Regrounding the Commons:
Bruno Latour, Ecological Democracy, and Nonhuman Political Representation

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to the School of Graduate Studies in partial fulfillment of the
requirements for the degree of

Master of Arts in Philosophy, Philosophy Department
Memorial University of Newfoundland

May 2020
St. John's Newfoundland and Labrador

Abstract

What is the relationship between science and politics, and especially as it concerns the entities of the sciences and the relevance they have in political processes? In the following thesis, I look to form proper political institutions around nonhuman entities through the work of Bruno Latour and his democratic-ecological ethos by way of his 2004 text the *Politics of Nature: How to Bring the Sciences into Democracy*. In recognition of mass species extinction, the fragility of our soil, the warming climate, the rise of automation, the importance of carbon sequestration, and the various socio-economic problems attached to the environment—what is called *political ecology*—the old binary of science and politics as opposed, as one discipline concerned with technology and natural objects (science), and the other concerned with humans (politics), is becoming less and less tenable as we become more sensitive and inundated with the aforementioned issues.

With the guidance of the sociologist of science Bruno Latour, these essays attempt to use Latour's framework of a *technoscientific* political process, plus an expanded sense of *spokespersonship* as representative institutions for nonhumans. In establishing these processes and institutions, I hope to help orient how we should understand our past failures in improper recognition of nonhumans, and how it is we can better bring nonhumans into democracy through the aid of Latour. By redefining politics as the issues that bring about a concerned public, Latour also looks to include nonhumans as a part of the public. Nonhumans as a public is one of the significant points through these pages.

I hope to accomplish three things in this thesis. 1. Contribute to Latourian scholarship by providing exegesis around his 2004 text *The Politics of Nature.* 2. In doing this, I hope to better situate the current political ecology movements, as seen by a premier thinker concerned with climate change and the Anthropocene. In relation to that contribution, I would like to further establish Bruno Latour as a political theorist with a political philosophy that is worth examining. At the end of this work, I provide my own philosophic contribution in shaping policy and existing institutions in a warming and sea-rising technological future by the aid of Latour's institutional vision from the *Politics of Nature*. The reader will have to reconsider how they view politics, who the constituents are, and whom the "we" are when talking about a common world "we" would like to share. Arguably, the most radical vision for democratic politics in the 21st century is to include those things humans have historically tried to subjugate as mere objects, or the materials of Nature, or the work of social construction. The next step in the democratic project is to include the entities that without human subsistence would be futile: it is time to recognize multi-species living, the collaboration between nonhumans for the sake of human flourishing, and the work that politics can do in organizing a sense of commonality.

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Introduction

The following pages deal with the philosopher of science Bruno Latour, his political ecology, primarily through his turn-of-the-century text *Politics of Nature: How to Bring Sciences into the Democracy*, in the effort to think about the various technological, climate and environmental problems as they relate to science and politics. Because I feel the sense of urgency as it relates to climate change, mass species extinction, all with the effort to pursue technofixes as a response, it was vital for me to make this project a practically-oriented endeavor so that the reader can see both how Latour's vision is playing out in many contemporary situations and how his philosophy can help us in those contexts that have not yet caught on. As one will see, much of this thesis is an explanation around Latour's terminology, institutional vision, and framework as a way of orienting how one of the leading thinkers around the Anthropocene, climate change, and ecological disaster views these scientific and political problems. In this, the majority of my thesis provides an exegesis of the *Politics of Nature* where that exegesis is used in situating Latour's terminology and framework in existing institutions and examples. I aim to contribute to Latourian scholarship and provide a frame for political ecology imagined by Latour, and to further establish Latour as a political theorist for the 21st century, while providing my own contribution by applying Latour's philosophy to contemporary and future institutions and examples.

In Latourian fashion, the triad I am working with concerns democracy, political representation, and the nonhuman entities (be it biological, natural, or technological) the sciences have traditionally been concerned with. What Latour argues for in the *Politics of*

Nature and what I try to establish further is the political representation of nonhumans. Representation happens in two ways: through a technoscientific democratic process by which more entities are taken into account in the socio-political world and then prioritized deliberately by a public who is concerned with the nonhuman-issue at hand. The second way is by a form of spokespersonship who stand as representatives to speak on behalf of nonhumans for nonhuman benefit. I approach these two forms of representation through political examples already actualized: spokespersonship by way of an emphasis on what is known as the "care economy" in which more organizations take on the role of caring for nonhumans; the technoscientific process as an organizational tool for democracy that establishes a sort of citizenship for nonhumans through a process of distributed roles, responsibilities, and bureaucratic measures. What I attempt to explain generally aligns with the STS (science and technology studies) or "science studies" tradition of "socializing the sciences" that Latour is a major figure in. The political representation of nonhumans concerns chapter 2 and especially chapter 3.

What could be called Latour's interlocutor concerns Modernity and its historical separation of science and politics, along with the "modernization" effort where science and technology's responsibility is to find the facts of Nature by coldly and uninterestedly probing through experiment. The Modern framework which Latour argues we move beyond is the focus of the first chapter, where I explain the historical separation between science and politics and why it is the Moderns valued the purification of both disciplines, along with trying to expunge values as being a part of fact-gathering experiments. The fact-value binary is one of the major

dualities I explore in the following chapter. This is what we come to know as building the good common world.

Aside from making Latour's political ecology practically-oriented, I consider my contribution to Latourian thought to be one of further establishing his political philosophy. Bruno Latour wears many hats: he is a trained anthropologist, a philosopher of science, a sociologist, with looser labels such as a semiotician, a pragmatist, and a postmodernist. He is truly a hybrid thinker. What my project focuses on concerns Latour's vision of democracy as it relates to the political representation of nonhumans. In this, Latour is a unique thinker in establishing a political philosophy around nonhumans— what others might call an object-oriented political philosophy. While Latour remains an established thinker about issues around the practice of science, he is not widely considered to be a "political" philosopher. For my purposes, I focus on bringing out the more explicit political elements of Latour's philosophy. As follows, the sciences are shown in their historical separation from politics. Taking that argument, what I do, following Latour's lead, is explicate his political philosophy concerning the entities the sciences have been concerned with.

Latour's 1999 (2004 English translation) *Politics of Nature: How to Bring the Sciences into Democracy* is the primary text I deal with throughout these pages. This is Latour's most comprehensive vision for political ecology, democracy for nonhumans, and adds to his general deconstruction of the separation between the sciences and politics, and as we will see, facts and values. Moreover, this text is one of the very few that I have encountered that concerns the cross-section of nonhuman entities as beings politically represented beyond just concern for "Nature." A secondary text dealing with the cross-section between politics and ecological

thought is Latour's most recent book, *Down to Earth: Politics in the New Climatic Regime*. This text contemporizes what it is I am trying to get done in addressing the *Politics of Nature*, as it focuses on climate change and the current political context of climate change denial, deregulation, and a grassroots populism burgeoning around the world. Aside from these two texts, I draw upon *We Have Never Been Modern* to explain the Modern framework which Latour is so often battling against.

Outside Latourian writings, I use various texts, writers, and articles to help explain and provide examples for what it is I interpret Latour to be arguing for. A very important text concerning chapter 1, including Latour's general understanding of Modernity, is Simon Schaffer and Steve Shapin's *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Regarded as one of the foundational texts in science studies, Shapin and Schaffer's book provides the historical analysis between political philosopher Thomas Hobbes, and experimental scientist, Robert Boyle, and how it came to be that the sciences and politics became opposed to one another. The authors concern themselves with how the experimental method was able to emerge and become an accepted version of foundational knowledge that we still rely on today. Experimentally produced matters of fact by use of technological aid are shown to have a history rather than the belief that scientific facts exist independent of their construction. The attention that Shapin and Schaffer give to the experimental apparatus (the air-pump) come to heavily influence Latour and his thoughts around knowledge-building and the necessities of nonhumans in the production of knowledge. Such a position situates Latour in an unorthodox fashion as both a constructivist and one who acknowledges that humans do not

have absolute and total control of the nonhumans they interact and experiment with: nonhumans have agency too.

Multiple Kerry H. Whiteside texts were a great assistance in my project. A specialist in French political-ecological thought, Whiteside's *Divided Natures*, along with his essay, "A representative politics of Nature? Bruno Latour on collectives and constitutions" provided me with both the context of French ecological thought, along with an interlocutor to argue with and against. *Divided Natures* assisted me in understanding Latour's ecological framework, his views on Modernity, and his relation to other ecological thinkers such as Michel Serres. "A representative politics of Nature?" provided me with vocabulary (especially "technoscientific productions") while also helping me think about what it was I agreed and disagreed with in Latour. I use Whiteside's critiques concerning Latour's idea of representation in chapter 3. Eduardo Kohn, an anthropologist, also appears in chapter 3, providing another critique of Latour's idea of nonhuman representation. These two thinkers provide the reader with some of the critical literature surrounding Latour and the *Politics of Nature*

Another thinker, Graham Harman and his book on Latour, *Bruno Latour: Reassembling the Political,* provided me with an alternate reading of Latour that helped me appropriate his vision for representing nonhumans. In Chapter 7 of his book ("Middle Latour: The parliament of things") Harman gives a brief account of the argument Latour makes in *the Politics of Nature*, emphasizing the dedication Latour has to creating institutions around *Things*—a term I will discuss later. An object-oriented philosopher himself, Harman and Latour are in similar company with their concerns for nonhumans (objects) but take different directions. In Chapter 7, "A Copernican Revolution: Lippman, Dewey, and Object-Oriented Politics" Harman places

Latour in the pragmatist camp of thinkers like John Dewey—something I find both true and exciting. Dewey's *The Public and Its Problems* is important for understanding Latour's conception of politics and publics. Latour develops on Dewey's sense of how publics are constructed based on the indirect consequences that affect many different people, where the affected takes form as a public in order to respond to such consequences. Moreover, I use Dewey's concept of the "official" to further conceptualize Latour's spokesperson as our nonhuman representative. Outside these secondary texts, I use many other thinkers and historical and contemporary examples. Numerous nonhuman entities and their trajectories are important actors. DDT, glyphosate, atomic bombs, plastic, fossil fuels, Styrofoam, artificial intelligence, trees, carbon, animals, and many more nonhumans have important roles in our project, emphasizing their historical precarity, along with many of the consequences that emerge once these entities enter into new associations. These entities were chosen and explained by way of articles, peer-reviewed papers, and historical accounts. To explain all these sources is beyond the time and space we have now. Thinkers such as Timothy Morton, Donna Haraway, and Anna Tsing were companions while I read Latour. These thinkers helped provide the newly emerging framework for examining nonhumans in their capabilities and talents—what some call the "nonhuman turn." These thinkers are not a vital part of my project but do reveal the new type of thinking surrounding human-nonhuman relations. Other thinkers, such as Naomi Klein provide me with many examples and first-hand accounts concerning climate change and the technologies and political solutions surrounding the crisis. Her book *This Changes Everything* was an important text in grounding many of the abstract theories Latour offers in real-world examples.

Some readers, and especially Latourian scholars, may be disappointed that I have omitted much of Latour's other philosophic work. Some may be upset that I have appropriated Latour as a sort of "green" thinker concerned with representing natural beings and ridding our collective culture of the technological materials that harm them. There is hardly any mention or definition of *Actor-Network-Theory*, one of Latour's major sociological contributions. If I took this thesis in a different Latourian direction, I may have emphasized Latour's notion of agency and how inanimate beings like concrete, for instance, have an agency like in the case of trapping heat and releasing it at night in urban settings (also called the heat-island effect). I do not explore his "on the bench" anthropological style of analyzing the sciences, nor do I explore his philosophy of language— at least not in any major depth. Because he is such a hybridized thinker, one has to decide what Latour they want to focus on. My concerns are with the political problems surrounding ecological issues, and so, I chose the Latour that is most relevant and applicable to these problems. One does, however, get a sense of networks in my explanation of ecology in chapter 2. Moreover, an emphasis on *acting* is never deliberately spoken of, but the reader should get the impression that Latour is interested in how things act and interact.

Other readers, less familiar with Latour and the science and technology tradition, may be wondering where other interpretations of the history of science are within the *Politics of Nature* and Latour in general. Those readers will inevitably be disappointed as Latour is concerned less with the successes of science or other readings of the history of science as he is with dismantling what could be called "scientistic ideology"—the belief that Science (capital S) is the ultimate authority on all matters and is a sort-of transcendental practice that humans are

able to perform in order to find universal laws of an *a priori* Nature. In Latour's anthropology of science, he is more interested in describing "science in action" then taking science as a transcendental activity. This is why Latour should be read, not as exhausting the entire history of science, but rather, critiquing one of its interpretations and offering an understanding of science as being one institution whose work is done in both collaboration and opposition with other institutions.

Thinkers that could have been beneficial to my understanding of Latour would have been Isabelle Stengers and Michel Serres. Latour uses Stenger's understanding of how politics is a cosmology building institution. Although fascinating, the project would have taken a different turn had I emphasized Stengers—possibly emphasizing Latour's work in what he calls *Modes of Existence*. Michel Serres is arguably the most influential philosopher on Latour, whose book the *Natural Contract* is a great companion piece to the *Politics of Nature.* But if I were to introduce Serres, this thesis would have turned into a comparative paper rather than one trying to tackle technological, climate and ecological problems. In the end, I had to reduce, reuse, and recycle to best confine and make useful this project.

After reading this thesis, I am hoping the reader will leave with several things, one of those being a new argument as it relates to how scientific productions are made public. I have encountered several instances in my personal life where I have used the findings from my work on Latour in everyday political conversation. I intend to leave the reader hopeful. Topics such as climate change, species extinction, pollution, irresponsible government, and so on can leave one feeling that any control over their common world is a problem solely decided by elites. Latour is dedicated to democratic institutions and processes—sometimes to an excess. Aside

from believing that they can take more agents into account in deciding what kind of world they would like to live in, Latour's deconstruction of the fact/value distinction leaves one feeling that they may actually be able to *construct* the world that ought to be. It may not be easy (in fact, Latour says it will be harder); the common world will require further debate and deliberation, but we have the arguments, the political means of activism and worldwide media, and enough people engaged. We may just need to slow down, feel under our feet, and purse the *commons'* sense.

Chapter 1:
A Point of Departure: Latour and Modernism

It is true that there are as many theories of Modernity as there are philosophers.[1] From the "McDonaldization of Society" to the practical beginnings of deconstruction in Heidegger's *Being and Time*, nearly every 20th-century philosopher has used Modernity as a framework to position a historical trajectory and provide some critique as a roadmap for where our Western culture should proceed. At the heart of this 300-year-old philosophy come our ideas about "reason," "mind," "truth," "religion," and of course, "science," and "politics."

One such philosopher is Bruno Latour. A trained anthropologist and sociologist of science, Latour and his critique of Modernity (including postmodernity) come with their own sets of definitions, theories, frameworks, and persons of reference—adding to the already saturated array of those criticizing Modern philosophy. With that, this chapter will be used as a point of departure to explain Latour's understanding of Modernity and his critique of it in order to situate better the eco-democratic prescription Latour offers in the following chapters.

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[1] Bruno Latour, *We Have Never Been Modern*, (Cambridge: Harvard University Press, 1993) 10.

Because the theme of these essays deals with science, politics, democracy, humans, and nonhumans, it is best to confine my explication of Modernity according to its relevance in the following concerns. I will need to introduce the cast of characters, their lines, and the trickling impacts it has had on Western thought and, therefore Western practice. So, who are the Moderns, and have they ever been?

A Separation between State and Lab

For Latour, much of Modernity is defined by its relation to humans and nonhumans and the disciplines that have historically been concerned with each, namely science for nonhumans and politics for humans. What I will need to do is explain what he calls the "Modern Constitution"—Constitution meaning a set of ideas and practices that have authority over a society—by its treatment of these important pairs, including how they've been made into an asymmetrical and opposing binary within Modern thought. As Latour writes, "As soon as one outlines the symmetrical space and thereby reestablishes the common understanding that organized the separation of natural and political powers, once ceases to be modern."[2] I, therefore, must give historical analysis to how the separation between what is referred to as "political" and what is "scientific," why asymmetry is a defining characteristic of the Modern Constitution, and why the Modern promise of a pure separation or asymmetry could not be fulfilled, according to Latour. The following two chapters offer what Latour sees as the remedy to Modernity in political ecology.[3]

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[2] Latour, *We Have Never Been Modern*, 2.
[3] Bruno Latour, "To modernize or to ecologize? That' the question" *Remaking Reality: Nature at the Millennium* (London and New York: Routledge 1998) 221-242.

Accompanying the many theories of Modernity are the philosophers who are perceived as responsible for the transition from Ancient to Modern. Descartes, Locke, and Bacon are the usual suspects. For Latour, the Modern story he responds to comes from the argument between political philosopher Thomas Hobbes, experimental scientist Robert Boyle, and the scientific instruments (an Air-pump) that take the attention of the whole Leviathan. More specifically, Latour uses the influential text by comparative anthropologists Steven Shapin and Simon Schaffer, *Leviathan and the Air-pump: Hobbes, Boyle, and the Experimental Life*, to do so.

Our dispute begins with a disagreement in the 17th century concerning the production of knowledge: how should knowledge be constituted?

For Robert Boyle, genuine and foundational knowledge comes from experimentally produced matters of fact. These facts, according to Boyle, are the ones characterized in *contrast* to certainty: with witnesses, produced by the aid of technologies, and predicated on probability.[4] According to Shapin and Schaffer, "By the adoption of a probabilistic view of knowledge one could attain an appropriate certainty and aim to secure legitimate assent to knowledge claims. The quest for necessary and universal assent to physical propositions was seen as inappropriate and illegitimate. It belonged to a dogmatic enterprise."[5] Rather than certainty in abstractions, Boyle makes aggregate belief the justification for facts as knowledge. Meaning, witnesses who gather around to see first-hand the experiment, thereby experiencing the production of matters of fact, became an essential part of Boyle's argument compared to the means of logic or mathematics that remained on the quest for certainty. "Seeing is

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[4] Steven Shapin and Simon Schaffer. *Leviathan and the Air-pump: Hobbes, Boyle, and the experimental life* (Princeton, N.J.: Princeton University Press, 1985).
[5] Ibid. 24.

believing" in this case. Boyle, by rejecting the dogmatic paradigm, introduces new criteria to the foundations of knowledge, namely, the instrumental machinery of technology, the witnesses of the experiments, and the literary distribution of the factual claims, furthering the "witnesses."[6]

Here, Shapin and Schaffer remind us that Boyle is not just making a claim to knowledge but creating the *context* from which that knowledge is justified. *Ad hoc* technology was built and redesigned for the purpose of fulfilling some hypothesis. From these technologies, it was to be the witnesses who could testify on behalf of the experimental procedure, the results, and so on. Since these witnesses could come from different disciplinary backgrounds, have several vernaculars or vocabularies, the communication between all the witnesses needed to remain controlled. Ways of talking about matters of fact were created along with the experimental procedure for matters of fact; a language-game was constructed. Shapin and Schaffer write, "The problem with eye witnessing as a criterion for assurance was one of *discipline*. How did one police the reports of witnesses so as to avoid radical individualism… witnessing was to be a collective act."

