

## **HOW NATURES WORKS**

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### **DRAFT INTRODUCTION**

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## INTRODUCTION

In Paraguay, indigenous crops are eradicated to make room for fast-growing soy. In Malaysia, endangered orangutans are forced to learn how to earn their meals. In the United States, honeybees' lifecycles are reshaped to service vast tracts of monoculture. In India, a prolific cow suddenly refuses to give milk.

These cases, drawn from chapters in this book, raise questions about the changing participants, values, and types of work that shape contemporary life. They invite us to rethink who (or what) should be included as a protagonist in a critical study of labor. They call attention to the many kinds of life made precarious by capitalist growth, as well as the distinct kinds of labor enlisted to feed that growth. These are sites of unwieldy problems that fuel deleterious feedback cycles between human and non-human bodies: the production of more soy-based feed for factory farms, more nonhuman displacement at the edges of rainforests, and more farmers left with little but their labor to sell.

*How Nature Works* attempts to model new approaches to critical labor and environmental scholarship, offering ethnographies attuned to a moment when the planet is wracked with both ecological instabilities — in the form of climate change or mass-extinction — and economic turmoil such as austerity, automation, and job loss. It experiments with how to remake labor politics for distinct and specific contexts where all sorts of new beings are being enlisted into, and remade for, regimes of work. These can be as varied as bacteria for mineral extraction (Labban 2014), or indigenous guinea pigs for fusion cuisines (García, this volume).

Such enrollments can have the effect of exacerbating the intensities of human labor for some, and resulting in little work for most others (cf. Ferguson 2015: 12; Hetherington, this volume).

This book emerged from an Advanced Seminar, convened at the School for Advanced Research (SAR) in Santa Fe, New Mexico in September 2016. The seminar was partly inspired by Kathi Weeks' (2011) call for attention to the ways that work — in many places, but especially in the United States — has been de-politicized in the early 21<sup>st</sup> century. There is no shortage of critiques of conditions of work in journalism and scholarship, and no shortage of efforts to realize a world where human work is more justly remunerated and carried on with more dignity. But relatively few, until recently, seem to question the very institution of work itself, or the logic of a society where work (or its absence) disproportionately shapes everyday rhythms, hierarchies, and identities (but see Gorz 1994; Ferguson 2015; Weber 1906). As Weeks (2011: 7) puts it: “the social role of waged work has been so naturalized as to seem necessary and inevitable, something that might be tinkered with but never escaped.” Instead of denying the worth of actual workers, or of the necessity of productive activity in general, she reminds us that “there are other ways to distribute or organize that activity” and “that is it also possible to be creative outside of work” (Ibid: 12). At a moment when work dominates life in the United States and Western Europe — where people spend much of their waking hours struggling to find and keep work, while a privileged few with stable employment are often overworked — Weeks asks us to consider how the hegemony of work circumscribes our political and intellectual imaginations.

Weeks' diagnosis of the United States' work ethic was striking to us. She describes it as a capitalist society dictated not only by labor value but by *labor as a value* — an economic and social locale where people must not only work to live, they often appear quite willing to live for work (Ibid: 2). Critically thinking of the U.S. as a “work society,” in which public discourse and legislation across the political spectrum often values work above all else, has slowly started to draw the attention of scholars of late. It is not hard to see why. Challenging of capitalist work ethics harkens back to classic discussions of peasant, plantation, and foraging life by Sidney Mintz (1960), Eric Wolf (2001), Marshall Sahlins (1972), and most famously James Scott (1976), who framed efforts by marginalized people to work slower, to work badly, or simply to not work at all as a crucial form of resistance. Moreover, from early moments of graduate training, many of us in academia are told to approach our jobs as a vocation or “calling,” and university culture is even now treated as a model for contemporary corporations that aim to maximize their employees' willingness to work without question (Bousquet 2008; Berardi 2009).

But for our fellow SAR seminar participants — scholars of environment who pay attention to geographical, cultural, and ontological difference — Weeks' notion of a work society raised a lot of questions: What do struggles with and against the naturalization of work look like in the Global South? How are other-than-human beings enlisted into these naturalized work regimes and made part of the material and imaginative logics of the work society? To what extent is a human expectation that other species naturally “work” central to sustaining capitalism as we know it? How are others remaking the politics of work in changing worlds?

