices or gasoline through driving cars. This dimension of energy lends it a certain invisible quality, which scholars and activists argue accustoms consumers to rely on more and more quantities of it without being aware of their consumption, thereby exacerbating social and environmental harms

in the process (Huber 2013; Hughes 2017). Other research and the contributions to this special issue underscore that this invisibility relates particularly to people who are accustomed to its regular flows: while blackouts prompt New Yorkers to suddenly reflect on the energy on which they depend for their daily livelihood (Rupp 2016), energy is an everyday topic of conversation for those who lack regular access to it (Degani 2017; Kesselring 2017). As this special issue makes clear, the invisibility of energy for consumers does not extend to those who sell or produce it, such as the indigenous Sanema who sell gasoline to artisanal miners (Penfield); the Malagasy who make, trade, and use charcoal (Walsh); the Wyoming coal miners who ground their sense of national belonging in their status as energy providers (Smith); and the oil executives, experts, and other actors who imagine and bring about future development as well as the end of production (High, Mason, and Wood). Nor does it extend to the solar humanitarians who design, build, and sell solar photovoltaic technologies to those living in energy poverty (Cross) and to the species that attest to the harms of wind turbines (Howe). Collectively, our research asks for whom energy is invisible, when, and with what effects.

Even though energy is thus to some extent an abstract phenomenon, mostly experienced through its material mediation, it nonetheless deeply informs how people view and understand the world (Strauss *et al.* 2013*a*). Energy-based metaphors abound in the English language: we cure the fatigue of 'drained batteries' by 'recharging', we 'shed light' on ideas that can in turn be 'illuminating', and we praise attentiveness as being 'plugged in'. But beyond metaphors, energy also shapes how anthropologists have theorized that world. Boyer goes so far as to assert that electricity is the 'foundational apparatus upon which the experience of modernity has been constituted since the late nineteenth century', yet it 'hides in plain sight' (2015: 532). He argues that electrical thinking has shaped key paradigms and approaches in social theory, including Freudian metapsychology, cybernetic theory, and the decline of culture theory in favour of 'open systems' of operation, code, force, and flow. Perhaps more than any other area of scholarship, energy has seeped into anthropological theorizing that seeks to advance cultural critiques of corporate and state power.

Critiques of corporate and state power

Ethnographic studies of energy have served as a backbone for the long-standing anthropological project of critiquing corporate and state power and their mutual imbrication. While this scholarship has generated productive theoretical paradigms and provided platforms for more engaged ethnography, it has also profoundly narrowed the kinds of ethical questions and perspectives that the discipline has considered in relation to energy. This trend is particularly evident in the ever-growing anthropology of oil (see Appel, Mason & Watts 2015*a* and Rogers 2015*b* for more detailed summaries). Anthropologists have documented and strongly criticized the troubling political, economic, and environmental effects of oil production around the world. They have done so by questioning the mainstream 'resource curse' theory that dominates policy-making and other social science research on oil (e.g. Appel, Mason & Watts 2015*b*; Gilberthorpe & Rajak 2017; Reyna & Behrends 2011; Weszkalnys 2011; see also Watts 2004). Rather than reproducing that framework by attributing blame to 'weak governance' by 'failed states', anthropologists have demonstrated that oil is central to the performativity of state power.[1] At the same time, anthropologists have documented the ways in which oil development intertwines the power of the state with that of transnational capital, especially in producing harm against already

marginalized groups such as indigenous communities (e.g. Cepek 2012; Davidov 2013; Sawyer 2004). They have revealed how, through processes of abstraction, companies cultivate the appearance of separation between themselves and local populations, thereby disentangling themselves from and abdicating responsibility for any problems that may arise. Appel (2012) has powerfully demonstrated such processes in her research on Equatorial Guinea's offshore oil industry. Far from a monolith, the oil 'industry' emerges as a distributed assemblage of corporate forms as well as 'expansive and porous networks of labourers and technologies, representation and expertise, and the ways of life oil and gas produce at points of extraction, production, marketing, consumption, and combustion' (Appel *et al.* 2015*a*: 17; see also Ferguson 2005). This approach to oil is a key part of broader anthropological trajectories that theorize 'resource materialities': materials conventionally referred to as resources, such as oil and gas, exist in distributed assemblages of extractive infrastructures (such as pipelines, roads, and tanks), everyday practices, entities such as corporations, and discourses of the market, development, and nation (Richardson & Weszkalnys 2014).