Conventions, beyond just language, were created by way of controlling the setting for the witnesses of matters of fact. One way was in determining who the witnesses were. These were men of rank, education, and prestige rather than peasants. Further, the space where these experiments took place was also made into a convention, what is commonly called a laboratory. Boyle made "public" the experiments he was working on in front of these prestigious men, adding to this context the ability to replicate which was to prove the factuality

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[6] Ibid. 25.

of the experiment—here, adding to the notion of matters of fact that a fact is produced again and again giving it its factuality.

What the invention of the laboratory, additionally, does is provide *scale* to Boyle's claims of foundational knowledge. When working in a lab and demonstrating proof of some fact, say that there is no such thing as an "ether wind," the fact is not limited to the single demonstration but to the facts of Nature—the scale expands from a room at the Royal Society to representing all places always and everywhere: the demonstration *demonstrates* a matter of fact. A localized, controlled and replicable experiment becomes proof of the facts of the all-encompassing Nature.[7]

Technology, experience, witnesses, a controlled setting, and a micro-instance to speak for a macro-structure becomes the context Boyle is able to build, argue for, and network as the foundation of knowledge that the sciences still have today. What Shapin and Schaffer also remind us of is that in order for Boyle to harvest acceptance for his experimental procedure, he needed to rely on more than just a transcendent Nature he claimed he was tapping into. He appealed "to 'the practice of our courts of justice here in England'… Boyle used the provision of Clarendon's 1661 Treason Act, in which, he said, two witnesses were necessary to convict. So the legal and priestly models of authority through witnessing were fundamental resources for the experimenters."[8] A juridical model of conviction through witness translated to the scientific in order for Boyle's creation to seem acceptable. Since the requirement for witnesses needed to convict an alleged criminal was never put into question, the witnesses needed to convict a

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[7] Latour, *We Have Never Been Modern*, 22.
[8] Shapin and Schaffer, *Leviathan and the Air Pump*, 327.

matter of fact were able to side-step criticism because of an already entrenched practice. Boyle, in this way, is appealing to the State in the knowledge-context he is building.

But his detractor, Thomas Hobbes, remains unsatisfied. For Hobbes, power is knowledge, which is to be handed down from the State. What Boyle and his followers are doing is seen as a threat to Hobbes's primary source of knowledge, the State, because of its appeal to a transcendent Nature that only a select few groups of colleagues need to agree upon. By following this transcendental model of experimental matters of fact reflecting a Nature, Boyle and his colleagues are disrupting the foundations of knowledge again—just after Hobbes believed appeals to ghosts, specters, and an immaterial God were unsatisfactory justifications whereas "civil society" was perfectly acceptable.[9]

Here the State and the Lab begin their separation. The space of the laboratory does not need the approval of the State for their conclusions, but rather in the demonstrations that prove the facts of Nature within the controlled context Boyle is creating. Hobbes, in his appeal to the State, Civil Society, and the social contract, accuse Boyle and his colleagues of undermining these forces that shape, produce and protect the civilians who make it up. In order to avoid the accusation of *politics* ultimately shaping the experimental procedure Boyle constructs, he must make the testimony of nonhumans more reliable than humans. The instrument, after all, is doing the pumping, laboring, "mediating" in order to form a fact. He does so by making cause for concern the prejudices of persons, men's opinions, and the mercuriality of senses, "that may easily give occasion to mistakes."[10] This idea of prejudice, opinion, and sense as weaknesses for human knowledge begins to define the Modern

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[9] Latour, *We Have Never Been Modern*, 19.
[10] Shapin and Schaffer, *Leviathan and the Air-pump*, 218.

Constitution, ensuring a separation between a knowledge "out there" in Nature, and a constructed knowledge within the social contract. The one, Nature, does not care for human values, political decisions, and personal opinions: a fact is a fact whether you like it or not.

An asymmetrical relationship between how knowledge is construed and who takes on what kinds of knowledge practices forms as well. Or, put another way, what historically opposed discipline (science or politics) can claim to be the ultimate source and sustaining factor in knowledge, and by virtue of that, *who* is the necessary support-system of knowledge— humans or nonhumans? In trying to ensure a transcendence did not persist, Hobbes ultimately makes the State, the Sovereign, the social contract its own transcendent being. Rather than Nature, Society becomes the ultimate appeal Hobbes constructs, which sociologists of the 19th century expand and emphasize, according to Latour.[11] All knowledge reigns down from the State, all unification happens because of the social contract, the Leviathan ensures durability, invention, and freedom for all. Both Hobbes and Boyle simultaneously begin to construct a transcendence in their respective domains, while paradoxically acknowledging the immanence of those who construct both Nature and Society. Nature is discovered in laboratories, through instruments, with prestigious men gathered to witness the fabrication of facts; Society is made of people, political decisions, with Kings who collectively make it by the "force of our reasoning."[12]

This is the paradox of the Moderns Latour—with the help of Shapin and Schaffer—is able to reveal. While each philosopher was attempting to ground their respective disciplines in the practices, models, and implicated parties involved, they simultaneously appealed to a

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[11] Latour, *We Have Never Been Modern*, 35.
[12] Ibid. 31.

transcendence. Latour writes, "these two guarantees are contradictory, not only mutually but internally, since each play simultaneously on transcendence and immanence. Boyle and his countless successors go on and on both constructing Nature artificially and stating that they are discovering it; Hobbes and the newly defined citizens go on and on constructing the Leviathan by dint of calculation and social force, but they recruit more and more objects in order to make it last."[13]

Latour calls this work *purification* as each philosopher and their followers are always trying to purify whether they are working in science or working in politics: the two disciplines become purified by being opposed—a science there and a politics there, never to mingle, meet, or cooperate. Each discipline is to represent their particular constituents, nonhumans for the sciences and humans with their passions and prejudices in politics. Rather, what has happened, argues Latour is the proliferation of *hybrids* as an outcome of this attempt at purification. As Kerry H. Whiteside explains,

> Hybrids are entities like the changing chemical composition of the atmosphere and 'mad cow' disease: disquieting phenomena that cannot be categorized as purely natural or purely the result of human intention. They flow from the enterprising activities of scientists, engineers and their commercializing partners, who unleash ever more powerful technologies into our common world. They have a free hand to do so, Latour contends, because they are omitted from the social contract. We dump wastes into our environment, convinced that scientists can accurately foresee their effects and technicians can control the consequences they impose on us. We restructure genomes to fabricate plants suitable for industrial agriculture, revolutionizing land-use and food consumption across the globe. Modernity's inattention to its side effects is precisely what allows us to entangle ourselves ever more efficiently with more and more things.[14]

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[13] Ibid. 31
[14] Kerry H. Whiteside, "A Representative Politics of Nature? Bruno Latour on Collectives and Constitutions," *Contemporary Political Theory* Vol. 12 Issue. 3 (2013), 4.

As I will show in the following chapters, Latour believes respect for hybrids is dealt with in political ecology. This is why Latour sees ecology and Modernism to be opposed: one deals with the various interactions between historically opposed beings, the other continues to treat things as purely one way or another.[15]

Latour's understanding of this Modernist framework emphasizes the separation between State and Lab, science and politics, and as I will further explore, facts and values. One may wonder why this separation matters even if the attempted demarcation between science and politics has only brought about more mingling and hybridization between the two. If one is patient, one will come to understand that problems of political activism, the objectivity of the sciences, and the various consequences produced by the technoscientific world rely on this potent historical separation. Once I have brought Latour's terminological and philosophic ideas further along, chapter 3 explores bringing those scientific constituents into politics by forming representative bodies that properly represent such constituents. If Latour is right, If the Modern world left representation to purified domains of humans in politics and nonhumans in the sciences, it is my job to demonstrate examples of that crisscrossing: connecting the politics implicated in the sciences, and the materials of the sciences in need of some politics.

But before I move on, I would like to address another form of Modernism that Latour describes as the end of a historical arc in. This "arc" is arguably not even on the same plane as the old Modernism. Rather, it is a reorientation towards a whole other world.

Out of this World

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[15] Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge: Harvard University Press 2004), 8.

If Modernism is, in part, predicated on crossing out God and replacing the divinity with a more secular Nature, or Society, or even Science, one always runs into the same problem of starting from some predetermined entity or structure that will stop argument and unify us all in the end. We can all be "children of Nature" just as we are "all God's children." One could even be more astute and say those are old concepts, and rather what we actually all share is the earth itself.

Besides the few rovers and the proposed Mars One mission, it appears that we all can collectively call earth home. But what happens when the earth is no longer a stable entity and rather becomes an active participant in disrupting what portion of the earth is shared, who gets the dividends, and who, in the end is facing an earth that is continually regenerative versus an earth that seems to be waging war? In short, is not even *the earth* a place we can collectively share and agree upon? This is the symptom of Modernism's failed project, according to Latour that I would like to briefly address.

Another common way to define Modernity is in discussing humanity's relationship with the earth. Again, playing off the theme of human-nonhuman relations, it was a principle of Modernist philosophers to look at the earth as infinitely fertile, passive, made for humans, and to be put under the domination of human (men's) control. Robert Hooke, a colleague of Boyle's, wrote about scientific instrumentation as enlarging "the empire of the senses, so it besieges and straitens the recesses of nature: and the use of these, well plied, though but by the hands of the common soldier, will in short time force nature to yield even the most inaccessible fortress."[16] Continuing on this tone of revealing Nature's secret fortress, Francis

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[16] Shapin and Schaffer, *Leviathan and the Air-pump*, 36.

Bacon wrote, "As woman's womb had symbolically yielded to the forceps, so nature's womb harbored secrets that through technology could be wrested from her grasp for use in the improvement of the human condition."[17] Through the great work many ecofeminists and postcolonial scholars have done, the congruence between the historical subjugation of women and the earth are no accident. The tradition of treating Nature as some fertile secret that we *must* continue to reveal still dominates much scientific and technological discourse, often with the promise of inevitable progress.[18]

As I will address, this *must* of technological and scientific "achievement" will become a major theme Latour argues against. For now, a novel ideological framework has emerged. This ideology, whether as a symptom of Modernity or as a completely nihilistic form of postmodernity, can be best characterized as the push to extract resources from the earth at a time when all scientific consensus and evidence points to the dangers of such a project.[19] This phenomenon of increased extraction coincides with the rise of inequality, mass immigration and the epistemological delirium of the most indisputable fact in Anthropogenic climate change being a highly publicized debate, according to Latour.[20]

The event that Latour sees as emblematic of these three ideas mingling to produce a new trajectory for those trying to escape the climate crisis came when the United States left the

[17] Carolyn Merchant, "The Scientific Revolution and the Death of Nature," *The History of Science Society,* 97, (2006): 513-533.

[18] Anna Lowenhaupt Tsing, *The mushroom at the end of the world: on the possibility of life in capitalist ruins* (Princeton, N.J: Princeton University Press 2015).

[19] Adam Vaughan, "Opec predicts massive rise in oil over next five years," *The Guardian*, Sep. 23, 2018 https://www.theguardian.com/business/2018/sep/23/opec-predicts-massive-rise-in-oil-production-over-next-five-years.

[20] Karen Savage, "Exxon continues to fund 'Science' group steeped in climate denial and delay," *Climate Liability News,* June 26, 2019. https://www.climateliabilitynews.org/2019/06/26/exxon-climate-denial-american-council-science-health/.

Paris Climate Accord in 2017. [21] This event marked the intersection of when climate change denialism and the rejection that the earth was responding to the energy consuming habits of the richest nations needed to be handled by the global community and was proudly ignored. Donald Trump had decided that the earth America lived on and the earth that Europe, Mozambique, or Bangladesh belonged to were not the same earth: one could build walls and keep fracking to protect their own bordered interests while the others were trying to keep their heads above water. One earth was stable, the other earth the biggest threat to human and ecological life in a million years. This sense of "differing earths" is what Donna Haraway sees as Latour's understanding that climate change is a "cosmological issue" more than simply an issue of capital or truth. It is about humanity's place in and on the earth and how these "differing earths" relate to the varying ways in which people see and experience multiple worlds. [22]

There has always been denial of "settled science." However, this development, once seen through the last 40 years of deregulation, globalization, and extreme weather is relatively new—at least in the United States. Ten years ago, Republicans like John McCain and Chris Christie were talking about the existential threat of not addressing climate change. [23] Forty years ago, Ronald Regan began taking measures to fix the hole in the ozone. George H. W Bush

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[21] Bruno Latour, *Down to Earth: Politics in the New Climactic Regime* (Cambridge: Polity Press 2018) 33.
[22] Ellen Meiresonne, *Story Telling for Earthly Survival,* Fabrizio Terranove, Gianluca Marcon, Marco Landini. Brooklyn, New York: Icarus Films, 2017
Moreover, In Eduardo Kohn's lecture "Anthropology as Cosmic Diplomacy: Towards an Ecological Ethics for the Anthropocene," Kohn talks about Latour's conception of the anthropologist as a "cosmic diplomat." Kohn writes, "Moving among worlds is not merely a scholarly endeavor. It is a political act. We do so in order to recognize the ways we take part in that larger flow of life that is today under grave threat. In this sense, another synonym for anthropologist might be "diplomat," more accurately, in Bruno Latour's terms (Latour 2013), a cosmic diplomat; for the aim of moving among worlds is to find ways to avoid a cosmic –by which I mean an ecological– cataclysm."
[23] Olivia Roseane, "The Environmental legacy of Senator John McCain, 1936-2018," *Eco Watch*, Aug. 27, 2018
https://www.ecowatch.com/john-mccain-climate-change-environment-2599542575.html.

added significant amendments to the Clean Air Act, Richard Nixon started the EPA, Ulysses S. Grant created the first national park—all these environmental and climate measures were taken on by Republicans and conservatives throughout the history of the United States.

But, argues Latour, there has been a new realization within the halls of elitists who recognize that their Modernization projects would have to be abandoned and that the globe we "share" is not big enough for all of us. Latour writes,

> If the hypothesis is correct, all this is part of a single phenomenon: the elites have been so thoroughly convinced that there would be no future life for everyone that they have decided to get rid of all the burdens of solidarity as fast as possible—hence deregulation; they have decided that a sort of gilded fortress would have to be built for those (a small percentage) who would be able to make it through—hence the explosion of inequalities; and they have decided that, to conceal the crass selfishness of such a flight out of the shared world, they would have to reject absolutely the threat at the origin of this headlong flight—hence the denial of climate change.[24]

"The New Climatic Regime" is the arc that Latour sees replacing the old Modernization front. Where Modernity could be characterized as technological innovation for the promise of progress ("Knowledge is Power"), it is in-part because of the endless *drive* for scientific and technological innovations that we are in a climate crisis. The three phenomena: the rise in inequality, the vast amounts of migration, and the denial of the most indisputable fact of climate change come to represent the abandonment of the powerful elites from their own globalized Modernization efforts, according to Latour.

Latour seems to suggest that there are two character types of elitists: The Moderns who still believe that the more sciences and technology probe Nature the better off we are even though we do not have enough earths to handle these "progressive" efforts; and the

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[24] Latour, *Down to Earth*, 19.

formerly Modern elites who know that these oil and gas extractions are on their last leg and so try to make a profit while they can. Latour's prescription of coming "Down to Earth" is aligned with much of the political-ecological philosophy he offers in *Politics of Nature*, our primary text throughout this thesis. What I attempt to do by bringing Latour's work front and center is settle us down to earth in a way that emphasizes dispute and debate, that affirms the reality of humans along with nonhumans, and uses our most secular practices of politics and the sciences in tandem.

Because my appropriation of Latour's *Politics of Nature* is practically and contemporarily-oriented, it was important that I highlight both these versions of Modernity that Latour responds to. The first to emphasize the historical opposition between science and politics, subjects and objects, Nature and society; and the second to bring us into the current moment. In the contemporary world, where everyone, denier or affirmer, is trying to situate themselves in a time where every promise of progress, every technological innovation, every lifestyle choice hangs with the question of climate change in its atmosphere. Moving forward, I will show Latour's attempt to bring down to the earth the old objects of Nature while understanding that some secrets are best kept as a mystery.

Chapter 2:
The 'Political' 'Ecology' of Latourian Political Ecology

This chapter deals with one of the many hypothesis Latour proposes in the *Politics of Nature*.

Latour writes the following,

> From a conceptual standpoint, political ecology has *not yet begun to exist*. The words 'ecology' and 'politics' have simply been juxtaposed without a thoroughgoing rethinking of either term; as a result, we can draw no conclusions from the trials that ecology movements have gone through up to now, either about their past failures or about their possible successes. The reason for the delay is very simple. People have been much too quick to believe that it sufficed to recycle the old concepts of nature and politics unchanged, in order to establish the rights and manners of a political ecology… Political ecologists have supposed that they could dispense with this conceptual work, without noticing that the notions of nature and politics had been developed over centuries in such a way as to make any juxtaposition, any synthesis, any combination of the two terms impossible.[1]

This lengthy quotation is what guides this chapter. I must, for the most part, take Latour at his word, for a historical analysis of political ecology or the ecological movements is beyond the bounds of this paper. Rather, given this assumption, I take Latour's prescription seriously that

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[1] Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge: Harvard University Press 2004), 2-3.

political ecology must redefine the terms that make up its work. This chapter will establish what these two terms, 'politics' and 'ecology', mean for Latour, including how their new meanings converge in order to establish a new "Politics of Nature" that will be further addressed in the forthcoming chapter.

The Promises of Ecology

What is ecology for Latour? And more importantly, what does it do? How does it behave? What is it concerned with? What are we to improve, add, or drop from the multifarious networks defined by ecology?