The seminar could not have been better-timed for cementing a more critical sensibility towards contemporary work. Right wing governments were in the process of sweeping to power across the globe, some feeding on a generalized nostalgia for dignified industrial labor. Tellingly, most placed environmental protection at absolute odds with the protection of work. In the 2016 general election in the United States, labor was arguably the central concern. “Making America Great Again” was about many things, but most explicitly a promise for the so-called “return” of manufacturing jobs to the US from the Global South. But many of those jobs are gone. The tempos of human labor have been supplanted (and sometimes sped-up) by the work of automated machines, microchips, herbicides, and fast-growing chickens. There is now less work for everyone to go around, even as some humans and non-humans are burdened with more work. Moreover, this job loss did not happen in the distant past. Memories loom large, while material traces linger—on landscapes and on bodies—of histories of past work (see Walley 2013). Rather than just the work *society* of cultural norms and expectations described by Weeks, it is perhaps more accurate to say that many are experiencing shifting and material work *worlds*: uneven and unequal pockets of the planet where human work is re-valued as it comes into combination with the labors and energies of non-humans.

This volume asks how anthropologists of work might reconceptualize and intervene in what appears to be a perilous relationship between the demands of labor (and to labor) and the quest for resources with which to labor. Conversely, it asks how we might develop an environmental anthropology more attuned to workers’ experience, especially in the context of work that both foments environmental devastation or strives toward recovery. Our approach is

to examine the relationship between work and nature not as one of opposition, but as one that is a relational process.

We are writing in a challenging time for labor and environmental movements. But there is no lack of intellectual and material ferment around these issues. Anthropologists and our intellectual kin have long studied the *conditions* of work, attending to both exploitation and creative means of coping with that exploitation (Nash 1979; Taussig 1980; Peña 1997; Bourgois 1988). More recently, anthropologists have shown how insecurity, precarity, and inequality are being exacerbated by policy and trade agreements (see Collins et al. 2010; Cooper 2014; Kingsolver 2001; De León 2015). Likewise, ecologically-minded political economists have challenged the de-valuation and appropriation of plants, animals, and minerals (see J. Moore 2016). A wide range of scholars have developed methodologies for contesting a human exceptionalism that devalues not just nonhuman life but also reinforces racial, gendered, or national hierarchies (Wynter 2003; Haraway 2008; Kosek 2010). In response, some have sought to articulate frameworks that bring attention to multispecies flourishing. These projects, however, can bracket sites where the punishing pressures of capitalist accumulation are more acute (Kirksey 2015; Tsing 2015).

Feminist scholars of capitalism and labor have long pursued a similar project: asking how senses of community and identity emerge through workers' back and forth movement between factories and spaces of domestic reproduction and care (Zavella 1987; Lamphere 1987; Lamphere et al 1993; di Leonardo 1985, 1987). Others, in turn, have examined how

feminist social movements and modes of collectivity have helped transform and resist contemporary toxic environments, from de-industrialized brownfields to the atmospheres of office buildings (Walley 2013; Murphy 2006). The chapters in this volume draw lessons from both feminist anthropologies of work and more-than-human or multispecies anthropology, approaching the environment as a labor question and labor as an environmental question. Doing so, we suggest, affords attention not just to processes of exploitation and destruction but also to new forms of relationality, possibility, and even hope.

It is clear that the Earth has transformed along with the labor process, and neither can go back to how they were. Climate change and environmental disaster, particularly discussions of sea level rise, species extinction (van Dooren 2014; Rose 2013), oil and gas extraction (Weszkalnys 2015; Appel 2015), runaway toxic chemical and pesticide exposure (Shapiro 2015; Guthman 2016), nuclear radiation and fallout (Masco 2016), and landslides and environmental risk (Kockelman 2016; Zeiderman 2016) are of increasing concern in environmental anthropology. “Resources” — the elements of the natural world that we conceptually denote as merely awaiting labor for their transformation into use value — are literally eroding. Climate change, zoonotic infectious disease, agricultural blights, and other economic-cum-ecological crises signal to some a potential for nonhuman nature to push back and to work against capital-centric modes of growth (J. Moore 2015). They suggest how emergent kinds of nonhuman agencies are bubbling all around us, not due to autonomy and a lack of engineering but, as the authors of this volume push us to see, paradoxically tied to and caused by some of the most iconic human efforts to “master” nature.

