2022-01-14

Technology, Heidegger, Craft

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by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

DEGREE OF DOCTOR OF PHILOSOPHY

GRADUATE PROGRAM IN PHILOSOPHY

CALGARY, ALBERTA

JANUARY, 2022

The first part of this study demonstrates how contemporary debates in the philosophy of technology stumble when trying to explain how technology comes to influence human ends. The second part argues that Heidegger's philosophy acts as a corrective on the modern debate through understanding technology as a disclosive phenomenon. That is, it reveals the world to be of a certain character, which Heidegger terms 'standing-reserve'. World-revealing explains not only how technology can come to influence human ends but also the ontological appearance of things in the world. The ontological nature of the problem demands a response to technological revealing that is ontological in character. Heidegger thinks the solution to the problem of modern technology must occur, first and foremost, at the level of authentic thought and language, which he locates in the Greek concept of TECHNE. *In the third part, I argue that Heidegger's account needs supplementation at the level of practical world-building. I forward my own novel response, which advocates for a change at the level of thought and action. I base my response on a return to the roots of* TECHNE *and its association with craft.*

This thesis is an original, unpublished, independent work by the author, Arlin Daniel.

Thank you to Ann Levey and Mark Migotti for your steadfast commitment to this project.

For Wes

TABLE OF CONTENTS

I get angry over the lack of basketry in our lives.

-Alex Langlands, *Craeft*

Chapter 1: Introduction

Imagine a future in which autonomous machines produce almost everything we should want on demand. In this post-scarcity world, the need for work would be dramatically reduced. Philosophers such as Marx envision such a future. Free from drudgery, people would be free to engage in whatever pursuits they should wish: "hunting in the morning" and "criticizing after dinner, just as [they have] a mind" (*cf*., Marx 2000, 16). Doesn't this seem like exactly the kind of future worth desiring? Curiously, the cultural coordinates for these technology-enabled utopias would be bizarro versions of novels such as Kurt Vonnegut's 1952, *Player Piano* and the 2008 film, *WALL-E*. "Technological paradises" in contemporary culture almost always turn out to be dystopian. To paraphrase Margaret Atwood, 'within every dystopia is a failed [technological] utopia' (2011).

That technology is of a salvational character is nevertheless a mainstream mood today. Elon Musk, who some champion as a sort of technological messiah, preaches for the 'renewal of the earth' through electric vehicles, sustainable energy production, battery farms, and other green technologies. Bill Gates seeks to fund technologies that would suck carbon out of the air and use it to produce a carbon-neutral fuel. The world seems to be betting on these future technologies. As Michael Keary points out, the United Nations IPCC (Intergovernmental Panel on Climate Change) relies heavily on as-yet undeveloped technologies—e.g., mass carbon-capture and super-efficient batteries—in drafting recommendations for governments to stave off climate catastrophe (2016, 14). The IPCC's role is to make recommendations to nations based on predicted levels of greenhouse gases. These 'technological change scenarios', in which future technologies will help mitigate greenhouse gas concentrations, figure heavily into the IPCC's calculations. Keary argues that the IPCC puts an incredible amount of faith into the possibility of such technologies coming at the eleventh hour, even if they do not yet exist (14). These approaches, salvational in character, are not so much about creating a technological utopia from the ground up in the spirit of Marx. Instead, they see technology in a reparative light, as able to solve problems that are already here—even problems (such as climate chaos) that were caused by technology in the first place. This places a heavy bet on technology … and would perhaps earn another warning from Atwood.

To borrow a few words from Naomi Klein, many of the same “green billionaires” also paradoxically talk of abandoning “spaceship earth” (2014, 205*ff*.). As the underlying logic has it, the insatiable march of technological progress will inevitably strip the world of resources (although this reason is seldom admitted or perhaps even cognized). For instance, Musk simultaneously extols that humanity must become an interplanetary species, rocketing from planet to planet, forever nomadic, forever plundering. The same logic is contained within Christopher Nolan’s 2014 film, Interstellar, depicting wasteland Earth, stripped of resources: “We’re not meant to save the world. We’re meant to leave it. … Mankind was born on Earth. It was never meant to die here”. Evidently, to some, it is easier to envision terraforming Martian dust than it is to stop the technological exploitation of Earth. This seems an ill fit to the mood of technological salvationism described in the last paragraph, being that there is a silent admission here that technology is responsible for the despoliation of the earth. However, even terraforming Mars and leaving Earth still possess a kind of perverted salvationism, since they are still indicative of a faith in technology’s efficacy—a faith that imagines that technology will rise to the occasion and save humanity. Indeed, in *Interstellar,* the spaceship piloted by Cooper (Matthew McConaughey) takes off from a dying earth at the eleventh hour to save benighted humanity. The similarities to the approach adopted by the IPCC are palpable.