The word ecology literally means the study of the environment— *oikos* (eco) being the Greek word for 'environment' or 'house'. The term was first introduced into English in the 1860s, emerging as a scientific discipline around the same time by the likes of Ernst Haeckel, but ultimately gaining its invaluable status as a discipline and political movement around the 1950s. Like most sciences, its practice was long in use before it's official status as a discipline. An example of "pre" political ecology is the case of London smog in 1285, where the burning of soft coal so badly polluted the city nearly a quarter of the British population died. Because of this, commissions were set up to investigate and provide solutions to the problem, ultimately culminating in the banning of coal use for a period of time.[2]

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[2] Geoffrey Lean, "The great smog of London: the air was thick with apathy," *the Telegraph,* Dec. 6th, 2012 https://www.telegraph.co.uk/news/earth/countryside/9727128/The-Great-Smog-of-London-the-air-was-thick-with-apathy.html.
See *the Big Smoke* by Peter Brimblecombe.

In ecology (the scientific discipline), ecologists are studying a wide array of phenomena, including an organism's interaction with its environment; the processes of biotic and abiotic beings; the development or depletion of certain ecosystems; how life interacts and adapts with others given changing circumstances, and much more. Ecologists collect data, they use instruments, they designate plots of land for study, they transition back and forth from land to laboratory; they work in universities, for governments, and municipalities; their discipline is instituted in universities and schools worldwide. Already our image of ecology may be too big for one earth to handle. From the smallest worm in New Zealand affecting agricultural production to the impact of airplane pollution on estuaries, our world is becoming ecological—if it has not already.

To add, where there is an environment, there will be some ecologist studying it. When, for instance, ecological scientist Dr. Michael Pocock enters into the fields just outside London, he is looking to examine how bees are pollinating flowers. His survey and data collection may be directed towards ecological questions such as: "What happens if bumble bees go extinct? and how will that effect the plants?" "How many different species of plant and bee are within this plot? Where is the most pollinating activity happening?" Furthermore, ecologists like Pocock want to know what happens when questions about how *humans* are having impacts on the pollination rates of these plants. How are humans contributing to the extinction of certain forms of wildlife? And how will that impact economies, policies, and social groupings? Given the climate crisis and the responsibility of human activity on global warming, the Sixth Mass Species Extinction where over 50% of species have been lost in the last 40 years (mainly due to anthropogenic causes), among other ecological disasters, it is important to ask how we are to

handle the things ecologists study when humans have shaped and are shaping environments and the beings (organisms, humans, nonhumans) embedded into them.[3] This will be a theme I return to throughout these chapters.

Now that the general practice of ecology has been put forth, including the questions, materials, and practices ecologists associate with, I will begin by asking what it is this discipline does well, according to Latour. First, ecology is leaving its mark everywhere—it is "attaching itself to everything."[4] In my brief sketch of ecologists like Dr. Pocock, there were numerous entities involved in his ecological project. The city of London and its nearby fields, bees and flowers in sectioned zones for data collection, the search and marking of particular types of species—ecologists can go from large (the city of London) to narrow (where specific goldenrods grow) in a single ecological study. The word "environment" here denotes nothing like a popular image of Amazonian rainforests, uncharted seas, or coral reefs. There is nothing like an environment *outside* ecological study— there is no "exotic" plot of earth ecologists are not willing to touch. Their study begins and ends with the earth *we* inhabit. A bee, its offspring, and the hive it belongs to become an object of study. Birds migrating north are examined. The impact of beaver dam-building on the travels of salmon are scrutinized. DDT accidentally introduced into a wetland will be examined for its impact on the local flora, which will then be examined in how the pollution of a wetland affects other creatures that feed off the wetlands production. No entity goes untouched—ecology attaches itself to everything.

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[3] "A day in the life of industrial ecologists," *Owl Guru*
https://www.owlguru.com/day-in-life-of-industrial-ecologists/.
[4] Bruno Latour, *Politics of Nature,* 21.

The advantage of taking upon everything is that there is no *short-circuiting: every ecological entity gets due process*—two words Latour introduces in the *Politics of Nature* that I will make the reader familiar with. To illustrate this point, let us turn to an example. When trying to examine an ecological problem, say, why a certain plot of land has produced fewer crops than in years prior, one may start by asking questions pertaining to some factors as to why this is. Weather patterns, including access to sunlight and annual rainfall, seem likely candidates. Given there are no changes with these factors, questions about the soil may arise: is it still fertile? Are there infinitesimal parasites hidden beneath the surface? And so on. If no conclusion can be drawn from the various questions asked thus far, it does not mean the ecologists work is done. Rather, it means there is something the ecologist has neglected to consider or has not yet found. There is some *actor* at work which has an impact on the crop production, but because it is unclear what is doing the acting (or more precisely, how things are *interacting)* it would be premature to start ruling out other options—that is without first giving them their consideration—their scrutiny, or *due process* in being able to affect a state of affairs, in this case crop production.

In the case of DDT (*Dichlorodiphenyltrichloroethane*) for example, the chemical compound was viewed as largely beneficial for a time due to its ability to treat malaria and dengue fever. DDT was sprayed on plants, foods, and other biological products as a means for eradicating malaria, common to certain species of mosquito. Because of the large amounts of deaths tied to malaria the use of DDT was justified: the not-yet-known adverse effects of DDT were not common concern or knowledge in favor of the benefits this chemical compound

offered at the time.[5] Tying this back to our previous example of *actors*—entities who act, contribute, or affect a state of affairs—contributing to a lack of crop production, ecologists would not allow DDT to remain a stably beneficial actor. In examining the lack of crop production, ecologists could come across traces of DDT in the soil, on the plants, or in the bodies of dead animals, leaving them to scrutinize whether this chemical compound had adverse effects on the crops. In order to consider this entity being a possible actor in the contribution of poor crop production, the ecologists who would have to suspend certainty in the "essence" of DDT, and instead look at it in its relation to its effects on the ability for crops to grow and continue to grow.

Furthermore, in not short-circuiting the actors who can contribute to change in environments, ecology does not start from a place of *predetermined hierarchy,* according to Latour. Rather, given that any ecological entity can *act*, chemical compounds, earthworms, rainfall, cloud cover, sunlight, minerals, and the atmosphere, are all given consideration in their acting ability. Latour writes, "if 'nature' is what makes it possible to recapitulate the hierarchy of beings in a single ordered series, political ecology is always manifested, in practice, by the destruction of the idea of nature. A snail can block a dam; the Gulf Stream can turn up missing; a slag heap can become a biological preserve; an earthworm can transform the land in the Amazon region into concrete. Nothing can line up beings any longer by order of importance."[6]

This does not mean no hierarchy applies to ecological study, nor that a hierarchy cannot be established. But rather, that the various entities involved in an ecological concern do not

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[5] "Elimination of Malaria in the United States (1947-1951)," *Center for Disease Control and Prevention,* July 23, 2018 https://www.cdc.gov/malaria/about/history/elimination_us.html.

[6] Latour, *Politics of Nature*, 38.

start from "largest to smallest" or from a predetermined hierarchy in determining *what* beings are more responsible for ecological success or devastation.[7] Hierarchies can only be established after the fact: after various disputes, studies, observations, and experiments, have been performed. A worm can potentially have as much effect on an ecological project as any other entity, and so, cannot be hierarchized in advance for that would establish primal causes that would apply to every ecological situation. An ecological determination of a certain entity contributing more than others to a situation is determined by who, what and where is involved. To establish a predetermined hierarchy would ignore that certain studies deal with some entities and not others.

Here, I have examined what could be called a "scientific attachment" that ecology offers, according, to Latour. Ecological entities in a scientific examination (e.g. continual experimentation, observation) are not settled in complete and stable essences, but must be given consideration for their various and often surprising ways they come to act and alter a state of affairs.[8] There is an attachment to the entity in continuing an investigation of how the thing behaves and interacts in varying contexts, thus "attaching" to the thing as a biographer attaches herself to the person she is examining. Ecology attaches itself in such a way as to never not keep track of the entities within what could be considered of "ecological concern." It is in

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[7] Ibid. 29.

[8] I recognize that certain ecological entities can be what Latour calls "instituted" (*Politics of Nature*, 104). To institute an entity is to make it a fact: to halt a continual investigation of the entity and instead apply some stable essence to the thing in question. It remains unclear, however, if Latour sees this as mostly a practical necessity rather than some absolute or fixed essence that could not be altered. He writes, "By maximizing the perplexity of the agents that are dealing with them, to the same extend the second [instituted] aims to ensure a maximum of durability, solidity, harmony, coherence, and certainty to the assembled propositions, precisely by preventing people from splitting hairs all the time and plunging the debates back into confusion" (*Politics of Nature,* 105). "Institution" will be explained in the following chapter.

this constant attachment to things and their continual associations that ecologists are able to discover when newly introduced or once-neglected entities have been observed in their acting-ability to change a state of affairs. In short, according to Latour, ecology gives entities the ability to act, and because of this ability, the entities must constantly be given their due process of being able to affect a state of affairs which allows nearly any entity to become part of the ecological project.

This leads to a second meaning of the term 'attachment' that can apply when discussing "ecology attaching itself to everything": everywhere becomes an environment. The "disastrous opposition between man and his environment" becomes untenable, according to Latour.[9] I will not belabor this point, but in ridding Western culture of this opposition, Latour *extends* and *localizes environments*. Rather than a place far-off, saturated with forests and shrubs, the "environment" is the land where you and I sit, including those far-off forests. Just as ecology attaches itself to everything by observing and examining all entities in their (inter)actions without short-circuiting their ability to affect a state of affairs, ecology attaches itself to designated places where humans and nonhumans are interacting. Taking attachment to beings interacting and their possibility for affecting a state of affairs, I must designate *where* it is that the inter-acting is happening. For Latour's ecological purposes, the word "environment" suffices to mean any *place* where ecologists can attach themselves in seeing how, for example, organisms and the spaces they occupy give way to change, interaction, and maybe, relative stability. Given the Anthropos's effect on the climate through fossil fuels and increased

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[9] Latour, *Politics of Nature,* 57.

greenhouse gases, it is safe to say anywhere there is a human organism there is the opportunity for ecologists to attach themselves to both local and international environments.

Attachment is just one of the many virtues of ecology as Latour sees it. However, I must clarify one thing which is arguably Latour's most emphatic point throughout the beginning of the *Politics of Nature*. *Ecology does not deal with Nature.* "Nature," rather, is a an already unified and transcendent concept that does not allow ecology to overcome the need for a "politics of nature." Let us turn to Nature and examine why it is a disservice which must be discarded, according to Latour, for political ecology to ensure its success.

"Political ecology has nothing to do with nature."[10]

Latour's first point of critique on this term Nature concerns how Nature hampers discourse: appealing to Nature short-circuits discussion by treating Nature as something already established from the onset.

As any social scientist knows, the term "Nature" has always had an incontestability to it. Blacks were "naturally inferior;" women's social standing relied on them giving birth as that was there "natural role"—relying on Nature has always come back to haunt us in some capacity. "Human Nature" was put into great question by social movements like women's suffrage or the 1960's Civil Rights whose success has been in showing how retroactively archaic, backwards, racist, sexist, and wrong Nature as justification is. Furthermore, there was "Science" behind these "Natural" conclusions. Eugenics is the best example of when "Science," by appealing to a

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[10] Ibid. 5.

universal Nature, is riddled with ideological and cultural baggage, unable to work outside its own paradigm. But because Science can hide behind "Nature" the public body is supposed to remain silent on the issue. "Science" has found Nature's answers.

This incontestability towards the naturalization of sex and race has weakened since these movements. Nature was contested. The science could not hide behind Nature, but was revealed under the cultural sedimentation of racism, sexism, and the like. "But what about the 'natural sciences'?" one may ask. "Surely you have just made the same argument as any other cultural studies postmodernist. The 'social' and the 'natural' sciences are different." Granted, the materials that the two disciplines take up are different, but the conclusions towards a certain and incontestable Nature are found in both. Latour is looking to disrupt this "settled-once-and-for-all" Nature in either the natural or social sciences.

The term Latour uses for the paradigmatic appeal to an incontestable, certain, and settled Nature is "(political) epistemology."[11] This term is a pejorative criticizing the epistemological tradition Western culture has adopted as shown by Plato's Allegory of the Cave which Latour describes as a "potent myth" for such a tradition. Latour sketches the scene as follows: There are those chained to their illusions in the Cave, and the character who has broken the shackles of illusion and stepped out into a world that exists independent of the cave dwellers. There are thus two worlds: one where humans were only seeing illusions; the other, a world independent, indifferent and "real."

This framework, according to Latour, allows for a "two-house Constitution" that organizes public life into the real world made up of nonhuman Nature, and the other, where

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[11] Ibid. 13.

humans are unable to escape their illusions.[12] For the purposes of this essay Latour calls these two houses, Nature and society. In Nature there is a world made of facts which are indifferent to humans—they exist "outside" society; in society there is cultural and social productions that foster illusions onto an otherwise socially-constructed world.

In Plato's Allegory, the unshackled character is the protagonist. Latour's unshackled character has a special role to play in his epistemological allegory, just as it did for Plato. This character, once removed from the shackles tying her to the illusions projected onto the cave walls from the near-by fire, is able to walk out into a blinding world full of things never seen before. Imagine there were plants, animals, trees, running water, and of course, sunlight. This character finds herself awe-struck. She has discovered another world! With enthusiasm she runs back into the Cave to tell her peers what she has seen. Unimpressed and uninterested, the dwellers return to the projections on the wall. The character insists: "You all are missing another world! The real world! A world they did not know of. Until now! Won't you come join me in this real world?" Fed up, the dwellers excommunicate her for her insistence on their "illusions" and her desire to convert them to the world of real, outside, independent, Nature.

But this unshackled character knows what she saw. She was able to transverse two worlds: the one of society and the one of Nature. Back-and-forth, to-and-from, this character tried to (though unsuccessfully) communicate to her peers one world with an incommensurable other: a world of symbols and shadows on the wall to a world of natural material objects.

There are a couple of conclusions to draw from this story. The one faithful to (political) epistemology is the recognition that there is *one world which corresponds to reality while the*

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[12] Ibid. 13.

other does not: the one of Nature with its independent and indifferent material and the one of society with its illusions and collective agreements. Society, whether in "illusion" or not represents the incapability of humans to access a world independent of it and so must continue such illusions for that is all it can do: human society cannot know or cooperate with objects unlike it because there is an incontestable gap between humans and things. On the contrary, Nature, in all its indifference, can be known but only outside the Cave. One must remain outside the Cave in order to know Nature, for society will only dilute Nature by its cultural and symbolic representations.

Latour's unshackled character becomes our Modern scientist. She represents the scientific character who works in laboratories, analyzing and collecting the material of Nature in order to conclude the underpinnings of this Nature— but nonetheless lives and was culturally conditioned by a society of symbols, representations, and unquestioned assumptions. What to make of such a character? On the one hand she is the only being capable of accessing Nature, but at the same time is not a "child of Nature," rather, a cultural being with experiences similar to other presumed Westerners. This character stands on the precipice of Nature-Culture: The Cave scenario under the paradigm of (political) epistemology forces us to make a choice between a world on the outside of the Cave, or a world on the inside by a comfy fire of illusion. You are either a realist with a world full of Nature outside, independent, indifferent, to human passions, or a "social-constructivist" where illusions, cultural productions, symbols, and Power are the only "real" entities. You either are for the world of humans or the world of nonhuman Nature.

This scenario is a challenge. It has been with us since Plato imagined the Cave, since Hobbes and Boyle argued over the air-pump, and most recently since Postmodernists made the subject/object distinction into a "hyper-incommensurability"—an unbridgeable gap between humans and a world outside human understanding. On the one hand, there is a situation such as I mentioned above. At one time, science was clearly bogged by racist and sexist ideological bigotry, thereby diluting science to be thought of as strictly what a culture believes. On the other hand, the sciences and materials they work with still react, have capabilities, can be shown to do certain things and not others. The boiling point of water is not just arbitrary or a cultural illusion. When water is heated to a high enough temperature as indicated by thermometers, there is clearly boiling. It only takes a social constructivist to throw himself off a bridge to see if gravity is a "social construction" or not.

So, how to move beyond this impasse? How to make Nature contestable without also diluting the sciences to be nothing more than social constructions? We create a new path, one more *public*— a move beyond in or outside of the Cave, towards the *oikos.*

Latour offers a couple of procedures to take in order to get out of this two-house Constitution. As I have indicated, the statement "blacks are naturally inferior," sounds like a political statement. Gravity is "natural" does not. However, both these statements hide behind Nature. Nature does all the work while the rest of such a proposition can only wait for it to be confirmed or not. By referring to gravity under the guise of Nature, one holds the standard that institutions do not have to further the idea of gravity, nor produce experiments, mathematical

proofs, or use instruments to produce the entities that become known as *natural laws*.[13] Which

is to say, both statements are equally political, and both hide behind Nature. The option out of

this two-house Constitution is to no longer hide behind Nature, but make the politics explicit, to

"socialize nature" thereby making Science and Society (notice the capitalization) into societies

of the sciences where an appeal to Nature no longer suffices. Rather, one's science is

recognized as a bureaucracy with many different procedures, confirmations, and contestations

to go through: one does not take the "society" out of "science." These points will be further

addressed in the next section.

To be clear, Latour's problem with Nature has been that it is always a word scientists,

politicians, or excommunicated Cave dwellers can use to appeal to something that ends debate,

dispute, and discussion. Nature becomes an already unified, universalized, holistic deity rather

than a secularized entity which proliferates in processes, concerns, and changes, gathered

around by humans and nonhumans in negotiation. How to reconcile such an incommensurable

debate? Let the realities proliferate! Do not let Nature decide what is or isn't an acceptable

recourse for debate, but allow publics, scientists, cultural groups, and nonhumans (as I will get

to) begin discussion. Allow *concerns* and *issues* to be why a *public* have all been brought into an

Assembly, Parliament, or space to debate; not an incontestable, certain, and unquestionable

Nature with indisputable facts to decide what is or isn't acceptable to bring to reality. I am

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[13] Latour is not against what I have called natural laws. He does believe that things like gravity are natural laws but cannot be regarded as phenomena simply outside the tests, institutions, instruments, and scientists doing the work behind the stabilization of natural laws. "Nature" and "natural laws" mean two different things here. For our purposes, we can refer to "natural laws" as instituted ideas: ones that have bounded and defined essences, that are beyond debate for the time being (*Politics of Nature*, 104).

teasing Latour's move beyond matters of fact to *matters of concern* in order to compose a world "we" would like to share.

Political Ecology then, by discarding a pre-unified and transcendent Nature, would no longer be dealing with the materials of a Nature that does not have politics as its collectivizing force. *The connection between ecology, nature, and politics, is that when one discards the idea of Nature one can then begin to politicize the materials, procedures, and consequences typically associated with ecology. "Nature" may become properly socialized.* This brings us to our next section.