The title of this volume is meant as a provocation. Since the Enlightenment, work — defined by John Locke as the act of altering nature to make it one’s own — has been understood to be an exclusively human capability. For some, realizing something like this vision of work as *poiesis* for all members of a society, which André Gorz (1994: 55) critically defined as the “non-alienated, autonomously determined activity by which a subject transforms and appropriates the sensible world,” would be a human ideal. But the practical pursuit of such an ideal in actual capitalist cultures and work ethics has led to an irreversible point of no return: a damaged planet saturated by human labor.

Each chapter in this volume works to pull apart discourses of human exceptionalism and the value(s) of work. Some push against this narrative by tracing specific non-humans’ working capacities — along with the histories of violence underlying those capacities — while others complicate the idea that humans have ever worked in an autonomous way (see Andrews 2008). Others still provoke reflection by proposing that the world is not so much “polluted,” as is often lamented, as it is “overworked.” Indeed, even so-called “green jobs” designed to mitigate environmental degradation while boosting employment seem to rely on the assumption that the only way to solve the current planetary crisis is to do *more* work. Postcolonial island residents must sell tourist experience to make ends meet (A. Moore 2015) and struggling colonial crop producers must sell images of themselves and their landscapes along with coffee (West 2012). Ecotourism, organic food production, and geo-engineering can all be read as attempts to re-assert human dominion over nature. Such projects promise a return to a pre-

crisis planetary state through innovation and will — or, even more cynically, to use concern about degradation to generate additional forms of work *and* additional forms of value. With Weeks' (2011) critique in mind, this book instead attends to the possibilities afforded by refusing work — both in ideology and praxis — as the key locus of human *and* nonhuman value.

This book is thus motivated by the idea that understanding the intersections of ecological and economic instabilities requires a critical reconsideration of labor as the overarching measure of human uniqueness, value, and social merit. If we accept that climate change and erratic planetary mutations are largely irreversible — the new normal — then we must now take seriously the capacity of the nonhuman world to work on us, against us, beyond us, and perhaps with us.

### **Nature, Work, and Ethnography**

There is another backstory to this book. Many of the participants in our SAR Advanced Seminar also attended the keynote discussion at the 2014 Society for Cultural Anthropology Meetings in Detroit, where the theme was “The End(s) of Work.” The keynote discussion was between Kathi Weeks and anthropologist Sylvia Yanagisako. When the moderator asked both to describe their respective projects as succinctly as possible, their answers went something like this: Kathi Weeks said, “Political theorists ask: *How do we get out of here?*” By “here” she meant a society that is inherently underpinned by conditions of exploitation, alienation, and inequality. The question for Weeks was how to imagine a better world, a different world that charts a path out of particular constitutive dynamics. Yanagisako’s response to Weeks was:

“Anthropologists ask: *What do we mean by here?*” She emphasized methods for exploring lived relations between labor, capitalism, and inequality — an empirical and experimental project, rather than a general political theory that points directly towards another path (see Ferguson 2015: 32). Or, put differently, she drew attention to the multiple “heres” of capitalism, and alongside them the many potential lines of movement into other futures.

The chapters in this book *might* provide imaginative insights about what comes next. What unites them is that each strives to rethink work and nature through Yanagisako’s question of “what we mean by here.” Each paper is thus firmly ethnographic, while offering an expanded notion of work’s meaning and value. Those expanded notions will vary based on the particularities of their sites. The contributors explore not only historically situated metaphors and narratives about nature’s capacity to work, but also how those metaphors become highly specific material realities. These are sorts of questions, we have found, that many workers across the globe are themselves asking. We are thinking with how others are thinking about *how nature works*. Some of the papers thus offer hopeful alternatives to a life outside of capitalism’s fixation on labor as value, or even outside of work itself. In others, the conditions of the present, in which work seems so precarious yet all-encompassing, are hard to think outside of and overcome. In sum, our collective project is to pay attention to the ways that ecological and socioeconomic conditions are entangled in the minds of those from whom we learn, especially in moments of radical transformation.