Even a brief overview of the anthropology of oil makes clear that this area of scholarship shares the larger discipline's predilection for non-Western fieldsites. However, beginning in the mid-2000s, the boom in unconventional oil and gas onshore production brought anthropological questions about energy squarely back to locations such as the United States and Australia.[2] The vast majority of anthropologists working in these regions framed their work in terms of an explicit critique of corporate power. For instance, the editors of the book *ExtrACTION: impacts, engagements, and alternative futures* conclude their introduction by arguing:

> There is perhaps no other issue that threatens humankind as does unchecked industrial-scale resource extraction, and it is this dilemma that 'extr-ACTIVISTS' seek to resolve. Local communities, activist coalitions, and forward thinking governments are seeking to alter their fate as victims of extraction . . . leading the way to a post-extractivist future. The ultimate goal of this text is to share their stories and to encourage others to follow their path in building a world driven by principles other than those tied to legacies of exploitation and injustice (Jalbert, Willow, Casagrande & Paladino 2017: 11).

The contributing authors synthesize and amplify many of the existing trends in that literature, which document and critique the social and environmental dislocations and insecurities engendered by shale oil and gas production. They do this by studying the people who are critical of the industry, often because they are negatively impacted by it in some form (see also Hudgins 2013; Hudgins & Poole 2014; Paladino & Simonelli 2013; Pearson 2017; Willow 2018; Willow & Wylie 2014). Work by Kim de Rijke and colleagues (de Rijke 2013*a*; 2013*b*; Espig & de Rijke 2016) on coal seam gas conflicts in Australia stands out for its broadening of research questions and interlocutors to include people who work inside of the industry as well as those who oppose it. As such, this work builds on other research in the anthropology of oil that examines the knowledge, practices, and world-views of experts and executives (High, this volume; Hughes 2017; Mason, 2007; 2013; this volume; Rogers 2015*a*; Wood 2016; this volume).

As many anthropologists have heeded Laura Nader's (1980) early call to study energy experts and other professionals (see, e.g., McLeod & Nerlich 2017; Newberry 2013; Özden-Schilling 2015; 2016), it is important to note that far less attention has been directed towards rank-and-file labourers (see High, this volume; Smith, this volume; also Atabaki, Bini & Ehsani 2018; Ehsani 2018: 21). The critiques that have been advanced against corporate and state power have largely ignored the very people who make

up these institutions. However, the little work that has been done in this area has been generative. Elana Shever (2012) shows that the kinship practices of oil workers accompanied and facilitated the privatization of the Argentine oil industry, while Diane Austin and her colleagues (Austin 2006; Austin & McGuire 2017; Austin, McGuire & Higgins 2006) have used their long-standing research with workers in the Gulf Coast region of the United States to illustrate the massive changes that accompanied the industry's movement into deeper offshore waters, presenting greater risks to workers and communities alike.

Anthropological engagements with coal have generated strong critiques of state and corporate power from the perspective of labour. However, it is only recently that a few scholars have begun to explicitly connect these critiques to issues of energy as such. Coal mining has been central to theories of class and capitalism (Gibson-Graham 2006: 208; Long 1989; Montgomery 1987),[3] and with the declining fortunes of the industry, coal mining towns have been key sites for studies of post-industrial decline (Charlesworth 2000; Kideckel 2008; Stewart 1996; Thorleifsson 2016). The gender dynamics of an industry (in)famous for its dominance by white men have generated rich studies of gender and work (Lahiri-Dutt 2012; Moore 1996; Rolston 2014; Scott 2010) and notions of 'race' (Brown, Murphy & Porcelli 2016). Jessica Smith (this volume) builds on this literature by considering the specific dimensions of coal as an energy source, showing how conceptions of energy provision and exchange undergird miners' sense of personhood, vocation, and national belonging. The energy-based dimensions of coal are also evident in ethnographic research on anti-coal activism, as over 90 per cent of coal is used to generate electricity. Bryan McNeil (2011) offers a textured account of the moral dilemmas that local people face when their mountains become targets for mountaintop removal mining (see also Witt 2016). Viewing morality as a 'social process people use to decide right from wrong in a complicated social world' (McNeil 2011: 65), McNeil explores the contestations over values and attachments to place that inform an environmental organization's criticisms of both coal companies and government at the state and federal levels. In New Mexico, the Navajo (Diné) Nation must also grapple with economic dependence on coal corporations and the federal government while criticizing the same sector's environmental impacts, as revealed by Dana Powell (2017; 2018). She argues that the defeat of the proposed Desert Rock coal plant was grounded in Navajo visions of autonomy and sovereignty that challenged state and corporate colonial histories while engaging with debates over global climate change.