Towards a Politics of Ecology

Based on my previous analysis, I have brought forth a couple of things while adding more questions to address from the *Politics of Nature*. Thus far, I discussed the virtue of ecology *ecologizing* all entities worthy of ecological concern. That is, any entity within an "environment" can be given ecological consideration because of any entities ability to act and contribute to change, stabilization, or cooperation with others. By doing so, ecology, so long as it does not short-circuit entities and environments by giving them due process, can attach itself to anything and everything. Furthermore, in order to expand, political ecology, Latour argues, must get rid of the idea of a pre-unified Nature. "Nature" was a parasite on the discipline, according to Latour. Because "Nature" was a pre-unified, already established, transcendent whole, that prematurely ended debate by appealing to Nature, political ecology could not find its proper ground. It was looking up to the Heavens rather than the *humus* underneath its feet. By trying to "save Nature" political ecologists could not make its entities a political issue—a

point I will further develop throughout this thesis. Moreover, because Nature has always been opposed to "society" or "politics," any discussion that points to Scientists who study Nature but are also a part of society, left us at an impasse. In the "two-house Constitution" of (political) epistemology, any mixture of the two automatically weakened both.

As I ended the previous chapter, specific ideas and terms were brought to attention that will be fleshed out throughout the remainder of this chapter. The first has to do with these terms *matters of fact* and *matters of concern*. Matters of fact have already been discussed in our previous chapter but can be expanded further. Matters of fact denote that stabilized, fixed, and incontestable appeal to the *facts* of Nature, often with the aid of technology as our way of accessing Nature. The previous example I gave of DDT in stabilizing its essence as an entity that treats malaria could be seen as a matter of fact, in so far as that appeal to DDT *is* an incontestable fact. But the "fact" of DDT's ability to treat malaria came with many other concerns. The many other *consequences* of DDT-use were not considered in the wide-spread implementation of the chemical compound. These other consequences are the toxic and vile ones highlighted by air pollution, agricultural runoff, the killing of birds, the traces of DDT found in foods, all with the understanding that DDT is a poison responsible for these unforeseen consequences. The entity becomes redefined based on the consequences that were not (and, for the most part, could not) be considered in the initial defining of these scientific entities. Matters of concern, comparatively, looks to consider how the unforeseen consequences come to define and redefine an entity.

A current-day example in seeing matters of fact as matters of concern is the use of Roundup. The company Monsanto patented the herbicide Glyphosate as a weed-killer for use

at homes, farms, and anywhere weeds would show up. Since the 1970's, Roundup has been used more than any other chemical compound in spraying agricultural products.[14]

For most of its use, Roundup has been widely uncontested as a beneficial herbicide—that is, until debate emerged about whether the chemical compound was a carcinogen or not. This disruption of a clean matter of fact came most notably in 2015 after the International Agency for Research on Cancer (IARC) labeled glyphosate as a "probable carcinogen."[15] The IARC's findings were different than that of other organizations like the World Health Organization (W.H.O) and the U. N's Food and Agricultural Organization that concluded glyphosate was *not* a carcinogen. Furthermore, to add to the dispute, a U.S Jury awarded a man $80 million for his cancer just this year (2019), which the courts found Roundup and Monsanto to be responsible for. This is just one of the many lawsuits Monsanto and Roundup are currently involved in.[16]

What does this tell us? Firstly, there is dispute on the facts. Is Roundup a carcinogen? According to the San Francisco courts, the IARC, Edwin Haderman and his attorney's, it is. According to the European Union, the W.H.O, and Monsanto, it is not. The first lesson in transitioning from indisputable, uncontestable and settled matters of facts to matters of concern is to recognize there is debate, dispute, and disagreement on scientific facts. A key tenet of understanding the transition from matters of fact to matters of concern is that certain

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[14] European Union, "History of Glyphosate," October 2013, https://www.glyphosate.eu/glyphosate-basics/history-glyphosate.

[15] European Union, "Have you heard glyphosate causes cancer? It is wrong!" July 2017, https://www.glyphosate.eu/have-you-heard-glyphosate-causes-cancer-it-wrong.

[16] Sudhin Thanawala, "Man awarded $80 million in lawsuit against Monsanto claiming Roundup causes Cancer," *The Chicago Tribune,* March 27th, 2019 https://www.chicagotribune.com/business/national/ct-biz-monsanto-roundup-lawsuit-ruling-20190327-story.html.

types of facts are consistently in the middle of a dispute, whether inside laboratories in their

production by scientists or once they have entered into the public where their consequences

and various usages are still uncertain. Latour writes, "Let us remember that nonhumans are not

in themselves objects, and still less are they matters of fact. They first appear as matters of

concern, as new entities that provoke perplexity and thus speech in those who gather around

them, discuss them, and argue over them."[17]

The emphasis on disputability leads to the second point of matters of concern: one

recognizes the heterogeneity within a dispute on scientific facts. There are more mediators

than just the facts themselves. By asking the question, "does Roundup cause cancer?" the

involvement of multiple parties around the concern for this nonhuman entity mingle. Lawyers,

cancerous citizens, chemists, the United Nations, San Francisco courts, glyphosate, weeds,

capitalist corporations, all converge around whether this chemical compound is a patented

carcinogen. Because the facts of glyphosate are in question, with varying entities and their

various involvements around this issue, it is somewhat futile to keep retreating to the "facts of

the state of affairs." There is more at stake than just glyphosate "in-itself" being toxic or not.

The significance of Latour's point brings attention to the lack of smooth boundary lines

between what is a scientific problem and what could be called a political problem. Instead, the

situation is more of a *hybrid*.[18] Glyphosate is a chemical compound, developed in laboratories,

but it is also a "commodity" which warrants consumer protections; it is a major chemical for

agricultural farmers and thereby needs to be regulated accordingly; it is a potential carcinogen

and so, must involve chemists and oncologists to testify on behalf of whether or not the

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[17] Latour, *Politics of Nature,* 66.
[18] Bruno Latour, *We Have Never Been Modern*, 2.

compound does or does not have the potential to be cancerous. As a reminder from our first chapter, Kerry Whiteside explains, "Hybrids are entities like the changing chemical composition of the atmosphere and 'mad cow' disease: disquieting phenomena that cannot be categorized as purely natural or purely the result of human intention. They flow from the enterprising activities of scientists, engineers and their commercializing partners, who unleash ever more powerful technologies into our common world."[19]

Where the "facts" about glyphosate or Roundup veil the continual *process* that this entity goes through, matters of concern emphasizes the whole process: from production in laboratories with their various disputes, extending to when nonhuman entities have entered into the public where further controversy ensues. What I would like to emphasize for our purposes is the complete overlap between historically distinct disciplines—science and politics. From the facts of climate change, to the concerns around vaccinations, among other examples in the increasingly technoscientific world, where there is any scientific production or problem there is bound to be court cases, policy measures, concerned publics, all being formed around the results of what science and technology bring to the social world. Transitioning to matters of concern, argues Latour, always involves emphasizing these disputes, their productions, the concerns and consequences for publics, rather than trying to separate the scientific from the political. There is no ignoring this inevitable intermingling: the sciences become socialized.[20]

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[19] Kerry H. Whiteside, "A Representative Politics of Nature? Bruno Latour on Collectives and Constitutions," *Contemporary Political Theory* Vol. 12 Issue. 3 (2013) pg. 4.
[20] I see matters of concern as a term that would need explaining in a couple different ways that I am neglecting due to the richness of the concept. One, is what Latour may call the politics *within* scientific fact-making. Meaning, within laboratories there is sides being chosen, deliberation happening between experts, and other "political" activities happening within the scientific community. This could be called the "political-production" of scientific-fact making which Latour emphasizes in texts like *Laboratory Life*.

These terms, matters of fact and matters of concern, are vital for our purposes in trying

to "socialize the sciences"—or *Bring the Sciences into Democracy*. They point to one of the

oldest binaries in the two-house Constitution of (political) epistemology in the separation

between facts and values. This opposition under the old Constitution has not allowed for

science and politics to properly mingle, even though many may recognize where there is a

scientific production there are those policy measures, court cases, and publics gathered around

these productions. To socialize the sciences, I must begin by examining this old binary, find its

contradictions, and point to a better relationship between the two as indicated by Latour. By

doing so, I can create a path towards bringing the old entities of Nature into politics. This

second point will emphasize the *issues* always associated with *things*: what Latour calls a

dingpolitik.[21]

One example that highlights the incongruity between fact-based institutions and value-

based ones is the debate about whether scientists should be passionate, concerned, or active in

the politics of the things they study. Dr. James Hansen and Michael E. Mann, both climatologists

turned climate activists, are key figures in the dispute around whether scientists should be

"passionate" about what they are studying. In a *New York Times* op-ed titled "If you See

Something, Say Something," Mann discusses the role of scientists turned to activism around the

issues of climate. For many, Mann tells us, there is the consensus scientists should not enter

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I am less interested in how politics operates within the sciences itself, but rather, how the science and politics operates once technoscientific productions have been incorporated into public life. The first is internal to the sciences, the other is how public-politics functions after or in preparation to the facts— both actual and potential. More on this later.

[21] Bruno Latour & Peter Weibel "From Realpolitik to Dingpolitik: An Introduction to Making Things Public" *Making Things Public-Atmospheres of Democracy,* MIT Press, 2005.

into politics for fear that this will dilute the objectivity of the sciences. Climate science will be regarded as a "political project" rather than an objective, fact-based, and truthful endeavor. Mann opposes such a split, instead writing,

> In my view, it is no longer acceptable for scientists to remain on the side lines. I should know. I had no choice but to enter the fray. I was hounded by elected officials, threatened with violence and more— after a single study I co-wrote a decade and a half ago found that the Northern Hemisphere's average warmth had no precedent in at least the past 1,000 years… This activist approach has concerned some scientists, even those who have been outspoken on climate change… Should we resist commenting on the implications of our science?... If scientists choose not to engage in the public debate, we leave a vacuum that will be filled by those whose agenda is one of short- term self-interest. There is a great cost to society if scientists fail to participate in the larger conversation—if we do not do all we can to ensure that the policy debate is informed by an honest assessment of the risks. In fact, it would be an abrogation of our responsibility to society if we remained quiet in the face of such a grave threat… This is hardly a radical position. Our Department of Homeland Security has urged citizens to report anything dangerous they witness: "If you see something, say something." We scientists are citizens, too, and, in climate change, we see a clear and present danger.[22]

To further emphasize the "dangers" Mann sees, one only needs to return less than a decade ago when the atomic bomb was developed. Given the dangers of these weapons of mass destruction, one may ask, "where were the scientists to contend such an operation? Why did no one say anything? How could they allow such a production of death?" Taking Mann at his word, that scientists believe they are not supposed to involve themselves in politics, the same rationale applies to WMD's. Scientists are not supposed to have their value-laden opinions on their scientific productions, but rather, find the facts of Nature such as: what can

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[22] Michael E. Mann, "If you See Something, Say Something," *The New York Times,* January 17th, 2014, https://www.nytimes.com/2014/01/19/opinion/sunday/if-you-see-something-say-something.html.

nuclear energy do? How do certain chemicals react with one another? Scientists, in this vein, are experimenters, not existentialists.[23]

But, echoing Mann, "If scientists choose not to engage in the public debate, we leave a vacuum that will be filled by those whose agenda is one of short-term self-interest. There is a great cost to society if scientists fail to participate in the larger conversation… In fact, it would be an abrogation of our responsibility to society if we remained quiet in the face of such a grave threat." That "vacuum" in the case of the climate crisis remains oil and gas companies, politicians who are funded by such industries, misanthropes who do not care for future generations, and so on. Like Latour, "I wish to help the Michael Mann's of the world."[24]

As was discussed in the previous section about the (political) epistemology of the two-house constitution—the one that allowed either Science or society to be the sole proprietor of knowledge, I am picking up one of the binaries so characteristic of this Constitution, according to Latour. I will discuss what Latour calls the "contradictory requirements" of the "old" notion of facts and values.

Firstly, if the goal is to bring the sciences into politics, one must recognize why Latour is bringing this to discussion. Why is the old tradition problematic, and what warrants a new start? Latour puts it rather succinctly when he writes: "Whose fault is it if Science is threatened by the rise of the irrational? It is the fault of those who have invented this implausible

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[23] For a change in how scientists, veterans, and others who were implicated in WMD's see *the Atlantic's* "Atomic Veterans were silenced for 50 years. Now they're talking," *The Atlantic,* May 27, 2019, https://www.theatlantic.com/video/index/590299/atomic-soldiers/.

[24] Bruno Latour, "How to Better Register the Agency of Things," *Tanner Lecture Series,* Yale University, March 26th, 2014.

Constitution that makes the system so fragile that a grain of sand would suffice to block it."[25] In today's context—and Latour is well aware of this—a certain group of deniers around one of the most indisputable and heavily researched topics in climate change, questioned Science, in which the only response from scientists, politicians, media pundits, experts, and the like, was to continue to appeal to the facts. When this did not work, it became more obvious that something "indisputable" became *so* disputable that it interrupted the streamline position from facts to policy, even under the threat of the loss of all human and biological life. If "facts" were so uncontestable, there would have long been implemented the necessary changes in order to combat the most well researched, consensual, and threatening fact there is in climate change.

So, deniers, in a politically-savvy move, put the facts of the sciences in question, rather than the policy proposals that would inevitably come once people were aware of the dangers of climate change.[26] After a forty-year career of climate change denial (and continuing) putting the sciences into question has delayed much of the necessary response in combatting climate change. If it only took a group of people to start denying facts, it was not the facts themselves that were the problem, but rather the *weight* put on these entities. Western culture tried to let facts speak for themselves without understanding that facts are only partial renderings of much larger, more hybridized states of affairs.[27] For those who feel outraged when someone doesn't believe the facts, they are guilty of the problem Latour has addressed: we want the facts to do all the work while expecting others to simply acquiesce to the data. Latour reminds us, "Facts

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[25] Latour, *Politics of Nature,* 92.

[26] "Environmental Word Games," *New York Times,* March 15th, 2003
https://www.nytimes.com/2003/03/15/opinion/environmental-word-games.html.

[27] Bruno Latour, "Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern," *Critical Inquiry* Vol. 30, The University of Chicago, 2004.

remain robust only when they are supported by a common culture, by institutions that can be trusted, by a more or less decent public life, by more or less reliable media."[28]

One could conclude from this scenario that one has to "value" facts (and especially over economic interests) for facts to be what influences the political and social state of affairs. Though this is true, Latour's point goes deeper than that. Instead, what "is" a fact and what "ought" to be will become part of the same process—an attempt between the common good and the common world will be composed simultaneously.

Here, I am approaching Latour's definition of politics: the progressive composition of a good common world.[29] Taking two of our most important terms, *due process* and *short-circuiting*, a common world will have to be composed slowly in order to avoid short-circuiting the various entities and issues that were neglected by the previous Constitution. In doing so, I will have to emphasize two of Latour's major points: matters of concern with their multiple disputes and inevitable disagreements among varying parties; while bringing nonhumans into politics—the topic of our third chapter.

As I have indicated throughout this essay, facts had the disadvantage of being entities whose essences were already fixed once they became facts. This hid the various disputes that go into fact making (including the necessary theoretical work that shapes the data, a point I will have to neglect) and how the factual essence of an entity is further disputed once technoscientific productions enter into the social or public arena.[30] This is the point I made regarding a transition from matters of fact to matters of concern.

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[28] Bruno Latour, *Down to Earth: Politics in the New Climactic Regime* (Cambridge: Polity Press 2018) 23.
[29] Latour, *Politics of Nature*, 101.
[30] Ibid. 97.

For those who may be thinking Latour is making facts into values this is mistaken. Values are also a term that needs reconsidering in Latour's new approach towards the politics of political ecology. If the streamlined position between factual information and value-laden policy proposals has been disrupted, evinced by the deniers of climate change and the scale of the problem in general, it is partially from this notion that values always come after the fact. "Values always come too late" within the fact/value distinction we have inherited.[31]

For example, any technoscientific production, be it cloning animals, the burning of fossil fuels, modified organisms in our foods, artificial intelligence replacing human workers, and so on, *are* already facts made public but without consideration as to whether these facts *should have ever been in the first place*. "Once the cloning of sheep and mice has become a fact of nature, one can, for example, raise the 'grave ethical question' whether or not mammals, including humans should be cloned… the scales are not weighted evenly between someone who can define the ineluctable and indisputable reality of what simply 'is' (the common world) and someone who has to maintain the indisputable and ineluctable necessity of what must be (the common good)."[32]

What Latour has given us is a new way to think about the fact/value distinction as it relates to what facts we want in our good common world. The facts of splitting the atom to produce atomic bombs may not be the kind of good common world we would like to share and inherit. If we do not want artificial intelligence becoming "intelligent" enough to replace all manufacturing jobs, that is another technoscientific fact we might want to dispute. If we recognize that fossil fuels are the main contributor to greenhouse gas emissions, while also

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[31] Ibid. 97.
[32] Ibid, 97.

recognizing its ubiquity in fueling our lives and lifestyles, we must consider both these things as we dispute the continual use of these materials. Latour is trying to reflectively organize our industrialized societies in a way where just because we *can* access a world through technology and scientific experiment does not necessarily mean we *should*.

Readers may contest that these examples (the atomic bomb, fossil fuel use, A.I) are already within use—already matters of fact. As I will develop in chapter 3, for Latour, all technoscientific productions made public must enter into dispute before and after their factuality. This is partially why nonhuman entities are rarely a settled, incontestable, and stabilized matter of fact: the dispute does not end easily and nor should it. Matters of concern must be emphasized before these matters become instituted.

I have used this chapter to explicate the theoretical framework of Latour's vision for political ecology by showing Latour's reorientation of the term's 'ecology' and 'politics.' Many of the political-procedural questions will be answered in the following chapter, where I will continue to develop Latour's sense of politics around technoscientific productions and the nonhuman entities that are to be socialized. With Latour's aid, I take a significant virtue from ecology—the way ecology allows itself to be attached to everything, while discarding an already-unified, transcendent, and incontestable Nature. In taking this virtue of ecology, our next chapter will apply it to a secularized politics in order to socialize the materials, procedures, and consequences of technoscientific productions made public. In working with a definition of politics that looks to compose the world slowly with an emphasis on a world we want, Latour highlights the need to reconsider the relationship with where politics begins and ends in cooperation with the sciences. Rather than deciding to politicize only after the fact, one must

start to consider how democratic politics can operate with the scientific process in tandem. The sciences need more political representation. This will be the point of our next chapter.