We now accept that what we know as nature emerges through work (see Cronon 1995; White 1995; Smith 1984). In the pages that follow, then, we aim to take that observation one step further. In all the cases we describe, our interlocutors consciously treat nonhuman nature as a participant in work. It is when nature is brought into work (rather than when work is brought into nature), we argue, that what work is (and what its limits are) emerge. We are not autonomously conceptualizing nonhumans as workers. Quite the contrary, we are engaging how farmers, plantation workers, lab scientists, animal rights activists, and other interlocutors in our research are thinking about the relationships between nature and work.

The chapters that follow thus consider how humans and nonhumans occupy, make livelihoods from, and make sense of an overworked planet. This notion of an overworked planet can index a dynamic state in which environments have been infused so much work that humans and other species seem to have become permanently devoted to the reproduction of these environments. For instance, it can be seen as shifting earth systems such that the intensity of the heat in sugar plantations changes over time (Nading, this volume), or binds human workers to the everyday remediation of engineered pig biologies (Blanchette, this volume). In some cases, sustaining life-as-normal seems to require ever-increasing inputs of human labor in the face of depleting soils and the perilous state of millions of species, as well as an enduring faith that more labor is the cure. In other cases, an overworked planet refers to an ecology where non-human beings are made to labor at increased intensities and durations, variously becoming super-prolific or exhausted in ways that block and degrade humans'

capacities to work (Besky, this volume; Hetherington, this volume). The nature of work — and of workers — is changing alongside the nature of nature.

Our notion of non-human work is equally multi-faceted. In the chapters that follow, however, we do not simply ascribe work to nonhuman actors (i.e. simply saying a cow “works” when she gives milk, or that a flower “works” when it photosynthesizes). While each of our contributors refuses to theorize work as a uniquely human attribute, the collected essays also resist the urge to merely extend a capacity to work to other beings. We are instead united by an ethnographic attention to moments in which it becomes impossible to treat work as a natural feature of any single species or life form. To be certain, redistributing allegedly purely human capacities — such as communication and signification — across species lines has proved to be an important means of critiquing discourses of human exceptionalism, the view that presents all non-human life forms as identical, as mere “animals” or “plants” (Kohn 2013; Kirksey and Helmreich 2010; Haraway 2008; Latour 1992). Multispecies anthropological approaches have given us new capacities to notice the broad diversity, specificity, and even beauty of life on this planet — and they have done much to illustrate the need to break through the haze of the critical humanities’ anthropocentrism.

Yet as these chapters show, a politics of redistribution becomes tricky when what is being distributed is work itself. To say that all nonhumans naturally work is to risk the projection of the work society onto all of existence, emplacing capital’s fixation on the value of human labor onto all of the planet’s energies (see J. Moore 2015). Indeed, projecting work onto

nonhumans is already quite common. This is well-charted, fraught territory: from sociobiologists' efforts to project (and hence naturalize) human hierarchies and divisions of labor onto ant colonies (Gordon 2016), to some biological sciences' descriptions of primate as calculating, maximizing proto-capitalists (Maestriperi 2007). One of this volume's aims is to both expand our thinking about why work might matter *and* to open space for loosening work's grip on our thinking. If acknowledging the agency and active presence of nonhumans is a key to survival on a damaged planet, we would argue that we simultaneously need to learn how to conceptualize those activities outside the dominant "work" frames of creation, growth, and productivity.

While many of the tools of multispecies ethnography have been developed in spaces of abundant possibility — in ecologies that may not be pristine, but still radiate forms of more-than-human wildness — the chapters in this volume instead critically examine what we might call "troubled ecologies," to adopt and modify Kirksey's (2015) concept of "emergent ecologies." These are laboratories, factory farms, plantations, thinning rainforests, and militarized borders. These are ecosystems that are, at the same time labor regimes: landscapes that have been made to extract work, capitalisms that are themselves ecologies (J. Moore 2015). Donna Haraway (2008: 34), considering interspecies care, explains that industrially farmed sheep in standardized systems, the "domestic ovine eating machines" of global agribusiness, "are rarely asked an interesting question... [They are] not brought into the open with their people, and so with no experience of jointly becoming available, these sheep do not 'become with'" the humans that work in proximity to them. In this volume, we also pay special

attention to troubled species (humans amongst them), the troubled landscapes they inhabit, and to emergent forms of working-with on a degrading planet. We ask, in other words, how critically interrogating work might allow more interesting questions to be asked of altered and imperiled beings such as cows, pigs, sugarcane, tea plants, ginseng, guinea pigs, bacteria, honeybees, mushrooms, and orangutans.