Indigenous critiques of settler colonialism and intersection of land use and racism in the US Southwest figure particularly prominently in ethnographic studies of nuclear energy. Valerie Kuletz explores how scientists and Native Americans differently understand landscape: whereas many indigenous communities understood the desert as a 'geography of the sacred', scientists viewed it as an empty 'sacrifice zone' and 'expendable landscape' to be used for the development, testing, and waste storage of nuclear materials (1998: 12-13). Many Navajo went to work as uranium miners, suffering grave consequences to their health because the federal government and mining companies failed to inform them of the potential risks (Brugge, Benally & Yazzie-Lewis 2006). Traci Voyles (2015) ties the two histories together in her concept of 'wastelanding' in Navajo Country, a process whereby both the environment and the bodies of the people inhabiting it are rendered pollutable. Complementary work explores how communities come to accept the risks of nuclear waste disposal, from the New Mexican town that hosts the Waste Isolation Pilot Plant, the only active nuclear waste storage facility in

the United States (Richter 2017), to the Skull Valley Band of Goshute Indians in Utah, who contemplated concepts of stewardship during their consideration of hosting a nuclear waste disposal facility in order to generate much-needed economic development (Clarke 2010; Hanson 2001). In a very different context, Françoise Zonabend's (2007) ethnography of a French nuclear waste processing plant shows how workers and local residents understood risks while enabling family life to go on as usual by disassociating the possibility that they could be affected by radiation and contamination.

One of the distinguishing features of anthropological and closely related work on nuclear energy is its long-standing and critical engagement with scientists and other industry experts. Indeed, one of the most enduring legacies of work done by anthropologists on energy in the late 1970s and early 1980s are Laura Nader's (1980, 1981) reflections on energy and expertise that stemmed from her serving on the US National Academy of Science's Committee on Nuclear and Alternative Energy Systems (CONAES). Her observations led her to identify the implicit cultural assumptions animating much policy-making, from 'group think' and a rejection of energy conservation and 'soft paths' like solar energy (1981) to an 'inevitability syndrome' that excluded from consideration models that did not rest on ever-expanding resource use (2004). These themes remained central for ethnographies of nuclear statecraft (Gusterson 1996; Hecht 2000; 2014; Masco 2006) as well as the growing anthropology of energy in general. Studies of oil highlight a similar 'inevitability syndrome' that assumes that the world will always need hydrocarbons (Chapman 2013; Huber 2013: 309; Hughes 2017: 90), and research with scientists producing biofuels likewise identifies the assumptions and contradictions animating their everyday practice and view of energy (McLeod & Nerlich 2017; Newberry 2013).

To a lesser extent than research on fossil fuels and nuclear energy, some research on renewable energy also advances critiques of corporate and state power, from the 'extractivist' logics of wind energy projects (Argenti & Knight 2015; Boyer & Howe 2019; Franquesa 2018) and rural resistance to 'Big Wind' and the marginalization of the public in siting decisions in the American West (Phadke 2011; 2013), to the harms shouldered by neighbourhoods cross-cut by massive transmission lines that carry renewable energy to urban consumers (Vandehey 2013; cf. Wuebben 2017). Dominic Boyer and Cymene Howe's (2019) research surrounding controversial wind park projects on the Isthmus of Tehuantepec in Oaxaca, Mexico, stands out in the anthropological literature on renewable energy for questioning the 'good' of wind power. They argue instead that wind power did not have a 'singular form or meaning' in their research but 'was a different ensemble of force, matter and desire; it seemed inherently multiple and turbulent involving both humans and non-humans' (2019: 4). Their critique inspired the concept of *energopower*, drawing attention to the multiple ways in which political power is exercised and contested through electricity and its concomitant infrastructure, such as grids (Boyer 2014; 2015; Boyer & Howe 2019; see also Mitchell 2011). Steeped in neoliberal development logics that aligned Mexican government agencies with renewable energy corporations, the project threw into sharp relief the fissures between, on the one hand, advocates for renewable energy transitions that would benefit the planet by reducing carbon emissions and, on the other, local community members who opposed the project on the grounds of its impacts on their fishing livelihoods and the lack of free, prior, and informed consent in approving it (Howe 2014). Howe troubles facile calls for clean energy transitions by revealing the competing ethical claims at play: '[L]ocal environmentally informed responses and those that purport to speak on