Chapter 3:
The Collective Process and Nonhuman Political Representation

If the second chapter explicated the theoretical and terminological work of Latour's political ecology, focusing mostly on the terms 'politics' and 'ecology', this chapter looks to extend what has been brought forth and narrow the focus. That focus will surround Latour's idea of nonhuman political representation.

Taking our attachment to everything that ecology offers, while looking to compose a good common world that is the imperative of politics, according to Latour, our good common world will not neglect to attach itself to the nonhumans that have sparked so much concern and controversy in the era of climate change, mass species extinction, autonomous

technologies, and unprecedented loss of biodiversity.[1] If one understands that bringing the sciences and politics in closer collaboration will rely on reorienting how one thinks of the relationship between facts and values as one where values need not always come after the fact, but with much more attention in how scientific facts come to be made public (that is, without deliberation beforehand) the notion of representation to foster a common reality amongst humans and nonhumans will be considered. "No reality without representation!" will be the marching order.[2]

The reader will gain a better sense of the type of political philosophy Latour is offering in this chapter. Further, I will look to understand what "representation" is for Latour, including how individual entities can be represented and the process Latour prescribes to bring the sciences into democracy. Although I have not offered much criticism regarding Latour's political ecology and philosophy, this chapter and the conclusion deals with such criticisms. My aim is simple: explain Latour's political representation for nonhumans as offered by the *Politics of Nature*.

Nonhumans

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[1] The "concern and controversy" here is marked by the debate around whether or not humanities scholars, philosophers, and others should be more or less concerned with what has been called the "ecological turn" or for a more entrenched anthropocentrism. For more on the debate, see Donna Haraway's *Staying with the Trouble: Making Kin in the Chtulucene* (Durham, United States: Duke University Press Books 2016), Clive Hamilton's *Defiant Earth: The Fate of Humans in the Anthropocene (*Cambridge, United
Kingdom: Polity, 2017), Timothy Morton's *Dark Ecology: For a Logic of Future Coexistence (*New York, United States: Columbia University Press, 2016), Sean McGrath's *Thinking Nature: An Essay in Negative Ecology (*Edinburg, United Kingdom: Edinburg University Press, 2019), and Dipesh Chakabraty's essay "The Climate of History: Four Theses," *Critical Inquiry* Vol. 35, The University of Chicago, 2008.
[2] Latour, *Politics of Nature*, 127.

A few words on the term "nonhumans" would do us good in order to avoid confusion about the term itself and its relation to its cohabitator "human." As I discuss this term, I mean it to be the *things* not human: forests, lakes, birds, GMO's, electricity, and so on. Some of the entities I have listed could fit under another term I have been using as "technoscientific productions." Because "nonhumans" can be anything from the most threatening technology to the innocuity of a kitchen table our concern is with those nonhumans that either come out of laboratories properly labeled as scientific productions (like GMO's or Atomic bombs) or the nonhuman entities the biological sciences have been concerned with: animals, plants, soil and trees for instance. The term "nonhumans" must remain general enough to apply beyond just attention to the objects of our old Nature that many ecological thinkers are concerned with but narrow enough so that the reader does not necessarily think I am talking about everything nonhuman all at once. Moreover, the term denotes both "types" of nonhumans rather than a distinction between artificial and natural, organic and inorganic. With that, part of our dedication to nonhumans is to respect that different nonhumans bring about different matters of concern, and so, our focus will be primarily on those nonhumans that have created much ecological and technological buzz.

Further, I am using both the terms technoscientific productions and nonhumans to denote what Latour considers to be part of "civil society" but which has long been demarcated by means of the philosophic binary of subject and object.[3] Rather than trying to make objects into persons like other ecological thinkers may try to do— "animals are as inherently valuable as humans"—Latour is trying to bring "objects" into the socio-political arena and away from the

[3] Ibid. 164.

matter-of-fact way of thinking that treats nonhumans as dull, passive, inert, or mechanized matter.[4] Nonhumans become a public-political problem rather than just the materials scientists deal with. In this way, by providing nonhumans some form of political agency, both as beings who effect and are affected, nonhumans become a proper political subject.

One of the defining characteristics of nonhumans, according to Latour, is that nonhumans, apart from just being the "other" in civil society, are what humans typically debate and gather around. From gun control in the US to the eradication of the coral reefs, it is in constant concern from and for these entities that humans are brought about to discuss the various consequences, meanings, and transformations issued by nonhumans, and moreover, how nonhumans impact and are impacted by social, political, and economic life. When I talk about nonhumans in this issue-based way I am referring to what Latour calls "Things."[5] *Thing* etymologically is related to the German word *Ding* where its early usage meant words such as 'meeting,' 'matter,' and 'concern.[6] Latour reminds us that many Saxon and Nordic nations refer to their Parliaments in such a fashion, like the Norwegian's *Storting* and the Icelandic gathering in the *Althing*.[7] Latour writes, "long before designating an object thrown out of the political sphere and standing there objectively and independently, the *Ding* or Thing has for many centuries meant the issues that bring people together because it divides them."[8] He adds, "The point of reviving this old etymology is that we don't assemble because we agree, look alike, feel

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[4] Ibid. 59.
[5] Bruno Latour & Peter Weibel "From Realpolitik to Dingpolitik: An Introduction to Making Things Public" *Making Things Public-Atmospheres of Democracy* (Cambridge, United States: MIT Press, 2005) 12.
.'[6] See Oxford Dictionary: "ORIGINS: Old English, of Germanic origin; related to German Ding. Early senses included 'meeting' and 'matter, concern' as well as 'inanimate object.'
[7] Latour and Weibel, "From Realpolitik to Dingpolitik," 13.
[8] Ibid. 13.

good, are socially compatible or wish to fuse together but because we are brought by divisive matters of concern into some neutral isolated place in order to come to some sort of makeshift (dis)agreement."[9]   The *Thing* remains an important concept not just because it describes Latour's understanding of political philosophy, but also because it provides a parliamentary image and setting for how Latour is imagining debate and dispute when dealing with *Things.*

As I proceed, it is important to recognize what politics is for Latour beyond just the progressive composition of a good common world. Politics is an issue-related endeavor, and democracy is deliberation and compromise among various concerned parties.[10] If the positive reason for politics is to compose a world which we can collectively live in, the function of politics is to make commensurable the heterogenous disputes among varying parties and their matters of concern. Whereas the old world looked to cut democracy short by an incontestable appeal to the facts of Nature, while leaving those objects silent, including the concerns and attachments of many others in the dark, Latour's new vision for democracy is about proliferating matters of concern, gathering interested parties, and allowing the objects-of-old to have a new lease on civil life, a daunting task considering how many humans are not considered in their respective Western democracies. The task of bringing nonhumans into democracy may seem impossible.

But the more one recognizes the similarities among humans and nonhumans (while respecting their differences), the various capabilities of trees and forests,[11] the important work

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[9] Ibid. 13.
[10] Graham Harman, *Bruno Latour: reassembling the political* (London, England: Pluto Press, 2014), Chapter 7: "'A Copernican Revolution': Lippman, Dewey, and Object-Oriented Politics."
[11] Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (Oakland, United States: University of California Press, 2013).

of microbes and bacteria,[12] the fragility of species, clouds, and other organisms,[13] the task is necessary. As I highlighted in the previous chapter nonhumans are more than just matters of fact. They participate in the sequestration and emission of greenhouse gases; they serve as proxies for the various technological necessity's humans recognize (e.g., door frames), they are friends and companions;[14] they are actors in civil society already—it is about making the efforts to recognize them as proper political subjects and concerns.

It is beyond just "recognition" of these nonhumans that Latour prompts us to take this political project: certain brands of ecologism recognize the virtues of Nature "in and of itself." But Nature, treated in such a fashion, remains a transcendent being that without proper politicization and respect for scientific disputes will be anything but part of civil society. It will remain something one cannot point to, something outside which is inaccessible, or able to be secularized—something one cannot properly *represent*.[15]

Nonhumans are a handful. That may be part of why humans have treated them as dull, passive, and mechanized matters of fact for so long. If one treats them, however, as entities who cannot be properly settled with fist-pounding facts, as *Things* humans gather around to

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[12] Lynn Margulis, *Symbiotic Planet: A New Look at Evolution* (New York, United States: Basic Books, 1999).

[13] Tapio Schneider, Colleen M. Kaul, Kyle G. Pressel, "Possible climate transitions from breakup of stratocumulus decks under greenhouse warming," *Nature Geoscience*, 12 (2019): 163-167. https://www.nature.com/articles/s41561-019-0310-1.

[14] Donna Haraway, *When Species Meet* (Minneapolis, United States: University of Minnesota Press, 2007).

[15] Latour, *Down to Earth*, 73: "No progress will be made towards a 'politics of nature' as long as the same term is used to designate, for example, research into terrestrial magnetism, the classification of the 3,500 exoplanets that been spotted to date, the role of earthworms in soil aeration…That nature is a real catch-all." By claiming so many different entities and practices encompass Nature, Latour's point acknowledges the vagueness of Nature and the shortfall of being able to represent anything typically associated with Nature because of how the term is used to designate so many different things rather than those things as themselves. One cannot represent Nature because Nature, as a pre-unified term, discards all the individual beings that supposedly are a part of Nature.

dispute in their various consequences and transformations, as beings who do not belong to Nature but are part of the social and political arena, the 21st century might look a lot different from the previous 200-plus years in the treatment of our other-halves. One cannot rely on a preestablished Nature to make itself whole again, but finally bring nonhumans to the debate table and see what they can do, how they interact, and who is willing to speak on their behalf. This brief description of nonhumans can now be considered in the representative role that Latour sees as a prescription to the 21st century problem of democratic and ecological politics.

Representation

Given one is no longer concerned with a transcendent Nature, while recognizing that democracy has not given due process to the nonhumans that are also politically implicated, what can be done for these neglected nonhumans to bring them into politics and give them proper representation? To make them constituents? To give speech to the speechless?

If one remembers the discrepancy with the old fact/value distinction, remember that once technoscientific facts became public, their disputability was settled by appealing to their matter of fact way of existence. To add, values always showed up after the fact, having to make ethical or policy proposals that seek to mitigate, regulate, or universalize in *response* to the conditions. In recognition that, for Latour, politics is the progressive composition of a good common world, the ultimate weakness of this binary so characteristic of modern political and scientific life is it's short-circuiting from lab to public life. No debate on these matters of fact, no discrepancy amongst concerned parties who may be fearful of the facts of the Atomic Bomb or if fossil fuel use became public enough that lives, lifestyles, and the ability to have control of a common world was left to elites, traditional politicians, rapacious capitalists, or heads of State.

The way in which matters of concern were ignored in favor of matters of fact revealed the lack of representation and oversight within these facts-made-public. Moreover, no one was to speak on behalf of the nonhumans that were necessarily implicated in these states of affairs. If I may presume the interconnectedness of humans and nonhumans— where, for example, without the work of earthworms on the earth's soil and therefore on crop production any hope of human subsistence is futile— Latour offers us two institutional forms of what he calls representation: in the process of technoscientific productions and in the public sphere of the nonhumans that do not necessarily need to be "produced" but are nonetheless participants in our common world. The former represents what has historically been called "artificial": atomic bombs, fossil fuels, plastic; whereas the latter align with the entities of a "natural" order (trees, bugs, mammals, soil, clouds). These two types of representation are explained for the remainder of this chapter in consideration of both a process that nonhumans can go through, while respecting them as individual groups in need of their own representatives.

The Technoscientific Representative Process

In thinking about the fact/value binary I will be referring to it throughout these pages with the colloquial *ought* and *is* which gets to the heart of what Latour is prescribing. What follows is the search to build a common world with what *ought* to be, rather than the after-the-fact approach which says, "deal with what is: whatever ought to be will be." Or put another way, just because there are the capabilities to produce something, just because a chemical compound or a technological breakthrough has the capabilities as manufactured in laboratories or by industry does not necessarily mean we should let these productions be part of our

common world. The deliberative process must begin before the facts of splitting the atom or the facial recognition capabilities of artificial intelligence are so entrenched, instituted, publicized, and affecting lives and lifestyles that a continual democratic and deliberative process to counter are seemingly more trouble than the production itself: something seen universally by the inability to get off fossil fuels. Values become a requirement of prior consultation.[16]

> Kerry H. Whiteside frames the Modern problem nicely, when he writes,
>
> The problem is Modernity's inability to accord them a place in its political processes and so to decide collectively what it wants to do with them. Currently, scientists redesign matter with a minimum of public oversight. World-transforming developments pass from research laboratories to commercializing enterprises with barely a nod from elected authorities. When unforeseen side effects occur, government agencies demand new scientific studies; experts recalibrate the scales of risk; legislatures largely defer to the new technical assessments and issue supposedly improved regulations. Uneasily, society as a whole races forward on the path of continual technoscientific modernization… 'The environmental crisis' is not a threat looming over 'nature'. It is fundamentally a failure of representation. It is a set of interrelated deficiencies concerning whom we consult, which concerns are heard, how actors are made answerable for their doings, and what matters (literally) are taken into account.[17]

The important political project regards the last sentence of Whiteside's statement: whom we consult, which concerns are heard, who is responsible, and what entities (human and nonhuman) are taken into account on these matters. In order to not short-circuit and give entities their due process, Latour provides us a political function: we need to take into account more entities than the previous political process allowed us to do. This section will explain how to gather the candidates for common existence.

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[16] Latour, *Politics of Nature*, 106.
[17] Whiteside, "A Representative Politics of Nature?" 4.

Tracing back, this "taking into account" is essentially the virtue of ecology Latour helped us excavate back in chapter 2. In attaching itself to everything, ecology was always trying to consider as many entities that were relevant to the issue at hand. Political ecology takes even more matters into account, adding economic, social, and policy decisions in relation to local and global environments, which leads to the question: How does one take more into account while being able to decide when it is appropriate to stop *accounting*? How must the representation process be made and when is it good enough?

First, one does not worry about the overwhelming amount of entities to take into account for that is a function to be decided later. This is what Latour calls the imperative of perplexity: *"thou shalt not simplify the number of propositions to be taken into account in the discussion."*[18] Proposition here means a candidate for common existence who has not yet been instituted and can therefore still be a matter of concern about what this candidate is, does, how it interacts, and so forth. Propositions, if one remembers, are neither true or false, but in this context to be decided by the process I am beginning to explain. Borrowing from a term already known, thou shalt not short-circuit entities who are being considered for common existence but must begin in the complexity that any entity vying for common existence warrants. *Things* begin as matters of concern, not matters of fact. This ensures one does not treat our candidates as ones with already settled essences who cannot enter into new concerns, new associations, or fall out of old ones.

Similarly, the second function of taking into account is consultation: do not short-circuit the number of voices in advance who might have something to say on the matter. The

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[18] Latour, *Politics of Nature*, 104.

imperative here is "thou shalt not short-circuit voices."[19] One is always looking to extend the number of candidates who want their voices heard on the matter. The legality of certain drugs should not only consult the FDA, Big Pharma, and doctors, but also those who take drugs, are dependent on these substances, who are black in America and whose collective culture has been tormented by the "war on drugs." These are all entities one may want to consider concerning the legal status or production of drug and drug use.

Latour writes, "We accuse them [powerful parties] of having put a *fait accompli* with too few people; we are indignant that they have omitted, forgotten, forbidden, renounced, or denied certain voices that, had they been consulted, would have considerably modified the definition of the facts under discussion or would have taken the discussion in a different direction. To appeal to values is to formulate a requirement of prior consultation."[20] Ultimately, as one will learn later, this is the *skill* that Latour sees ethicists doing in this new type of representative process. Rather than searching for foundational moral codes, the ethicist's job is to point out who and what is being neglected and who may have something to say regarding their concerns, experiences, attachments, and priorities. The former role of morality was to find indisputable foundations in response to the various states of affairs that were never consulted beforehand: "Values always come too late." In this role, the ethicist is not responding to after-the-fact states of affairs but is involved in who might be affected and whether or not they would want a say in the matter. They will be like the gadfly on political representation who is always saying "some voices are missing."

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[19] Ibid. 106.
[20] Ibid. 106.

If one remembers the term *hybrid*, one will recall that many technoscientific productions fit this description. They are not wholly facts of nature but are implicated in social and political affairs as well. Taking the hybrid glyphosate and considering the involvements it has with farmers, policy makers, oncologists, consumers, weeds, among its many other associations, one quickly realizes how many other concerns are involved with this product. The chemical compound is no longer a matter of fact whose chemical formula simply contains 3 parts carbon, but whose potential for causing cancer is widely debated, thereby warranting regulations, research, court cases, consumer protections, testimony from farmers, those overwhelmed by weeds and so demand an alternative.

Here, I am highlighting the various associations, concerned parties, implicated persons and nonpersons who might want a say regarding the use and availability of this *Thing* glyphosate. Inevitably, there will be those pitted against one another like in the case of Edwin Haderman vs. Monsanto.[21] Glyphosate's use will also concern how healthy soil is, and so, soil will also be implicated in this matter of concern.[22] This is the function of taking into account: how many are we? How many of the various entities are implicated, *and further*, whose voice is being represented in this matter of concern?[23] Dermatologists for instance are probably not implicated in affairs regarding glyphosate, whereas coffee farmers in Guatemala might be able to testify on behalf of the benefits of non-insecticide use on soils and plants. The coral reefs may not be relevant to the controversies surrounding glyphosate but birds, bugs, and flowers

[21] Sudhin Thanawala, "Man awarded $80 million in lawsuit against Monsanto claiming Roundup causes Cancer," *The Chicago Tribune,* March 27th, 2019 https://www.chicagotribune.com/business/national/ct-biz-monsanto-roundup-lawsuit-ruling-20190327-story.html.

[22] The Soil Association, "The impact of glyphosate on soil health: The evidence to date," March 15th, 2016 https://www.soilassociation.org/media/7202/glyphosate-and-soil-health-full-report.pdf.

[23] Latour, *Politics of Nature*, 109.

who ingest the chemical compound as it travels the airwaves might be. But again, this is not to be decided *yet*. Rather than providing who isn't implicated, the role of taking into account is about asking who is or may want to be a part of the discussion without closing such deliberation prematurely.

Once the function of taking into account has been conducted, there is another necessary function of Latour's political representation process: hierarchy and institution. These are what he puts under the umbrella "putting into order."[24] Hierarchization denotes the combability of new propositions with those already instituted, meaning, deciding what is to be accepted in this new composition process in relation to those entities that have already been accepted in the common world. Do the entities vying for a part in our common world contradict or make incompatible those entities that currently make up our public life? In other words, what do we prioritize?