The chapters write across a spectrum of hope and loss, life and death, persistence and eradication. All begin with the premise that work (including emotion work) has been a key site, for better or for worse, through which people have gained intimate familiarity with non-human beings, and that remaking those relationships means approaching work in new ways (see White 1995). This is thus also a call to expand the kinds of questions that we ask of (human) workers. More so than in any other domain of contemporary human experience, labor is the site that puts people into contact with forms of radical alterity, from the energies of flagellar motors that work with more intensity than any technological machine (Hartigan, this volume) to the vital and mysterious rhythms of fungal spores and mushrooms (Satsuka, this volume). Work has altered nature, but it is a basis for how the vast majority of people encounter and know non-humans. Some scholarship on work, in these kinds of pivotal sites for the remaking of planetary ecologies, has a tendency to limit workers to reflections on their own immediate lives and economic-material interests.<sup>1</sup> Chapters in this volume, instead, aim to offer a more bottom-up perspective on environmental devastation by giving workers in proximity to damaged worlds room for reflection on lives and landscapes beyond their own. Amidst an overworked planet that is rippling with past labor, the papers in this volume forefront workers as having important

political and philosophical reflections to make about the state of nature. Put differently, they assert that labor politics need not be only about the rights and value of “labor” (and human laborers) alone.

### **Metabolism and Ecological Crisis**

Much scholarship on work is informed by a Marxist tradition, embedded within which is a distinct theoretical perspective on the relationship between nature and labor. In *Capital Volume 1*, Marx (1967) describes labor as fundamentally an interaction between humans and the natural world:

Labour is, first of all, a process between man and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature... Through this movement he acts upon external nature and changes it, and in this way, he simultaneously changes his own nature... We presuppose labor in a form in which it has an exclusively human characteristic. (Marx 1967: 283-284).

For Marx, it is the capitalist wage relation that intensifies and naturalizes a separation between humans and nature (see 1993: 489). Marx continues, explaining that as humans convert external nature into use-value, “man” “develops the potentialities slumbering within nature, and subjects the play of its forces to his own sovereign power...” It is only under capitalism, when labor itself becomes a commodity, that “We presuppose labor in a form in which it has an exclusively human characteristic” (Marx 1967: 283-284).

For Marx, capital depends upon the acceptance of the idea that labor (and especially labor value) is the exclusive quality of the human. The difference, Marx continues, between nature as worker and human as worker is one of cognition and intent. The distinction is that a bee making its hive and geometrically detailed honeycombs, and an architect designing and building a structure, however simple or complicated, is that the human architect, Marx argues, builds a thing in his mind before enacting that vision materially. “At the end of every labor process a result emerges which had already been conceived by the worker at the beginning, hence already existed ideally” (*Capital Vol 1*: 284). Labor, for Marx — at least under capital’s mode of valuation — can only be the product of human meditation and motion.

Marx’s concept of metabolism [*stoffwechsel*] is also a means of interpreting the material and relational basis of ecological crisis (see Kim, this volume, for a re-reading of metabolism within the red ginseng fields of the Korean DMZ). Marx explains in *Capital Volume 1*:

All progress in capitalist agriculture is a progress in the art, not of robbing the worker, but of robbing the soil; all progress in increasing the fertility of the soil for a given time is a progress toward ruining the more long-lasting sources of that fertility. The more a country proceeds from large-scale industry as the background of its development, as in the case of the United States, the more rapid is this process of destruction. (Marx 1967: 637-638).