behalf of a global scale are often conflicted, and their sources of knowledge disparate' (2014: 395). In this case, even endangered species whose existence is 'actively balanced against a "greater good" for humanity' can 'speak' through their threatened status and environmental management regimes (Howe, this volume, p. 161). The critique of state and corporate power by Howe and others, as well as their research on the troubling environmental effects occasioned by large-scale wind energy development, provide a valuable counterweight to the tendency in anthropology to associate such negligence primarily with fossil fuels while calling for increased energy generation from renewable sources, as we discuss next.[4]

Energy transitions

In addition to this long-standing critique of corporate and state power through ethnographic studies of various energy sources, a second and complementary underlying theme of the anthropology of energy is a strong encouragement of energy systems that are more environmentally sustainable at both local and global scales. Much of the surge in anthropological studies of energy is tied to growing concerns about the contribution of energy systems to climate change (Rogers 2015*b*: 366). We argue here that the overarching frame of 'energy transitions' has narrowed the scope of how anthropologists understand and engage with the ethical dilemmas posed by energy. Calls to hasten a transition to less carbon-intensive forms of energy all too often cast fossil fuels – and the people whose work and lives bring them into being – as immoral (Smith, this volume). This precludes understanding the ethical logics at play in those distributed assemblages and hinders our ability to engage with and respond to them.

Almost without exception, anthropological research on energy either presumes or advocates an energy transition. The 2014 special issue of *Anthropological Quarterly* puts forward the concept of 'energopower' in the very context of a 'transition' (Boyer 2014). The editors of the *Cultures of energy* volume likewise frame anthropology's contribution to energy studies in a highly specific ethical register. For them, the use of fossil fuels must and will decline in the coming transition towards more 'sensible and sustainable' energy futures, with anthropologists assisting in that transition (Strauss, Rupp & Love 2013*b*: 11-12). The editors of the 2016 *Economic Anthropology* special issue on energy similarly argue that because 'the postcarbon transition ... is now inevitable', anthropologists must encourage people to 'make room for the development of plausible postcarbon narratives' (Love & Isenhour 2016: 8). And the introduction to Imre Szeman and Dominic Boyer's *Energy humanities* anthology calls for a 'sociopolitical revolution that is both necessary and unavoidable' in order to address 'the social, cultural, and political challenges posed by global warming and environmental damage and destruction' (2017: 7, 1). We caution that this emphasis on transition casts particular sorts of energy sources and energy futures as good or desirable, leaving little room to understand how people themselves might consider the ethical dimensions of energy.

The limitations when taking this kind of approach are made clear in David Hughes' monograph *Energy without conscience: oil, climate change, and complicity* (2017). Starting with the premise that the problem of oil is that it has not been made a moral issue – an assertion that other scholars (e.g. Appel *et al.* 2015*a*; High, this volume; Watts 2008) would strongly resist – his aim is to correct a so-called 'ethical deficit' that is said to facilitate the 'contemporary great evil of dumping carbon dioxide into the skies' (Hughes 2017: 14). For Hughes, Trinidad and Tobago makes for an especially compelling case as the island country stands to suffer from the sea-level rises induced

by climate change, yet depends on massive oil production and export for its economic growth. In addition to criticizing petroleum geologists for facilitating the continuation and expansion of oil production, he goes a step further to argue that Trinidadian environmental activists and ordinary citizens are also 'complicit'. This is because, in his judgement, they are 'collectively benefitting from the lethal hydrocarbon system and, in so doing, exacerbating climate change' (2017: 120). Hughes argues that a lack of sympathy for one's interlocutors is required for a 'militant anthropology of elites' that emphasizes 'responsibility more than care' (2017: 4). He believes that his duty – and the call for the social science of climate change – is to reveal the wider harms caused by his interlocutors rather than deferring to them with 'waiter-like ... humility' (2017: 63, quoting Rabinow 1977: 45; see also Benson & Kirsch 2010). While acknowledging critiques of North Atlantic environmentalists acting imperialistically by imposing their agendas on the Global South (2017: 63), Hughes argues that the grave dangers posed by climate change necessitate such unsavoury interventions.