Eight thousand innocent civilians are killed every year by automobiles.[25] About 8 million metric tons of plastic are dumped into the ocean annually,[26] causing coral reefs to become diseased,[27] killing fish, birds, and other marine life as a result.[28] Insulation is important for keeping our homes cool in the summer and warm in the winter, but the use of

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[24] Ibid. 108.

[25] Ibid. 113.

[26] Jenna R. Jambeck, Roland Geyer, Chris Wilcox, Theodore R. Siegler, Miriam Perryman, Anthony Andrady, Ramani Narayan, Kara Lavender Law, "Plastic waste inputs from land to ocean" *Science,* 13 (2015) https://science.sciencemag.org/content/347/6223/768.

[27] Joleah B. Lamb, Bette L. Willis, Evan A. Fiorenza, Courtney S. Couch, Robert Howard, Douglad N. Rader, James D. True, Lisa A. Kelly, Awaludinnoer Ahmad, Jamaluddin Jompa, C. Drew Harvell, "Plastic waste associated with disease on coral reefs" *Science,* 26, Jan. 2018: 460-462 https://science.sciencemag.org/content/359/6374/460) .

[28] Simon Reddy, "Plastic pollution affects sea life throughout the ocean," *Pew Trusts,* Sept. 24, 2018 https://www.pewtrusts.org/en/research-and-analysis/articles/2018/09/24/plastic-pollution-affects-sea-life-throughout-the-ocean.

trichlorofluoromethane (CFC-11) in the process exacerbates the hole in our ozone.[29] The US

economy (as well as the rest of the Western-European world, now expanding to China) has

benefitted greatly from the extraction and use of fossil fuels but has placed all species and life-

systems in universal fragility. Consumerism is one of the key drivers in many rich industrial

economies, but study after study shows those cultures who consume the most also pollute and

emit GHG's at the highest levels.[30]

The list goes on and on between those cultural practices (and the objects implicated in those

norms) that are valued and thereby entrenched and the very many ecological concerns that

have come to give objects a new form of agency within social and political life. "To economize

or ecologize" becomes one of the many hierarchizing questions one must ask themselves when

posed with what it is we want to be part of our common world and what it is we do not want.

It appears to have been decided that the use of automobiles is a higher priority than the

eight thousand innocent civilian deaths, that the conveniences of plastic outweigh that of harm

to marine life, that *Laissez faire* consumerism is of higher value than the reduction of

greenhouse gases from Western nations. If any of these nonhumans and the political problems

that are associated with them have not been given due process, meaning their candidacy for

common existence was never put into a process of democratic deliberation but simply given

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[29] M. Rigby, S. Park, T. Saito, L.M. Western, A.L. Redington, X. Fang, S. Henne, A.J. Manning, R.G. Prinn, G.S. Dutton, P.J. Fraser, A.L. Ganesan, B.D. Hall, C.M. Harth, J. Kim, K.R. Kim, P.B. Krummel, T. Lee, S. Li, Q. Liang, M.F. Hunt, S.A. Montzka, J. Muhle, S. O'Doherty, M.K, Park, S. Reimann, P.K. Salameh, P. Simmonds, R.L. Tunnicliffe, R.F. Weiss, Y. Yokouchi, D. Young. "Increase in CFC-11 emission from eastern China based on atmospheric observations" *Nature* 569, 546-559 (2019) https://www.nature.com/articles/s41586-019-1193-4.
[30] David Roberts, "Wealthier people produce more carbon pollution—even the 'greener' ones," *Vox*, Dec. 1, 2017 https://www.vox.com/energy-and-environment/2017/12/1/16718844/green-consumers-climate-change.

from lab to public life, it is in the Latourian representative process that one must begin asking these kinds of questions. Can we live without plastic? Can we live without industrial farming? Do we have to prioritize international trade rather than growing and eating the foods our local environments are able to produce? Are individual automobiles more important than thousands of innocent civilian deaths and the GHG's they produce that will cause even more?

The requirement for prioritizing remains in the hands (or speech) of the public. Be it the continual use of plastics, the rise of artificial intelligence, what to do with automobiles or any of our other contemporary *Things*, our priorities have to be reconsidered in a century unlike that of any time before. Because Modernity was in-part predicated on continuing with these types of projects, having to prioritize rather than always Modernize puts the whole philosophic project in great precarity due to the revelation that such efforts are putting the planet, people, and species at great risk. In such a critique, Westerners are no longer operating on a straight-line of inevitable progress in Modernity, but on a flat map making connections and associations among a myriad of beings.

But who is this public? It is those who are affected in what Dewey called indirect consequences and what Latour has called *Things*.[31] Indirect consequences are those who are affected by another's transactions: a toxic chemical compound on the market, bad trade deals, plastics in the ocean, and so on. Both democratic philosophers resist a premade public but one that has to be made in response to the various *Things* that bring together the concerned. Where Dewey was not explicit in associating democratic politics and the "publics problems" to include nonhumans, Latour's work expands the representative role of socially democratic

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[31] John Dewey, *The Public and Its Problems*, (New York, United States: Henry Holt and Company, 1927)

politics to nonhumans. Given our public is not premade and includes nonhumans and humans who gather around such problems, there will be multiple publics rather than a complete and unified "we." Each *Thing* warrants its own public to gather, dispute, and compromise. What Latour offers us in the preceding three functions of taking into account (perplexity and consultation) and hierarchizing (one of the two functions of putting into order) is to begin the process of composing these multiple publics into one that can build a common *Republic*: the collective in its effort to undertake a search for what unifies it.[32]

In order to unify, agreement must happen. This leads us to our final stage in the technoscientific political process with what Latour calls "Institution."[33] Once perplexity has been acknowledged, the relevant voices have been gathered, their concerns and stakes in the argument have been made, and the compromise that is necessary between varying parties and their often-differing priorities, the conversation must eventually come to a close, otherwise we risk moving *too slowly*: a never-ending stalemate in our collective composition. Once an agreement between these varying parties can be established the candidate will either join our collective or be made incompatible with those already prioritized and instituted. The entities in question will have an essence with fixed boundaries that is not up for debate—at least for the meantime.[34]

Where I highlighted the dispute on whether glyphosate is a carcinogen, cigarettes are a known carcinogen. By no simple means did this highly complex matter of concern *become* a matter of fact carcinogen, as shown by Naomi Oreskes' *Merchants of Doubt.* Through many

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[32] Latour, *Politics of Nature*, 248.
[33] Ibid. 111.
[34] Ibid. 114.

trials involving disputed science (many studies funded by tobacco companies to prolong the dispute), government regulation practices, and cigarette-smokers themselves did the once innocent become the highly toxic. It is now instituted that cigarettes cause cancer. What differs from cigarettes not being an instituted carcinogen in the 1940's from today's known carcinogenic effects was the short-circuiting of this *Thing* and the mediations that had to have taken place for this concern to become an instituted fact with an established essence. Contested studies between those that were industry-run and independently conducted had to compete, including how those studies were being funded; the recognition between those who had lung cancer and those who were life-long smokers had to build a relation; doctors, oncologists, and others had to begin *switching sides* from believing there was no causal relationship to there being a direct one. It is not enough to start from a place of putative matters of fact: one must begin the research, gather testimony, find those who are attached to this entity, trace the process, and *then* maybe one can come to know a little more about this *Thing*. Instituted facts come at the end of the process, not before.

However, even with the known-carcinogenic effects of cigarettes, they remain a part of the common world. Debates about plastic or Styrofoam, as one sees with the varying disputes that occur in how governments and local municipalities should handle these wasteful nonhumans, have not come to a close—at least not on a larger level than individual States.[35] The banning of plastics or Styrofoam remains incompatible with the collective world billions of people currently live in, even though both are recognized as major polluters and waste

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[35] Irina Ivanova, "States declare war on Styrofoam: 'People think it breaks down,'" *CBS News*, May 1, 2019 https://www.cbsnews.com/news/styrofoam-ban-states-declare-war-people-think-it-breaks-down/.

products harming marine life, producing GHG's, all while poorer countries have to deal with the waste richer nations produce. Thus, perplexity continues, debate ensues, the collective composition is still deliberating about the common world they wish to inhabit, with or without these nonhumans.

Latour calls the process I have outlined *experimental metaphysics*, in honor of the science's contribution: the dedication to experiment, along with philosophy's: the ability to arouse perplexity and debate among our common world.[36] This appeal to metaphysics may come as a surprise considering how Latour talks about science and politics, two disciplines which pride themselves on being *above* metaphysics.[37] Given that experiments start from uncertainty, go through many trials, rely on adjusting hypothesis based on new findings, have teams of researchers working collaboratively, and bases its success on what it can take in its continual knowledge gathering *process* rather than what it definitively knows, Latour wants to take these virtues and use them for the new political process I have outlined. From this there can be *collective experimentation*. Latour writes,

> Experimentation on what? On the attachments and detachments that are going to allow it, at a given moment, to identify the candidates for common existence, and to decide whether those candidates can be situated within the collective or whether they must, according to due process, become provisional enemies. The entire collective has to ask itself whether it can cohabit with so-and-so, and at what price; the entire collective has to inquire into the trials that will allow it to decide whether it is right or wrong to carry out that addition or subtraction. The deliberations of the collective must no longer be suspended or short-circuited by some definitive knowledge, since nature no longer gives any right that would be

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[36] Latour, *Politics of Nature*, 128.
[37] Simon Schaffer and Steven Shapin, *Leviathan and the Air Pump*, pg. 46. They write, "Experimental practices were to rule out of court those problems that bred dispute and divisiveness among philosophers, and they were to substitute those questions that could generate matters of fact upon which philosophers might agree."

contrary to the exercise of public life. The collective does not claim to know, but
it has to experiment in such a way that it can learn in the course of the trial.[38]

Because all the consequences nonhumans can bring in their various associations are not yet known, it would be naïve to conclude once-and-for-all that humans know everything about fossil fuels, plastics, Styrofoam, the sequestration potential of trees, or the importance of worms in our bodies.[39] Experiments are always risky: by detaching ourselves from a technoscientific product as a "provisional enemy" we may be entering into a world we aren't familiar with. If civilization were to transition to renewables and off fossil fuels, the implementation of renewables has yet to have the research appropriate to the scale of billions of people using such sources. At best, the nations of Germany and Denmark are our greenest examples with Germany still only producing 27% of its energy from renewables.[40]

Which is not to say experiments or collective experimentation is a shot in the dark. But to act as if any scientific-political decision is fool-proof misses Latour's point. One does not know everything that will happen when millions of wind turbines are installed all around the world. We do not know the potential plastics can have baring another crisis the material could help mitigate given their enmity in the new common world. For now, we prioritize the climate, marine life, and other biological species as ways to argue against the continual production of these pollutants. The collective either take the risk, has faith, and experiments in the promise to compose a better world based on what we have learned from previous missteps, or adheres to

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[38] Latour, *Politics of Nature*, 196.

[39] William Parker, "We Need Worms," *Aeon*, May 28, 2019 https://aeon.co/essays/gut-worms-were-once-a-cause-of-disease-now-they-are-a-cure.

[40] Robert Kunzig, "Germany Could be a Model for How We'll Get Power in the Future" *NationalGeographic.com,* November 2015, https://www.nationalgeographic.com/magazine/2015/11/germany-renewable-energy-revolution/.

nihilism or a return to the Cave. One could call this a humbler approach to human knowledge, compared to an absolutist or overly-deconstructivist philosophy.

The process Latour envisions is one that gathers voices, consultants the relevant, parses out their relevancies to the issue at hand, in which those gathered argue, dispute, and debate on the common world they would like to live in, demonstrating its common-unity by the priorities deliberated upon in the construction of this common world. One would be correct to characterize this process as bureaucratic to its core. One could also say that Latour has compiled a process that is good at assembling a jury, those who can testify, (something I will explain in the following section) but has not given proper attention in actually representing specific entities. No longer, Latour's vision proposes, can one neglect those entities by adhering to Nature, or an already made society, but rely on those institutions and skills that allow for more democratic participation in our common world— human and nonhuman alike. In our composition process, I hinted at the various skills and functions of this collective but have yet to speak of who our nonhuman representatives are and what specifically they will represent. We may have *testimony* from experts, a process of checks and balances on technological oversight, but do we have those groups, institutions, or intermediates that can unify and give speech to the otherwise multitude of the speechless? Who are the representatives on behalf of the entities who need representing?

Spokespersonship

For those who may have taken Latour's prescription for nonhumans to dispute amongst one another, that confusion must be cleared. Salmon do not "speak": they cannot speak for

themselves in an argument, nor are they subpoenaed to defend themselves before a jury of their peers. Although comical, that is not the parliamentary vision Latour is trying to institute— what Latour calls a "Parliament of Things."[41]

To start, I will explore the literature concerning Latour's idea of representation. The French political-ecology scholar Kerry H. Whiteside writes of Latour's representative philosophy as one being solely concerned with a *process* and not in forming institutions or representative bodies *for* certain nonhumans. This is the process we outlined in the previous section. In his essay "A Representative Politics of Nature? Bruno Latour on Collectives and Constitutions" Whiteside focuses much of his attention on Latour's process— Latour's new two-house constitution of taking into account and putting into order— as a response to Modernity's short-circuiting and inability to recognize the consequences of its productions. "In the case of scientists," Whiteside writes, "'representation' implies animating a whole debate about their choice of research topics, their experimental designs, their margins of errors, their ways of aggregating data. Latour hopes to institutionalize in a newly visible and complete way the whole protean process of knitting people and things together."[42]

Whiteside draws attention to the fact that Latour's model of representation (or at the very least, the term and its political baggage) may not translate in thinking about the sciences and its historically concerned entities. *There may be actually no representation happening at all in the Politics of Nature*, according to Whiteside. He writes, "Ordinarily representative government represent specifiable persons and groups—not a process—and for good reason. While peoples' identities take shape in larger social processes (for example, class formation),

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[41] Latour, *We Have Never Been Modern*, 142.
[42] Whiteside, "A Representative Politics of Nature?" 194.

those processes themselves are too fluid to be brought into an assembly using the crude mechanics of representation. Representation works through simplification."[43] Representation is stable through its simplicity. Someone's political representative is easily *identifiable* based on a previous process of campaigns and elections. This process ends once a representative is identifiable, accountable, and responsible for those who elected or did not elect, him or her. Voters know who is supposed to be representing them based on an already institutionalized process with an identifiable end.

For others, it too is unclear what Latour is actually *representing*. Readers may wonder at this point: is Latour solely concerned with how humans as mediators *speak* about nonhumans— how we use language to speak on behalf of beings that are unable to speak for themselves? Or is language a sort-of secondary concern in relation to building representative institutions whose role it is to represent nonhumans as beings, agents, or constituents within a Latourian Republic?

Graham Harman, in his book on Latour, *Bruno Latour: Reassembling the Political* concludes Latour's vision to be one where, "We [reconceive] politics in such a way that nonhumans are allowed to speak, in mediated fashion, through spokespersons… clearly we conceive this new idea of the political role of nonhumans, 'the conceptual institution that would make it fruitful does not yet exist. This institution is what we have to invent.' The remainder of *Politics of Nature* is a provisional attempt to invent just such an institution."[44] Harman makes the point that Latour's *Politics of Nature* is an attempt at building institutions where *spokespersons* speak on behalf of nonhumans in what feels like a parliamentary debate.

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[43] Ibid. 194.
[44] Harman, *Bruno Latour: Reassembling the Political*, "The Middle Latour" pg. 60-61.

In my explanation of the "technoscientific process" I was unable to ground Latour's process in an actual institution that can abide by his new two-house constitution, nor did I mention spokespersons. This adds to the confusion of what Latour is representing: Whiteside says no representation, Harman says representation through spokespersons. This term, *spokesperson*, is arguably the closest we get to a grounded vision of Latourian representation for nonhumans. More on this soon.

Eduardo Kohn, on the other hand, criticizes Latour's lack of representation as it relates to his preoccupation with language, arguing that Latour limits the frame by which nonhuman representation is explored. In his book *How Forests Think: An Anthropology Beyond the Human*, Kohn writes

> In his image of 'speech impediments,' for example, Latour attempts to find an idiom that might bridge the analytical gap between speaking scientists and their supposedly silent objects of study. 'Better to have marbles in one's mouth, when speaking about scientists,' he writes, 'then to slip absent-mindedly from mute things to the indisputable word of the expert.' Because Latour conflates representation and human language his only hope to get humans and nonhumans in the same frame is to literally mix language and things—to speak with marbles in his mouth.[45]

This is the second critique I have brought attention to concerning Latour's lack of representation in regard to a nonhuman politics. Kohn critiques Latour for conflating language and representation, claiming that Latour's only frame for human-nonhuman relations is the way in which humans employ language about nonhumans. In this, the only possibility for a "representative politics of nonhumans" would be linguistical: how humans speak *about* nonhumans. Kohn argues, language, or "symbolic representation," is what makes humans

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[45] Kohn, *How Forests Think,* 40.

unique from nonhumans: both living and inanimate. However, Kohn discerns that humans and many nonhumans (dogs, flies, and other living creatures) share two other sign processes, namely indexical and iconic, which Kohn borrows from Peircean semiotics. Kohn writes,

> In Peirce's terminology, these other modalities (in broad terms) are either "iconic" (involving signs that share likenesses with the things they represent) or "indexical" (involving signs that are in some way affected by or otherwise correlated with those things they represent). In addition to being symbolic creatures, we humans share these other semiotic modalities with the rest of nonhuman biological life. These nonsymbolic representational modalities pervade the living world— human and nonhuman—and have underexplored properties that are quite distinct from those that make human language special.[46]

Kohn's critique points to the fact Latour does not provide any alternative frame where humans can relate to nonhumans outside of what we call them and how we speak about them. Latour even acknowledges this limited sense of representation, claiming that any who propose to speak for another is inherently flawed. He writes, "The representation of human spokespersons remains as profound an enigma as that of laboratories. That a human should speak in the name of several others is as great a mystery as the one in which a human speaks in such a way that he is no longer speaking at all (70).[47]

An excerpt like the one above demonstrates Latour's skepticism behind all forms of representation. Add that Latour' criteria for successful representation is what he calls *speech impedimenta*, described as "a gamut of positions running from the most complete doubt— which is called artifact or treason, subjectivity or betrayal—to the most total confidence— which is called accuracy or faithfulness, objectivity or unity" and one is unclear about what

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[46] Ibid. 8.
[47] Latour, Politics of Nature, 70.

constitutes a good representative.[48] He can only tell us what proper or good representation is

called, not what constitutes it and where humans can go looking. Given this, one can circle back

to Whiteside's critique: Latour does not give the reader a proper end when either talking about

how we are to represent nonhumans (when we know we are talking in a faithful way for or

about them), or how we are supposed to build institutions in order to represent nonhumans.