Marx's ideas about the metabolic relationship of humans to nature, mediated through labor, have been foundational to the fields of political ecology, environmental history, and critical environmental anthropology. What is alarming about the metabolic processes that Marx describes are his prescient articulations of the finiteness of metabolic relationships: of the inevitability that capital's expansion will meet an end. Environment and economy *are* at odds, though in different ways than the right-wing imaginary would have it.

Richard White's (1995) seminal essay "Are You an Environmentalist or Do You Work for a Living?" critiqued the ways that the binary view of (human) work and (nonhuman) nature shaped the modern environmental movement. He suggested that the capacity to have an environmentalism — to know about, and care for nonhuman worlds — was engendered not through an idealization of a pristine nature but through histories and experiences of work. Work, for White (following Marx), is a human act of altering nature. It is the primary means through which humans engage and commune with non-human beings. Rather than repudiating all work as causing degradation, White asks readers to re-imagine both "nature" and "labor." The former might be found not only in the forests and quarries, but also in the plastics and electrodes of a home office. The latter is not only a means of anthropocentric devastation but also a key mechanism through which to value life beyond the human (see also Cronon 1995, 1983). As White's fellow environmental historian Thomas Andrews (2008) reminds us in a study of coal mining, human labor has always been an ecological relationship; the efficacy of any act of labor is tied as much to the surrounding laboring environments as it is to acts of human ingenuity or skill.

Engagements with Marx's notion of metabolism by social scientists theoretically and conceptually diverge from these more historical approaches. In social science, Marx's ideas are often used to describe a decline from an ideal ecological balance in the relationship between humans and nature. John Bellamy Foster (1999) develops the concept of "metabolic rift" to index the disruption of social and natural cycles under capitalism. For Foster and others, the concept of metabolism condenses Marx's theories of nature and labor to highlight the processes of extraction, use, and consumption that link the realms of the natural and the social. Marx's framework has also inspired much of the interdisciplinary conversation around political ecology, which has nuanced the nature-culture dualism embedded in the concept of metabolism (Smith 1984, Harvey 1996; Bakker 2003; Swyngedouw et al 2005).

More recently, geographer Jason Moore (2013, 2015) has argued that the separation between social and natural systems on which the idea of metabolic rift depends is untenable, since it reifies a nature-culture dualism (see also J. Moore 2016; Schneider and McMichael 2010). Moore views ecological degradation and disaster not as a *consequence of* capitalist modes of production and growth but instead as "constitutive of capitalism as a historical system." Capitalism is not imposed on an ecology, but is itself an ecology — animating relationships between machines, grains, and chickens, along with shaping these discrete creatures themselves in the flesh. This perspective is built on a unique reading of capital's valorization process. While capital only recognizes *human* labor as the source of value, Moore argues, that very labor depends on the "unpaid energies" of non-human natures that are

appropriated during the labor process. Environmental degradation is itself a matter of limiting this “cheap nature” that produces abundance for the appropriation of capital. The result is a re-reading of capital as a project of explicit ecological ordering and devastation. Nature is “cheap,” Moore argues, because nonhumans and land (like domestic workers and slaves) have been unremunerated for the work they do. A radical ecological politics would, as a first principle, assign value to nonhuman work and energies — along with loosening the steadfast hold of capital on the valuation of human bodies’ actions.

This volume is thus hardly the first to explore the ways that non-human beings might be endowed with working capacities, along with querying how acknowledging a laboring ontology of nature could alter the ways we understand classic renditions of human labor. Richard White (1996) himself attempted to interrupt humanist distinctions between *homo sapiens* and the rest of nature in his socio-natural history of the Columbia River, arguing that they all share the capacity to exert energy and effect transformations to the world. Donna Haraway (2008) explored the figure of the “working animal” in colonial and capitalist life in order to illustrate the limitations of how animal rights discourses seek to construct a politics of interspecies connection through what they identify as a shared capacity to suffer and feel pain. By asking what other horizons of connection and mutual interests are made visible by foregrounding non-human work or play, she came to develop a notion of encounter value that stresses how *all* value is contingent on the meeting of distinct kinds. Resonating in some ways with this book’s notion of labor’s efficacy as relational, she framed work — and the capitalist value it produced — to be not an exclusive capacity of any one creature, but instead a process of entangling

distinct agencies. Kendra Coulter (2016) took these insights in new directions, asking how discourses from the labor movement might be used to explore questions of justice for animals that are already acknowledged to be employed, such as police dogs. Jocelyne Porcher's (2014) writing is an important precedent for our own in the way that it articulated the process of domestication as an act of endowing animals with the capacity (and sometimes desire) to work.