Hughes' agenda rests on and emphasizes a black-and-white ethical world where oil is immoral and his interlocutors are 'in the wrong and doing wrong' (2017: 4, 151). His book concludes with optimism, forecasting that 'people of good conscience will eventually strand conscienceless forms of energy. Oil will pass from inevitable to immoral to impossible' (2017: 148). In support of his view, he cites Barack Obama's blocking of the Keystone XL pipeline and the desires of an influential Trinidadian policy-maker to install wind turbines on the country's north coast (2017: 152). His conviction that 'virtually the whole world' is moving towards a low-carbon future and a 'rapid economic and political shift to sustainability' (2017: 152) seems anachronistic in the wake of Trump's actions approving controversial pipelines, extending support for the coal industry, and leaving the Paris accords.[5] This is not to mention the explosive growth in oil and natural gas production in the United States and other shale fields following the large-scale application of hydraulic fracturing and horizontal drilling over the last decade.

Hughes' work exemplifies a broader failure to understand the ethical sensibilities of others, judging them by the analyst's standards of right and wrong. This creates blind spots in our disciplinary understanding and thus in our ability to engage across difference (High, this volume; Howe, this volume; Smith, this volume) as we imagine 'new global energy arrangements' (Appel, this volume). While we do not need to *endorse* the ethical standpoints of our interlocutors, we do need to be able to understand them on their own terms in order to respond to them. Powell's (2018) nuanced exploration of the controversy surrounding the proposed Navajo Nation's Desert Rock coal-fired power plant provides one example of how to do so. She squarely situates her research within her own history as an activist ally for indigenous environmental justice movements. In making the 'dizzying' shift from 'activist to researcher' (2018: xiv), the complicated ethical positionings she came to recognize among the Diné in relation to coal and indigenous sovereignty prompted her to rethink 'the logics and allegories of global environmentalism' (2018: 14). She traces out a 'hybrid' ethical positioning among the Diné in which they can value coal as a source of financial security and as a symbol of anti-colonial resistance, at the same time as they criticize the 'intensification of large-scale extraction' that reshapes the landscape and climate that forms the basis for their way of life (2018: 147). Crucially for the purposes of this volume, the hybrid ethical positioning she recognizes in the Navajo Nation invites reconsideration of the 'universal motifs' underlying 'dominant projects in the energy humanities and social sciences' (2018: 14), opening up space in anthropological explorations of energy dilemmas to include

the questions, desires, and concerns of humans and more-than-humans who inhabit 'ethical worlds' that are distinct yet interlinked with our own.

Essays in the volume

As a whole, the special issue lays out a new approach to analysing the ethical worlds of energy as they are experienced by humans and more-than-humans, spanning a diversity of engagements with energy in a variety of geographical spaces. While we are attentive to the lived experiences of our interlocutors, we situate these within larger structures of power and longer political-economic histories in order to grasp the complexities involved in imagining energy futures. For example, Smith shows that the Wyoming miners' sense of vocation as energy providers comes to be only within larger trajectories of US energy policy, and Walsh argues that new renewable initiatives in Madagascar form part of a 'Regional Modernization Strategy' funded by international donors and viewed as 'pro-poor, pro-development, and a potential driver of sustainable economic growth' (Walsh, this volume, p. 118, quoting Ackerman, Kirtz, Andriamanantseheno & Sepp 2014: 38).