I share Whiteside's critique concerning Latour's process and sense of representation as

lacking an identifiable end. Moreover, I do find Kohn's critique interesting in that there are

more ways humans and nonhumans can relate than just linguistically.[49] In providing alternate

frames where humans can relate to nonhuman life, such a relation would advance nonhuman

life to become political constituents—to have a seat at the Parliament of Things as not just

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[48] Ibid. 70.

[49] To give a sense of other semiotic processes, I draw on the example Kohn gives about the walking stick insect, the "stick bug" who through their evolutionary iconicity—their likeness with the environment that they "represent," was able to survive for thousands of years through this semiotic process. He writes, "How did walking sticks come to be so invisible, so phantomlike? That such a phasmid looks like a twig does not depend on anyone noticing this resemblance—our usual understanding of how likeness works. Rather, its likeness is the product of the fact that the ancestors of its potential predators did not notice its ancestors. These potential predators failed to notice the differences between these ancestors and actual twigs. Over evolutionary time those lineages of walking sticks that were least noticed survived. Thanks to all the proto–walking sticks that were noticed—and eaten—because they differed from their environments walking sticks came to be more like the world of twigs around them. How walking sticks came to be so invisible reveals important properties of iconicity. Iconicity, the most basic kind of sign process, is highly counterintuitive because it involves a process by which two things are not distinguished. We tend to think of icons as signs that point to the similarities among things we know to be different. We know, for example, that the iconic stick figure of the man on the bathroom door resembles but is not the same as the person who might walk through that door. But there is something deeper about iconicity that is missed when we focus on this sort of example. Semiosis does not begin with the recognition of any intrinsic similarity or difference. Rather, it begins with not noticing difference. It begins with indistinction. For this reason iconicity occupies a space at the very margins of semiosis (for there is nothing semiotic about never noticing anything at all). It marks the beginning and end of thought. With icons new interpretants—subsequent signs that would further specify something about their objects—are no longer produced (Deacon 1997: 76, 77); with icons thought is at rest. Understanding something, however provisional that understanding may be, involves an icon. It involves a thought that is like its object. It involves an image that is a likeness of that object. For this reason all semiosis ultimately relies on the transformation of more complex signs into icons (Peirce CP 2.278)." Kohn, *How Forests Think*, 51.

Things but participants. However, is there nothing to be gained if we take Latour's term *spokespersons* and apply it to an institutionalist reading of Latour such as Harman's? Can we leave this thesis feeling that Latour is actually looking to represent nonhumans, and not just procedurally speak *about* them, but for them?

Latour is more serious, I would argue, about bringing nonhumans into the political process as beings who are represented and not just as things to be considered in a process of whether certain technologies should be further developed. This is evinced by Latour's 2015 interactive art exhibit *Make it Work: The Theatre of Negotiations* where Latour and others gathered 200+ students to participate in a makeshift parliamentary dispute where groups represented their respective entities, both human and nonhuman. Soil was there, along with ocean, oil, plants, among others who convened in order to debate amongst one another.[50]

Given the exhibit was in response to the 2015 Climate Accord in France, the parties were those humans and nonhumans most relevant to issues pertaining to the climate crisis. Artificial intelligence was not there, Facebook or Apple were not present, nor oncologists, dermatologists, or Guatemalan farmers. The reader may have been thinking, given our previous analysis regarding the new two-house constitution of taking into account and putting into order that the ability to stop taking into account may never stop. One could just keep adding voices that are calling out for relevance: "invite me! Invite me! I am a concerned participant. I want to take part in the debate."

But each *Thing* warrants its own public. If we recall that publics form out of consequences experienced by a multitude of people are who affected, such a public needs a

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[50] "Paris Climate 2015: Make it work; '*theatre of negotiations*'" http://www.bruno-latour.fr/node/621.

spokesperson to speak on behalf of those affected. John Dewey, in his book *The Public and Its Problems* talks of "officials" who are to care for the public affected by the consequences in question. He writes,

> The public consists of all those who are affected by the indirect consequences of transactions to such an extent that it is deemed necessary to have those consequences systematically cared for. Officials are those who look out for and take care of the interests thus affected. Since those who are indirectly affected are not direct participants in the transaction in question, it is necessary that certain persons be set apart to represent them, and to see that their interests are conserved and protected.[51]

In recognizing that technoscientific productions can produce unforeseeable consequences that put people and other beings in danger, and that such consequences bring about a public, Dewey may have given us the proper remedy for Latour's lack of representation as critiqued by Whiteside and Kohn. In other words, where Whiteside argues Latour focuses on a process to address these consequences but without giving representation to those affected, Dewey's "official" is the model for our spokesperson: those affected by consequences need a point-person to unify the public and speak on their behalf for their benefit. The public is cared for by systematically taking care of the consequences upon those affected—the spokesperson cares for the public it represents. In taking Latour's technoscientific process, such care (or concerns) is conceptualized as preventing those consequences before they can entrench the common—before they become matters of fact. Dewey's "official" would, theoretically, address such potential concerns as a representative caring for the public who is potentially or already affected. We will proceed with Dewey's understanding of officials who care for publics and further develop the idea of spokespersons.

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[51] Dewey, *The Public and Its Problems,* 15-16.

As I have addressed, Latour issues skills from various trades and professions who will collaborate in providing some form to how these skills will be utilized. In the case of spokespersons, the skillful will be relied on for *testimony*. Those include moralists whose skill to always find those voices outside the collective will bring attention to the humans and nonhumans who have been neglected; scientists who research, make objective claims, and who are often on the frontlines with nonhumans, speaking in their place. Economists are necessary for understanding the relation between human consumption and production of nonhumans, while politicians serve as those tasked with *scenarizing* the totality of relations, often speaking in terms of a "we" that designates a collective of those who are in and those who are out.[52]

These skills will help compile testimony on behalf of what these trades research, which will help in the consulting process for deciding those relevant voices from the irrelevant. Such trades will also be a major help as the deliberation process must begin prioritizing what will be in the common world. Nevertheless, for representation of nonhuman entities to become commonplace one cannot just leave the skillful to be our representatives. There must be something that can bring the skills of the collective together on behalf of a unified thing. In the case of *The Theatre of Negotiations* 200 representatives were there to debate on issues pertaining to climate change: specific entities with representatives for states, countries, as well as the nonhumans who are most relevant to the issue.

In response to Whiteside's argument that Latour is not concerned with representing nonhumans, *The Theatre of Negotiations* is the closest Latour gets to an actual application of

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[52] Latour, *Politics of Nature*, 138. Here "scenarize" means to take the entire "scene" and make it into a common collective. After the process of institution, we must be able to account for a unified whole just as politicians or scientists are able to make whole an entire collective of, constituents, "Americans," bacteria, atoms, and so on.

nonhuman political representation. The *Theatre* (2015) was a fictional play displayed as a parliamentary debate where the actors, the 200 representatives, or *spokespersons*, represented a particular species or nonhuman. The spokespersons "invitation," so to speak, was cast around the issue at hand—climate change. Thanks to the sciences who have made us sensitive to the fragility of soil, clouds, oceans, trees, animals, and humans, among others, it is upon the issue, the *Thing,* that warrants who is to be at the table in Latour's fiction. From this, five representatives speak for the nonhuman so as to carefully consider what that nonhumans needs and wants are in order to sustain its survival, according to the script of the play. Spokespersons must do this *duty* while having to balance the diplomatic act of negotiation with other nonhuman and human delegations. Latour's belief is that the ecological crises are best remedied by more representative democracy, and this time, to have nonhumans be part of the deliberations.

It is through the intersection of science, fiction, and politics that Latour has created his most practical application, by which, he believes it is *through* fiction that facts (like a nonhuman parliament) could come about. Moreover, in Latour's pivot to fiction it demonstrates that the crises of imagination and ingenuity will further the crises of species and human extinction. We need to imagine an *ought* to the way the world is because the world that *is* may no longer *be* in the near future.

In *Facing Gaia: Eight Lectures in the New Climatic Regime*, Latour writes of *The Theatres* impact as, "first… we can no longer let the nation-states occupy the stage all by themselves. It is

precisely to avoid this utopia that we have to add non-state delegations."[53] He adds, "the crucial point is that the delegations whose names recall ancient elements said to be 'of nature'— 'Land,' 'Oceans,' 'Atmosphere,' 'Endangered Species'—are there not to naturalize the discussion by reminding humans of what their 'environment' requires but to repoliticize the negotiation, by preventing coalitions from forming too quickly at the expense of others."[54] Here one can see the ultimate political project of Latour's *Theatre of Negotiations*: take the "elements" that were formerly of nature and have a parliamentary debate amongst them and other representative bodies—both human and nonhuman.

Latour also references a contemporary and concrete model of what *his Theatre of Negotiations* could (if it doesn't already) look like. He writes, "The Dutch, for example, have proven able to choose, at the same moment, ever since the thirteenth century, deputies called to represent human subjects, but also representatives to serve on the National Water Authority, whose decisions are followed attentively by dairy and poultry farmers as well as tulip growers."[55] In a world plagued by ecological and economic devastation, it is no wonder that even Latour uses Nordic-style social democracy to actualize his project. He writes, "… of Dutch water, which is *well governed* and thus *delimited*, or as we say, *appropriated*. 'Good government' of water, lands, air, cities, or economies requires a representative government, and thus spokespersons, emblems, figures, to whom one can speak face to face."[56]

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[53] Latour, Bruno. *Facing Gaia: Eight Lectures on the New Climatic Regime*, Cambridge, United Kingdom: Polity Press, 2017, pg. 262.
[54] Ibid. 262.
[55] Ibid. 272.
[56] Ibid. 274.

Is this that extreme? Has Latour set up the reader in thinking he was going to completely shake up the political system, only to rely on a fictional theatre and a practice that has been around since the 13th century amongst the most progressive government on earth? That is for the reader to decide. But the better question is how it could have taken Latour nearly 30 years (from his *Parliament of Things* conception in *We Have Never Been Modern* [1991] to *Facing Gaia* [2017]) to concretize his parliament in *this* nonhuman political representative fashion? If this is the *what* of Latour's political representation, one could conclude that it is an underwhelming solution to an otherwise very important political project of trying to represent nonhumans. For now, we will use *The Theatre of Negotiations* as the concrete application to what Latour's nonhuman representative could look like. We will proceed with the term spokesperson in speaking about who is to represent such nonhuman constituents.

Taking as evidence Latour's *Make it Work* exhibit and using Dewey's understanding of officials, a spokesperson in this context can be a representative institution (here in its classical sense rather than "institution" as the final phase of Latour's technoscientific process), group, or organization that speaks on behalf of a multitude of beings as a unified one in order to serve that being.[57] Just as members in congress speak for their districts, it is appropriate to apply a similar model to those whose role it will be to speak for nonhumans in a more explicit political capacity. Latour's "politician" in the *Politics of Nature* serves as a good model for spokespersonship for they are the ones who unify a multitude of beings into some single referent that they claim to speak for. Moreover, politicians are useful as they make

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[57] Bruno Latour, "What if we Talked Politics a Little?" *Contemporary Political Theory*, 2003, 2, (143–164), www.palgrave-journals.com/cpt, pg. 149.

commensurable various disputes through compromise, and historically, have been the prime example of what institutional representation looks like. But unlike congress members whose concern is primarily with human constituents, it is up to these types of representatives of nonhumans to speak on behalf of nonhumans *for* nonhumans.

Nonhuman representation already exists in many different forms for many different nonhumans. Be it the World Wildlife Fund (WWF), The Soil Society of America, The Audubon Society, among the myriad of other conservation, stewardship, or protective organizations that have become the standard representatives for a variety of nonhuman entities, Latour's *spokesperson* would seem to suggest an expansion of these types of representative bodies. That is, without the designation of "protecting Nature"—an appeal that could restrict the representative role rather than advance it. Latour writes,

> Thanks to the notion of spokesperson, a process of assembling can now begin, one that no longer divides up the types of representatives in advance according to whether they demonstrate what things are or declare what humans want. In the single Kyoto forum, each of the interested parties can, at a minimum, agree to consider the other as a spokesperson, without finding it relevant to decide whether the other represents humans, landscapes, chemical-industry lobbies, South Sea plankton, Indonesian forests, the United States economy, nongovernmental organizations, or elected governments.[58]

In this description, spokespersons are their own hybridized entities. In Latour's analysis of the Kyoto Protocol, those who attended were there to represent a myriad of beings: humans, forests, plankton, and so on, without hesitation about being a speaker for humans or nonhumans. In that, they synthesize the various skills of the collective so as to speak for their constituents and with consideration of all the institutional tools the collective has. The other trades of the collective become indispensable to the *argument* spokespersons will make on

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[58] Latour, *Politics of Nature*, 65.

behalf of the represented: such an argument *testifies* to the representative's case. If, for example, one is discussing a land trust, the spokesperson will rely on the various testimonies among ecologists who research the soil, wildlife, the health of the grass, if the land is expanding or eroding, and so on. Economists can calculate how the land trust is influencing local food production which influences local economies. If the trust is home to wildlife this may impact tourism. Moralists and policy makers can use their skills to continue protecting these lands, enforcing policy and regulation, and generally galvanizing a community to gather around this land trust. Spokespersons can call upon these trades to testify on their behalf in order to better protect and care for the land and its various associations. In doing so, the spokespersons must be kept to a criterion of how well they are said to be representing these entities.

But again, Latour's *speech impedimenta* is the closest we get to a representative criterion for spokespersons. Given the two poles of this criteria are treason and betrayal for bad representation, and objectivity and unity for good representation, in order to give any form to this spokesperson I must explore what this criterion may look like, for Latour provides us with no examples or further explanation concerning this.

Noticing the betrayal of representation may be easier recognized than faithful representation—something the United States' congress knows all too well.[59] Sticking with the representative role I gave already existing wildlife and "Nature" organizations, bad representation came most disapprovingly when the Nature Conservancy was funding fracking projects and receiving Big Oil money even after pledging not to involve itself in any new oil

[59] RJ Reinhart, "US Congressional Approval Stable at 21%" *Gallup*, November 13, 2018
https://news.gallup.com/poll/244736/congressional-approval-stable.aspx.
The United States' Congress highest approval rating within the last 6 years was 28% in March 2017 with it averaging around 20% consistently.

projects, at the time. Championed as the largest environmental group in North America, the Nature Conservancy's pledge to protect wildlife, resist fracking projects, and oil subsidies came under great scrutiny beginning in 2007 with the Conservancy funding and receiving funds from an oil-well project on the Texas City Prairie Reserve that the Conservancy owns. To add, these lands were a refuge for the Attwater prairie chicken, an endangered bird in the United States that the increase of oil production put in even more danger, ultimately having to move the birds to different land to increase their chance for survival. In the words of Naomi Klein, "We all need to get off fossil fuels… If the largest environmental organization in the world can't figure out how to stop pumping oil and gas, how are they going to help the rest of us figure it out?"[60]

Can the Nature Conservancy be labeled unfaithful, self-interested, or a betrayer? Yes. But does that characterize the whole organization? Including their protection of millions of acres of land, their assistance to other endangered species, and their newest pledge to resist any oil drilling on their lands? I don't think so. Latour does not seem interested in parsing out neat labels in the spectrum he provides for good and bad representation. Moral purity is not the position one should take—otherwise Latour would have kept the role of ethicists as searching for some universal morality which would contradict his dedication to experimentation. However, Latour's imperative to *doubt* all forms of representation leaves the reader unsure about who and what they can trust.

Taking what has been learned about Latour's *hierarchizing* in his "putting into order" and treating him as an ethical pragmatist—as one who is concerned with democracy, consequences, and priorities, and one may be able to fill in the blanks. In the case of the Nature

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[60] Justin Gillis, "Group Earns Oil Income Despite Pledge on Drilling," *NYtimes.com*, August 3rd, 2014 https://www.nytimes.com/2014/08/04/science/group-earns-oil-income-despite-pledge-on-drilling.html.

Conservancy, one can recognize a major fault, but still prioritize the amount of good work many environmentalists, green groups, and ecologists acknowledge as beneficial to the cause. No one would deny the advantageous representative role the Conservancy has taken, for the most part, in good faith. Moreover, the Conservancy recognized its fault, though with a less-than-great response in that they were "unable to get out of the contract" with the oil company, a claim Naomi Klein has revealed to be faulty.[61] After this controversy broke, the Conservancy pledged it would never allow fracking or oil extraction to start on any of its protected lands. Part of what makes a good representative is recognition of their faults, followed by actions that restore the faith of the public that they are for the entity they claim to be representing. One more major slip-up like the Texas City Prairie Reserve, however, and the Nature Conservancy could lose its representative role as the premier environmental group. In the end, one has to decide, given all the rights and wrongs of a group, whether or not they are a benefit or determent to the *Republic* that the public is looking to compose in their good common world.[62]

Throughout this chapter, I have taken Latour's concern for nonhumans and prescribed both a technoscientific process and a particular representative role as it relates to ecological and democratic thought by borrowing John Dewey's term "official" and using it to help Latour's concept of spokesperson. I have given roles and adopted the virtues of various skills that the commons can use in order to take more entities, attachments, and concerns into account—attempting to attach ourselves to every being who we may want to consult in the matter; while

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[61] Gillis, "Group Earns Oil Income Despite Pledge on Drilling."

[62] Not even Klein is ready to completely denounce the Conservancy, given their efforts to listen to activists who denounce environmental and green groups who claim the Conservancy has had too close a relationship with the oil and gas industry. See *This Changes Everything: Capitalism vs. the Climate* (New York, United States: Simon & Schuster, 2015) 355.

leaving the work of putting into order (that of hierarchizing and instituting) to others who will have to make commensurable various contradictions, speak of priorities in our new collective world, and finally, discern what we are able to agree upon as the good common world humans and nonhumans would like to cohobate together. If one takes Latour's earlier problem with Nature in that it did not allow a particular politicization of the nonhumans implicated, the expansion of institutions to represent specific nonhumans becomes our most practical application of Latour's political representative philosophy.