These texts' insights have made this volume possible. What they tend to share, however, is a sense that theirs is a project of consciousness-raising. Implicit in some of these arguments is the sense that the articulation of how non-humans work is an act of revealing a radically alternative ontology of life — which it is, perhaps, for anthropocentric kinds of scholarship.<sup>2</sup> This volume, instead, explores the diverse ways that non-human laboring capacities have been an understood property in many working ecologies, ranging from the exhausted tea plants in India to the discoveries of bacterial scientists in sealed and secured university laboratories. We seek to understand how workers in an array of contexts have themselves used this ontology to recalibrate themselves, their labor, and their struggles in new directions. What the chapters that follow illustrate is not only that nature works (or is overworked), but also how this sensibility can remake understandings and practices of labor across the globe, in the diverse ways that human (and non-human) creative activities are understood in the first place. What is needed, we suggest, is a new and expanding set of voices on what work (human or otherwise) is — or potentially could be — in the first place.

## **Capitalism and Its Outsides**

Across Europe and North America, people have witnessed a slow attrition of jobs at the hands of the automation of manufacturing (Kolbert 2016). Canning factories and textile mills have shut down, leaving the women who once worked in them looking for work in a burgeoning market of what David Graeber (2011) terms “bullshit jobs” meant only to guarantee employment and political acquiescence (see Lamphere 1987; Zavella 1987; Collins 2003; Walley 2013). Despite John Maynard Keynes’ midcentury forecasts of a future of less work with the help of technology, there is, at least in “the West,” more work to be found than ever — meaningless work, Graeber (2011) argues — in the current capitalist moment.<sup>3</sup> The inevitability of work has become a defining feature of life in late capitalism. And there are now uncountable new industries designed to aid the overworked: the dog washers, 24-hour delivery drivers, and telemarketers of a service economy (see Hardt 1999; Hardt and Negri 2000; McElhinny 2010; Muehlebach 2011; Yanagisako 2012; Mankekar and Gupta 2016). Reading across the literature in economic anthropology and related fields, then, it would seem that the grip of capitalism over the globe is totalizing, and almost inescapable. While we might expect that a series of catastrophic events, from the 2008 global recession to Hurricane Katrina, would cause resistance to that hold, there is much evidence to the contrary (J. Moore 2016; Adams 2013; Fennell 2015).

But as Anna Tsing (2015) suggests, the production of capitalist value still hinges on the appropriation of non-capitalist life.<sup>4</sup> For Tsing capitalism still depends on, and even generates, a non-capitalist “outside” for its eventual expansion (see also Gibson-Graham 1996). At the same time, capital creates new outsides by abandoning overworked or poisoned landscapes.

Tsing's work calls attention to the life beyond, or outside of capitalism, that emerges from "capitalist ruins." She portrays the matsutake mushrooms, foraged by informal workers—from army veterans to Hmong refugees—in abandoned industrial timber forests in the Pacific Northwest not as "natural resources" but as "gifts." As a gift from nature, mushrooms possess noncapitalist value. Mushrooms are just one example, she explains, of how capitalism generates value from noncapitalist forms.

A discussion of the insides and outside of capitalism is a long-standing interest in feminist anthropology, where attention to the intersections of production and reproduction, work and home, are key features. Feminist accounts of household life initially framed unwaged domestic work as central to capitalism insofar as such work reproduces labor-power. Indeed, the modern form of the nuclear family can be said to have emerged alongside industrial capitalism (Harris 2000; Collins and Gimenez 1990; H. Moore 1986; Engels 2009; Tsing 2012). Anthropologists were among the first feminist scholars to push empirically for an expanded concept of work, focusing ethnographically on spaces outside of the public sphere and outside of the walls of the factory, while also tracking the increased role of women in an industrial labor force (Lamphere 1987; Zavella 1987; di Leonardo 1987; Ong 1987). Bridging these concerns with a burgeoning discussion on infrastructure, Julia Elyachar (2010) similarly discusses the "phatic labor" that women perform that help their husbands' businesses thrive in Cairo. This phatic labor creates a "social infrastructure of communicative channels" that is as essential to the functioning of the economy as more visible forms of infrastructure such as roads, canals, or electricity grids.