The thought that technology is anything but salvational—but rather, dangerously out of control—has also been present in the popular imagination for some time. The novice mage in Johann Wolfgang von Goethe’s 1797, “The Sorcerer’s Apprentice”, attempts to speed up his chores by animating a broom to mop the floors (1878). The boy proclaims, “I’m now master” (1878). But once put into service, the broom becomes uncontrollable, continuing to fetch water until flooding the chambers. A magic phrase would cease the madness. However, the boy tries to jog his memory in vain until his master returns to put the broom in its place. Many scholars, including Douglas Gerwin, have since seen Goethe’s poem as an allegory for the fact that a technology, once invented, may run afoul of the creator’s best intentions (2013).

Andres Wallgren makes note of contemporary use of the phrase, “Sorcerer’s Apprentice Syndrome”, in computer-science circles (2016). Software protocols can “spiral out of control” and take down entire local area networks, such as that of a company or university (2016). A famous example of this was a debilitating error in the Trivial File Transfer Protocol with the ability to infinitely replicate itself (see Baccala 1997). The protocol was designed to send acknowledgements when it received data packets—and to send the packet again if it was not acknowledged (1997). In the event of a delayed transmission of data, the process would send another packet (1997). When the delayed packet was eventually received, a reply would be generated, creating twice as many replies and sent packets as needed (1997). In the event of many delays, this process would snowball out of control, eventually bringing down the network (1997). In this case, the error was quickly detected and corrected by developers. If there is a lesson here, it is that at least the apprentice has a *master* to whom he can rely on to rein in the broom (or the protocol). While “The Sorcerer’s Apprentice” might serve as a warning to those who would play with fire, it is simultaneously an allegory that indicates at least *someone* holds the keys to the kingdom, whether that be the master magician or the software developer.

Langdon Winner argues that, today, it seems that there is no master capable of reining in sophisticated technologies. In *Autonomous Technology: Technics-out-of-control* (1977, 306*ff*.), he draws an analogy between humanity’s lack of command over technology and Mary Shelley’s 1818 novel, *Frankenstein* (2017).[1] For Winner, once developed, sophisticated technologies appear to operate of their own accord, even influencing social and political relations. The case of Frankenstein’s creature is an interesting one for him because, soon after its creation, Frankenstein abandons his “monster” to its own devices. When Frankenstein finally tries to regain control, it thwarts his every attempt, wreaking a tragic toll on everyone whom he loves. For too long, according to Winner, creators have invented technologies with no thought of how they propel themselves forward … and indeed, become uncontrollable.

Winner cites cases such as the Cold War nuclear arms race as evidence. The threat of atomic annihilation spurred otherwise neutral actors to develop nuclear arsenals of their own. This propelled nuclear research and proliferation forward, despite the very visceral risks to humanity’s future. As Winner argues, once the cat was out of the bag, it was largely impossible to put it back in. Nuclear weapons (and the corresponding "need" to continually modernize a country's arsenal) appear to be here to stay.

Narratives such as Goethe's and Shelley's are noteworthy because they display the two-mindedness of the debate surrounding technology. At once, many burgeoning technologies seem like an unabated boon for humanity. On the other hand, these same technologies may result in great catastrophe. Unlimited "clean" nuclear energy and nuclear winter are two sides of the same coin, one utopic, one dystopic. Due to this seeming dual nature of technology, thinking about it tends to engender the most extreme of reactions, which the literature identifies as *technological optimism* and *pessimism*. The first position claims that technology is the type of thing that can and will solve significant human problems, given enough time: climate chaos, water/food insecurity, economic inequality, to name a few. In contrast, pessimists argue that technologies, especially sophisticated technologies, hinder human progress. In its most severe version, technology runs ahead, suggesting new ways of being utilized that people find increasingly difficult or impossible to resist.