I would call this spokesperson expansion a theme within what has been dubbed the "care economy": that of the future being filled with more care-taking jobs like nursing, daycare, and yes, animals species, forests, rivers, soil, and so on.[63] Applying "care"—a word feminists and Dewey use—to Latour's representation gives a sense of morality and purpose to the often cold tone of "concerns" and Parliaments. Spokespersons may be the only foreseeable remedy to Kohn and Whiteside's critique of Latour's lack of representation. For without proper representatives for nonhumans that are implicated in some matters of concern, some deliberative *Thing*, Latour's *Politics of Nature* becomes solely a process about which Modernization projects are taken upon and what are collectively discarded—with for and by humans. If there are no proper representatives for nonhumans they are not even part of the debate table, which limits the entire parliamentary debate to humans only talking about nonhumans. To add, care jobs are some of the least carbon-emitting in contemporary economies.[64]

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[63] *International Labor Organization*, "Decent Work and the Care Economy"
http://www.ilo.org/global/topics/care-economy/dw-and-care-economy/lang--en/index.htm.
[64] *The Leap Manifesto*, https://leapmanifesto.org/en/the-leap-manifesto/.

One may still wonder what *I* intend to represent by positioning Latour's sense of representation for nonhumans. The first assumption, given the examples I chose, to represent nonhumans would be those historically associated with Nature. One would be correct to think I believe the best work that can be done in expanding institutional representation to nonhumans in a way where such institutions speak for nonhumans is in animate and biological life: *natural ecosystems*, in a word. The commons I imagine the *Politics of Nature* could be best used for is in preserving, caring, and giving a seat at the table for those beings in the ecological and biological sciences: soils, insects, birds, trees, plants, wetlands, oceans, bacteria, and so on. After all, these beings are a potential *public* given how they are indirectly affected by the consequences of (mostly) human transactions. Moreover, animate and biological life already have some established moral and cultural attachment to them. This is what I *prioritize* in thinking about what it means to represent nonhumans. Those are the facts I want to preserve.

Latour has given us a lot to think about. We need to reconsider the roles distributed in democracy, what their skills can be used for, and who "we" consider a part of the democratic experiment. For now, we must gather the ethicists, ask the scientists to hold off on their neutrality, further develop a public and spokespersons for nonhumans, and reattach ourselves "down to earth"—collecting every scrap, specimen, and species who warrants a say on the state of the earth.

Conclusion

There are many virtues I did not explore in Latour's political-ecological philosophy, and especially the form of critique he offers. Two of the additional virtues I could have further addressed concern regulation and the machinery and innovation that capitalism depends on. As I outlined Latour's process by which matters of concern and values precede technoscientific matters of fact, Latour gives us a novel argument by which a form of regulation or "pre-regulatory" oversight occurs before the facts of a probed "Nature" are publicized, meaning, that because values become a requirement of prior consultation, the consulting process allows for democracy to begin "regulating," "overseeing" before certain nonhumans become

entrenched parts of public life. Innovation for the sake of innovation is not seen as a necessary good, but as an outcome of the type of common world we wish to build.

In Latour's vision for democracy, we do not construct technoscientific entities and then begin regulating them, but rather regulation is happening throughout the whole process—from its production in labs, to the questions that will be asked of what this product does, how it relates to the ecological crises, and so on. In the case of some hazardous nonhumans, a few regulatory tests and a couple regulations may happen after the product has been released, but Latour's philosophy goes further. We may find, in the process outlined, that a certain nonhuman can be disastrous for indigenous people's land and sovereignty, that a product is non-reusable and non-recyclable and so will end up in the ocean or landfills, and so on. In gathering those concerned, the concerned may demand more research, more consulting, and more time that does not short-circuit lab to public life.

One example may help illustrate this pre-regulatory point. Currently, in San Francisco they have banned the use of facial recognition technology. These technologies, perched inconspicuously on buildings, have been used to gather people's information, to surveil, and in some cases, to protect by way of discovering terrorists and violent criminals that the technology has successfully found. But due to fear of the United States becoming a surveillance state, civil liberty groups have urged governments to take these technologies seriously before they are widely implemented. San Francisco is one city to ban these technologies, and by doing so, will limit innovation for these machines by regulating before they have entrenched public life. Though the technology is already in existence, this example points to the prescription Latour offers in that we do not need to take the possibility for innovation as a matter of fact.

We can deliberate about its desirability before it is actualized. We do not need to entrench our lives with these machines, and then decide after the fact that we either need to regulate or rid ourselves of them. If a public can form around this dangerous and invasive technology, then we can decide that we do not want them in our commons before they become common.[1]

Such an idea of "pre-regulation" through an established body that can execute the process also points to Latour's indirect critique of free market capitalism. If capitalism is predicated on innovation and bringing those innovations into the free market— nearly always pitched as a promise of progress, Latour's process seeks oversight before many scientific and technological products can enter the market. In tracing Latour's technoscientific process the object in question is not limited from the onset in its *propositions*: what comes out of laboratories is limited concerning our understanding of the consequences such a product can have and who might be affected or not. *Consulting* those researchers relevant to the object, those who might be vulnerable to potential risks, slows the jump from production to marketization. A *prioritizing* tactic (what Latour calls "hierachizing" in the house of putting into order) is to consider the ecological damage unfettered and extractivist capitalism projects have on wetlands, soils, animals, the atmosphere, agriculture, and so forth. By giving due process to these nonhumans the streamline from, say, resource extraction to global sale, further slows down the profit-making. "To ecologize or economize" becomes not just a rallying crying for environmentalists but for a *Republic* who must decide if the economic projects they intend to pursue further or worsen the ongoing ecological damage and how such things are prioritized

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[1] Kate Conger, Richard Fausset, Serge F. Kovaleski, "San Francisco Bands Facial Recognition Technology," *The New York Times,* May 14, 2019 https://www.nytimes.com/2019/05/14/us/facial-recognition-ban-san-francisco.html.

considering human health, soil sustainability, GDP, ppm of carbon dioxide in the atmosphere, lifestyle convenience, access to food, animal species, among the other concerns on the state of the earth. Latour likes ecology because there is a lot to take into account—he takes ecology's "scientific" model and applies it to Western industrialized social democracies as a way to deal with our Modern projects and lack of democratic representation. Whereas Marx was concerned with who owns the means of production, Latour makes us question whether we should have certain means of production at all.

These three functions of the Parliament of Things—not limiting propositions, consulting, and prioritizing become the Latourian ethos in the *Politics of Nature*. These are helpful measures to take in thinking about issues which pertain to achieving democratic participation and consideration. Add that, Latour focuses much of his attention on nonhumans and one might feel that Latour is trying to consider as much as possible without being wholly anthropocentric about it. However, as was addressed, thinkers like Kerry H. Whiteside and Eduardo Kohn put into question whether Latour is actually considering nonhumans to be *participants* and not just objects in this Parliament. Put another way, are nonhumans always *Things* or can they be settled enough to be part of the deliberation process? Do we just gather to debate about what technoscientific objects do, or can do, in terms of humans and if we should be concerned? Or do nonhuman representatives have a seat at the table? This is a point of confusion that I found in Graham Harman's understanding of nonhumans as being nearly synonymous with Latour's *Things.*

As I explained earlier, the issue such thinkers as Kohn and Whiteside have against Latour's idea of representation is that neither believe representation is happening, and if it is, it

is only concerned with how humans talk about nonhumans. To add to this confusion, in Harman's book about Latour he seems to equate *Things* with nonhumans: because we do not know what happens when nonhumans enter into new associations, be it in their developing stages or as they expand beyond the lab, they start and end as *Things*. Harman writes, "For the early Latour, nonhuman things were important for their role in stabilizing human society. But for the middle Latour, their primary role is to destabilize society by confronting it with unexpected controversies."[2] These controversies are absolutely agreeable. We should expect and accept that we don't know all there is to know about objects and their consequences. However, if we take such a reading, Latour is suggesting an inability of the Collective to stabilize nonhumans enough to have them represented as beings or constituents of the Republic. Again, institution—the ability to close discussion and have some stable nonhuman that can be represented because of its identifiable stability remains unclear. Because of that unclarity the whole notion of Latourian representation is fragile. Whiteside told us Latour is concerned with a process which provides democratic oversight to technoscientific productions; Kohn indicated that Latour can only speak of nonhuman representation in terms of language, which would certainly limit the ability of nonhumans *to be* political agents. Finally, by providing nonhumans the sole function of *Thingness* we are left trying to represent something that always *re-presents* itself: when an object enters into new associations the object is not the same. Latour's nonhumans are completely dynamic. With that, we may be seeing the end of Nature, but Latour replaces the unspecific, intangible, and transcendent Nature with humans unable to

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[2] Harman, *Bruno Latour: Reassembling the Political*, 60.

situate any of the nonhumans that populate the rest of the world. Latour should consider that even ecologists are able to manage hundreds of acres of biodiverse land with some stability.

There are two closely connected reasons to why Latour's representation is lacking beyond his attention to a process. Latour has no ethical foundation about what should be represented. The upper house of taking into account in Latour's two-house constitution is supposed to gather the concerned, those who can testify, and those who are affected. This sense of affirming multiple people's realities in their concerns without short-circuiting them is its own sort of ethical standard—one I agree with when it comes to the variety of human cultures trying to find a common world amongst one another. However, if we recognize that historically natural creatures and ecosystems are 1. Needed for human and life-support systems, and 2. deserve moral consideration, Latour has ontologically flattened all of nonhumans to be the same (without distinguishing in advance those "natural" from the "artificial") which flattens all moral consideration as well. Latour resists a premade public to debate about certain matters of concern, but he does rely on a premade ethic that would allow institutional support for representing nonhumans. Because there is no Nature to encompass all of those "natural beings," suddenly all those objects are left as taxonomized groups distinguished from others who cannot even hide behind a romantic-ethic of Nature. This leaves a lot of moral work to be done quite frankly, and Latour is not up to the task other than the ethicist *considering* these nonhumans. How do we consider in the first place?

This is not the only task Latour neglects to consider in the *Politics of Nature*. I agree that economists, politicians, scientists, and ethicists will play a large role in any political philosophy, but I question where some other important roles are in the *Politics of Nature*, above all the

media and activism. In the United States and beyond trust in corporate media remains fragile from both the Left and the Right. More and more young people are receiving their news from independent platforms, podcasts and YouTube. Meanwhile, the term "fake news" has come to mean more about who is disseminating the news than about the actual content of the story itself.

Moreover, it is not a benefit to the ecological, and therefore human, cause to have climate change, species devastation, and loss of biodiversity be a "left-wing" issue. As I have already pointed out it has not always been this way. But, one could argue that Republicans and conservatives do not hold climate change as a priority when the primary motor for conservative media is Fox News who openly denies the problem. To add, media and the United States cultural continue to entertain climate change denialism with many op-eds and government officials consistently in the headlines.[3] To add, other corporate media such as CNN and MSNBC do a poor job covering the topic consistently.[4] But Latour remains silent on this issue. This could be because of when Latour wrote his major political ecological text (published in French in 1999), but any good philosopher is astute to potential boiling problems. Distrust in media or climate change denialism did not start with Republicans or Donald Trump and nor will it end with them. Latour does not mention the media more than once throughout the *Politics of Nature*. Whether academics recognize it or not, the public primarily gets its narrative and is made *concerned* with what popular media disseminates. How people get their information

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[3] Dana Nucitelli, "The Wall Street Journal keeps peddling big oil propaganda," *The Guardian*, June 11, 2018 https://www.theguardian.com/environment/climate-consensus-97-per-cent/2018/jun/11/the-wall-street-journal-keeps-peddling-big-oil-propaganda.
[4] In the words of Chris Hayes, "every single time we've covered [climate change] it's been a palpable ratings killer. So, the incentives are not great." https://www.cjr.org/special_report/climate-change-media.php

about matters of concern is largely influenced by what stories, framework, and the consistency of retelling those stories that the media is responsible for. The *concerns* that saturate much of corporate media are often tied to money, whether in the form of advertisers or ratings. The disasters of climate change may not be the ratings-grabber that the drama of the White House currently is, especially given that the words "crisis," "extinction," and "existential threat" are often tied to stories about the climate. Money and corporate influence upon concerns is another problem I share with Kerry Whiteside who criticizes Latour's lack of attention on how capital is a large narrative-driver.[5]

One way to pierce the narrative and simultaneously gather the concerned while making others concerned is through activism. Given that corporate media cares about ratings, capital, and controversy more than anything, a large rally, a series of arrests, or a group of children skipping school is one way to get the coverage a certain topic deserves. Going off the success of Friday's for Future, the Extinction Rebellion in forcing the U.K labor party to declare a climate-emergency, and the global popularity of a Green New Deal thanks to The Sunrise Movement, political activism stirs the media narrative while continuing to form the public that I described in previous chapters. In my small opinion, it will be the work of activists and not intellectuals or even politicians and scientists who will help countries transition to greener technologies, new lifestyles, and new sensitives to the public's problems. Which is not to say intellectuals, scientists, or politicians are separate from the activism around the climate crisis, but rather should be joining them. Foucault, De Beauvoir, and Sartre stood on the frontlines with activists, Henry David Thoreau popularized civil disobedience by practicing it, Michael E. Mann and

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[5] Kerry H. Whiteside, *Divided Natures,* "Politicizing Nature," 139.

James Hansen decided to leave the lab and enter the public: I urge my fellow students, academics, and laborers to do the same. This war will not be won behind desks, in classrooms, in prestigious offices, or lecture halls, but outside government buildings, oil refineries, and pipeline projects.

But again, Latour is silent on this role for the collective. He remains too comfortable with the non-controversial distribution of roles, even as he tries to change many of the traditional functions they take. This lack of further distribution for the collective may be due to very practical reasons of time and length constraints, or the more self-reflective of having to acknowledge his own privilege of writing a book presumably with much financial support, comfort, and leisure. As someone who admires his anthropology of science, it would not be a stretch to say he is more than capable of joining those "out in the field."

Besides the lack of detail in the roles of the collective, Latour might risk moving *too slow*. While I admire his opposition to Modernity's steadfast search for all of Nature's secrets, we may be beyond the time period in which a completely democratic ethos will help us mitigate the climate crisis. Meaning, if one take Latour's prescription to its end, we will have to gather all the publics around a single concern. Take the transition to renewable energy. Part of our issue in moving from coal-power to renewable is the slowness of our current political system. Although I recognize the problems some have with renewables like the admirable James Lovelock,[6] many premier scientists advocate for the transition to wind, solar, and hydro—and especially sooner than later.

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[6] See *the Vanishing Face of Gaia* by James Lovelock (New York, United States: Basic Books, 2009).

But by Latour's process philosophy, the work of taking into account (especially consultation) still does not clearly indicate when accounting is to stop. For the most part, I took the work of consultation to be predicated on the issue at hand like in *The Theatre of Negotiations.* I was simply going off common sense about who should be consulted concerning the climate crisis, but common sense about who is consulted is not a good justification. This *end* in when to stop accounting remains the crucial detail missing from Latour's process. In transitioning to renewables, it would seem almost impossible to consult all those who would be affected by the construction of wind turbines, for example. A good economic vision for the transition would ensure that turbines would be built in many states, and therefore around people's homes, near businesses, and in clearing land for the turbines to be installed.

Moreover, because many people do not know the science, the economic problems, or the benefits of a transition to renewables, would we really want to consult climate change deniers, oil lobbyists, or the uninterested and uneducated in this transition? Will the transition to a greener economy happen in the democratic fashion Latour envisions? Or will it rely on the political will of those who are most concerned, educated, and informed about the issues even at the expense of certain attachments people might have? In short, can such an overhaul happen while committing to the admirable version of democracy that Latour envisions?

The aforementioned speaks to a central problem concerning one of Latour's concepts from the *Politics of Nature*: his dedication to matters of concern in gathering the concerned. Although virtuous, Latour leaves the reader wondering *what* concerns are to be taken into account, *how* such concerns are taken into account, and *who* is doing the accounting. Or, to put it in philosophical terms, will it be Platonic kings who "know best" to decide what technologies

our Republic will develop, and over that of the uninformed but nonetheless implicated? This is certainly probable and a worthy criticism of Latour. Latour does not provide any critique of how oppression and repression, for example, can be overcome in gathering the concerned. If the present is any indication, from voter repression to the inequality of educational resources among brown and black Westerners compared to white people, it currently, and for the foreseeable future, will remain those in power, privilege, and historical standing whose concerns are taken into account more than others. Latour's descriptive approach from matters of concern is admirable and a virtue of democracy. We should always be striving for more concerns to be considered. It is just that the world hasn't caught up to "taking into account" *equally*.

It saddens me that I do not fully agree with the democratic vision Latour believes should or will emerge in our time of crises. It will be, if we really want to solve our many ecological crises, the work of those who are engaged in the issues to transform the rich industrial nations many of us live in. Moreover, free-market solutions are not the answer, and any who ignore the big role government will need to take in helping mitigate the crisis has not properly articulated an alternate solution. Democracy will not die during climate change, but it will be necessarily transformed.

However, there is a time where the suspension of democracy is (usually) justified: in wartime. What wartime means beyond just an enemy to attack is the mobilization of countries (or continents) to direct all national efforts and resources towards the war. During World War Two, shoe factories in the US were commissioned to manufacture grenades, women were able to work in-full, all while the United States' federal budget increased from $8.9 billion in 1939 to

$95 billion in 1945.[7] During a "climate war" the mobilization effort would be concerned less with grenades and ammo, but rather, research and development, manufacturing of green technologies, limited consumption (as is common during traditional wartime), adaptation measures— especially for extreme weather, along with a hopeful suspension of other wars in recognition of another common enemy. Given the measures in trying to declare a climate emergency in the U.K and now the in the US, how much longer will it take for those of us to recognize that a complete mobilization effort will be needed to help mitigation and adaptation? War, even for us peaceful kind, may be that answer.[8]

Ultimately, Latour is a very imaginative and, when practically appropriated, useful thinker in tackling democratic, political, and scientific issues when working within all three. What hurts Latour in the end is the lack of detail and practical orientation in his eco-political philosophy—something that I have tried to add to democratic, ecological, and Latourian thought. Having not made these essays much of a critically-directed thesis, I would rather find what is useful in thinking about climate, technological, and environmental problems rather than directing my efforts towards deconstruction or nihilistic hopelessness. I think I have accomplished much of that in these pages, but as anyone who is honest with themselves knows, time will only tell if the efforts I have explored in these pages bring us down to earth or if hoping in the heavens (be it God, technology, Science or the State) remains the dominant

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[7] "World War II Mobilization," *Encyopledia.com,* 2002 https://www.encyclopedia.com/education/news-and-education-magazines/world-war-ii-mobilization-1939-1943.

[8] For analysis on what it would mean to declare a "climate war" see "Is wartime mobilization a suitable policy for rapid national climate mitigation?" by Laurence L. Delina and Mark Disendorf, *Energy Policy* vol. 58 371-380 (July 2013).

narrative. In the end, for most of us, our destiny remains with our fellow humans and nonhumans of this earth. End.

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