Given that it is not just human life that appears to be beset by work, it seems essential to think about work as a relational process, and in so doing to look for the gaps, fissures and weak points in capitalism's global grip. In the chapters that follow, then, we follow Tsing, Moore, and others in taking relationships between human and nonhumans as generative of capitalism. As Laura Bear et al (2015) put it:

[W]e understand capitalism to be formed through the relational performance of productive powers that exceed formal economic models, practices, boundaries, and market devices. Instead of taking capitalism a priori, as an already determining structure, logic, and trajectory, we ask how its social relations are generated out of divergent life projects.

Each of the chapters seek to write against a flattening of work and life — particularly in industrial, or otherwise non-redemptive contexts. We write against a version of work in which workers are defined by and unaware of the means of production. Sites of labor, as anthropologists of labor have long showed, are more than the mere *organization* of work and the control of labor. There is much more going on: love, anger, kinship, refusal, solidarity. How can we account for this excess, what Hannah Appel (2015) calls the “community and environmental overflows” of capitalism? It is attention to this excess that we believe can shape an anthropology of labor and environment that is most suited to the contemporary moment.

Sites of labor, even industrial sites, are *more than* just low-wage labor, disinterested management, and standardized plants. Patricia Zavella (1987), in her ethnography of cannery workers in California, discusses Chicana friendship networks that were engendered through work. Zavella explains that these were women that would not be friends under circumstances outside of work. Work thus engendered an excess, an “abnormal intimacy.”

Work is excessive in the sense of being too omnipresent in the world, and dictating too much of the political imagination. Work is also a process that is prone to many meanings — not reducible to any fixed law — and subject to ongoing surprise, from devastation to solidarities, as it occurs and develops in new environments. Third, work is excessive in that it generates social life, which is outside of a narrow reading of the labor process, or capital’s ascriptions of value. This excess—not work itself—is what makes work meaningful.

This book is a way of knowing work anew: as refusal, as endurance, as energy and exhaustion, as mechanical capacity, as residue, as intimacy, and as something that is not unique, autonomously done, or possessed by anyone or thing. These are moments of extremes, of excess: extinction, decay, collapse, monoculture, epidemics. These are contexts in which nature becomes work and work becomes nature.

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## NOTES

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<sup>1</sup> For instance, and following Timothy Pachirat (2011), it is not unusual to read critical ethnographies of work in industrial slaughterhouses that read indistinguishably from an ethnography of a tire factory — fixated on the struggles of workers to achieve better wages or more dignity. This kind of materialism has a tendency to dematerialize the actual conditions of the work of killing, and downplay — as Pachirat shows — workers' own moral reflections on the sites where they are put to work, and of their own kinds of latent interspecies values.

<sup>2</sup> For a critique of some of these turns of thought, from the orientation of indigenous native American cosmologies, see Todd (2015).

<sup>3</sup> A word of caution is warranted here. While the hegemony of work remains sacrosanct in the United States and many other places, James Ferguson (2015: 21) notes how scarce employment has become in both the Global South *and* in the United States. While, in 2012, the official “unemployment rate” — which measures how many are actively seeking jobs but cannot find them — in the United States was about 7 percent, only 58.6% of people living in the United States were actually working.

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<sup>4</sup> Nature would be included here, along with kinship. Kinship—the maintenance of relations—is itself is work. It is what Michaela di Leonardo (1987) calls “kin-work:” “the conception, maintenance, and ritual celebration of cross-household kin ties, including visits, letters, telephone calls, presents and cards to kin; the organization of holiday gatherings...decisions to neglect or intensify particular ties, the mental work of reflection about all of these activities...” (di Leonardo 1987: 442-443; see also Strathern 1992; Schneider 1968; Carsten 1997; Walley 2013; see also Bourdieu 1977 on practical kinship).