As a whole, the special issue seeks to make multiple interventions into the often unstated ethical paradigms that animate anthropological studies of energy. It opens by pairing Mette High's exploration of Colorado oil and natural gas industry actors' broader, cosmoeconomic understandings of oil as a force for good with Jamie Cross's analysis of 'solar philanthropists' who seek to use off-grid renewable energy to alleviate poverty in sub-Saharan Africa and South Asia. This pairing unsettles simplistic judgements of fossil fuels as necessarily party to immoral or amoral projects and renewables as the opposite. It also invites theorization across two energy sources that are usually considered separately. High illustrates how oil and gas exploration is informed by multiple projects and moral ambitions that require analytical attention to broader understandings of agency, responsibility, and devotion. She argues that although energy projects may appear like any formal company promotional pitch, the oilfield and corporate office actors' own ethical reflections reveal more-than-human visions of oil's potentiality. Her essay thus demonstrates how multiple and diverging ethical registers inform the valuation of oil and people's moral ambitions of doing good through oil. Cross also takes up the theme of doing good through energy, but does so by troubling the 'solar utopias' imagined by the people who design, build, and sell solar photovoltaic technologies to those living in energy poverty across sub-Saharan Africa and South Asia. These moral projects give rise to ethical tensions and ambiguities, as they require finding a balance between the gift of humanitarian aid and the logic of market transactions. Cross thus shows that the energy futures envisioned by the solar philanthropists reproduce forms of production and exchange, ownership and property that characterize capitalist economies, including the privileges of race, gender, and class.

The next set of essays, by Caura Wood and Jessica Smith, add further complexity to hasty portrayals of morally depraved fossil fuel energy worlds. They highlight the ethics of return that animate oil executives in Canada and coal miners in Wyoming, respectively, as they grapple with the decline of their livelihoods and the erosion of crucial relationships. Wood explores the ethical dilemmas of a Canadian oil and gas company on the verge of insolvency. She shows how debtors focus strictly on calculative regimes of recovery, with no moral regard for the consequences of 'market death' as experienced by executives who have obligations to families, employees, and known shareholders. Attention to the forms and conditions of such disentanglement with

insider equity capital in times of loss highlights how ethical registers are at work in the flows of capital and oil. This is manifested evocatively through negotiations over the fate and ownership of 'orphaned' wells as it is decided that they will end their productive lives. The Wyoming miners who form the basis of Smith's essay have considerably less power to shape energy investments and infrastructures than do the elites studied by High, Cross, and Wood. But like Wood's executives, they, too, ground their senses of personhood and vocation in long-standing relationships of exchange which they keep in view between electricity consumers and themselves as energy producers. The miners lament denunciations of coal energy that cast blame on them rather than on the network as a whole, and call for energy transitions to begin with a recognition of the debts engendered by mutual dependence rather than the current unceremonial end to a long history of exchange.

While critiques of energy often focus on conflicts that emerge during production, as discussed earlier, the next set of essays, by Andrew Walsh and Arthur Mason, enter into the ordinary ethics of unexpected but crucial ethical worlds of energy. Focusing on charcoal, an energy source deceptively viewed to be 'mundane', Walsh illustrates the material, social, and ethical entanglements embedded in the making, trading, and use of this fuel in the lives of Malagasy people. He argues that charcoal, while good at being a commodity, is never fully alienated because Malagasy keep keen attention to how it links people with matter, markets, and one another – in ways that echo the Wyoming miners, though at smaller and more immediate scales. Western environmental organizations seeking to slow deforestation try to promote 'Green Charcoal' that is more efficient and sustainable, yet it is disruptive to the ordinary ethics of charcoal. The villagers' less than enthusiastic support for the programme thus underscores the potential for conflict between the ethical worlds of environmental organizations and the people they seek to serve. Mason also trains anthropological attention on ordinary ethics, but in the powerful 'energy salons' where the world's elite gathers to craft energy policy. He sketches out a broad transformation in the production of energy knowledge provisioning in the Global North, in which the consultants who dole out predictions inside of elite spaces have eclipsed more democratic mechanisms of deliberation and oversight. Analysing the importance of luxury for imbuing the information provided by the consultants with prestige and trustworthiness, Mason argues that a certain virtue ethics proliferates as clients look to the person-based qualities of energy consultants as guarantors of their ability to recommend a judicious course of action.

Finally, the essays by Amy Penfield and Cymene Howe argue that the anthropology of ethics has been strikingly human-centred and call for greater attention to how more-than-human beings figure in the ethical worlds of energy – as also argued by High in the context of psychic practitioners and devoted Christians in the US oilfields. Penfield's study of gasoline in the everyday lives of indigenous Venezuelan Sanema points to the composite nature of ethics and energy, as the Sanema recognize agency in gasoline itself. Increasingly drawn into gold mining activities, dilemmas of kinship, the animist world of vengeful spirit masters, and ethically infused rumours of disaster, gasoline is considered a vital but volatile substance to live with. As gasoline is variously entangled in Sanema social worlds, Penfield suggests a 'composite ethics', which is premised on collective personhood. Such an ethics does not depend on a notion of the bounded individual subject, which forms the basis of much anthropological scholarship on ethics. Howe also expands the collection's treatment of energy ethics to encompass other-than-human entities in her exploration of a controversial industrial-scale wind

park in Mexico's Isthmus of Tehuantepec. Following Foucault, she proposes that there is a form of parrhesia – a Greek form of 'truth speaking' – at work in how nonhuman beings like birds, hares, and bats are enunciated in environmental management regimes that seek to synchronize human and nonhuman life in settings of both local and global ecological failures. The wind energy project thus weighs the 'greater good of the climatological commons' (Howe, this volume, p. 163) against particular places and species. Howe's research makes clear the inherent political dimensions of ethical dilemmas, pushing readers to consider the collision of competing (and sometimes mutually exclusive) notions of 'the good' across the varying scales at which ethical standpoints are articulated by humans and other-than-humans.

Finally, Hannah Appel's concluding synthesis explores the implications of such multiple and coexisting 'ethical worlds'. She invites reflection on how anthropologists can fruitfully bring textured accounts of deeply held ethical worlds to bear on the long-studied histories and power imbalances in which they take shape. As she notes, careful ethnographic attention to energy dilemmas is urgent and necessary in order to ensure that energy does not become yet another instance of global interventions based on an unquestioned good. It is an issue around which many vocal and vested voices congregate. And as such, it demands of us scholars a particularly close self-reflexive engagement and careful analytical commitment to ensure that all voices get heard – including those who might hold different ethical visions for themselves and their others. This special issue thus calls for attention to an energy ethics that recognizes the multiplicity and diversity, disparity and inequality in life today. It is by attending to and seeking to understand people's own judgements about the place of energy in our entangled lives that we can bring a better world into being.

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[1] This has been shown by Apter (2005) for Nigeria; Breglia (2013) for Mexico; Coronil (1997) and Penfield (this volume) for Venezuela; Limbert (2010) for Oman; Rogers (2015*a*) for Russia; and Shever (2012) for Argentina.

[2] This movement offered the opportunity to strengthen links between anthropology and the long-standing scholarship on energy boomtowns in sociology and rural studies (e.g. Jacquet 2014, though see Tauxe 1993 for an earlier bridging of these theoretical perspectives for energy development in North Dakota).

[3] This literature is heavily dominated by the United States and United Kingdom, though compare Allen (2009) on Japan and Simeon (1996) on India.

[4] Research on urban renewable energy projects in Washington, D.C., also complicates this trend by showing that these efforts are subject to and reinforce neoliberal logics (Morris 2013).

[5] Although Hughes' book was published in 2017, the manuscript was likely completed before the US election of November 2016.

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Introduction : la constitution éthique de dilemmes énergétiques

Résumé

Le corpus de plus en plus conséquent de recherches anthropologiques consacrées à l'énergie permet des explorations critiques des perceptions et utilisations de cette ressource fondamentale entre différentes cultures. Nous affirmons que deux cadres dominants sous-tendent cette littérature : d'une part, une critique du pouvoir des entreprises et des États et, d'autre part, un plaidoyer pour la transition énergétique vers un futur moins chargé en carbone. Ces cadres ont restreint le champ des questions et points de vue éthiques abordés par l'anthropologie à propos de l'énergie parce qu'ils s'appuient sur des jugements qui peuvent, implicitement, dicter les agendas de la recherche ou, parfois, donner lieu à des accusations violentes qui occultent la manière dont nos interlocuteurs eux-mêmes considèrent le caractère bon ou mauvais des ressources énergétiques et les infrastructures sociétales dont elles font partie. Nous proposons une approche plus large et l'étude d'une éthique de l'énergie qui ouvre les dilemmes énergétiques à l'exploration ethnographique. En l'espèce, nous montrons comment ces dilemmes constituent d'importantes sources de connaissances anthropologiques en encourageant des discussions plus éclairées et inclusives sur la place de l'énergie dans les vies humaines et l'existence des autres espèces.