Technological optimism—whether given lip service or not—seems to be winning out at the popular level. People are constantly enthralled by the latest whizz-bang gadget, whether it be the latest smartphone, the promise of self-driving cars, or green technologies. The world seems to be betting the farm on the promise of as yet undeveloped technologies—such as mass carbon capture—that will save humanity from climate chaos.[2] I claim that technological optimism pervades because it is common to think that people set technology's ends. This idea becomes easy to fathom because it easy to separate out the means, the technology, from its ends, its use-cases. This kind of thinking goes hand-in-hand with the idea that technological artefacts (tools and equipment, from nuclear power plants, to smartphones, to rocket ships) are inert instruments. Correspondingly, if technology is inert, there is no such thing as good or bad technology. Rather, the goodness or badness of technology is related to the goodness or badness of the actors employing it. When one combines the optimistic idea that technology can solve serious human problems with the thought that humans are in full control of its use, it is relatively easy to set a goal and "ask" technology to rise to the occasion. This is a seductive ideology, because the faith that believes that technology can be brought up to task (i.e., there is no upper limit to technological progress) means that no problem facing humanity—in principle—cannot be conquered.

Whether one is optimistic or pessimistic about technology, there nevertheless seems to be a *pressure* to view technology through such an either/or lens. In this dissertation, I claim that the rush toward seeing technology as good or bad is a misdirection that keeps one from seeing its nature clearly. As I will develop, one of Heidegger's most important thoughts is that there is a tendency of the nature of things to recede into the background of everyday tasks. That technological artefacts (Heidegger's famous example is that of the hammer) should withdraw from view when engaging in one's projects, I think makes it all the more likely that one may see technology as neutral—as something that can be commanded in order to meet human ends. Consequently, I claim that it is all too common to see technology as merely an *extension* of human dealings: i.e., as being relegated to the ethical level. Under this guise, technology as a kind of thing isn't important; it is what humans *do* with technology that makes it what it is, that makes it good or bad.

Heidegger argues for a third way, one that neither immediately sees technology as savior or oppressor (*cf*., 1993, 330). Technology is interesting, rather, for the way it shapes human possibilities and reveals the character of the world as technological in nature. Heidegger pursues technology in its phenomenological character, studying how it brings the things in the world to light and how its own nature is brought to light or covered up in human dealings. Following Heidegger in finding material for philosophical reflection within the roots and etymologies of words, I pay special attention to the origin of our word 'technology', which comes from the Greek roots, *techne* ("art", "craft") and *-logia* (from *logos*; "account", "explanation").[3]

Aristotle saw *techne* as the creative bringing-forth natural to humans. Whereas nature, *physis*, can bring-forth from out of itself—witness the flower's bloom—humans must utilize the gift of *techne* in order to acquire what they need to flourish. In his continual attempts to provide an account for the phenomenon of *techne* itself—the human mode of creation—Aristotle treats *techne* as something questionworthy and deserving of sustained analysis. In spirit with this sentiment, I argue that the philosophy of technology ought to take technology itself as questionworthy once again.

Modern technology is distinctively troubling: at one level because it pervasively conditions human ends, coming to bear upon an increasing number of one's choices on a day-to-day basis. At a deeper level, technological possibilities condition not only one's choices, but the way the world is ontologically presented to one such that, nowadays, one even "thinks" and "acts" technologically. That is, as Paul Ricœur's work on hermeneutics and metaphor reminds us, the things in the world do not come to one as a series of interpretations to be cherrypicked from (1976, 35*ff*). Rather, the world simply presents itself as *of a character*. The revealing of the world today—I claim following Heidegger—is largely technological in nature. I also argue that a return to a world guided by the lifeways of craftwork, rooted in *techne*, is one potential response to the problem of modern technology's mode of revealing.[4]

Each of the concepts—Heidegger, technology, and craft—in the title of this dissertation illuminate the others in philosophically pertinent ways. Heidegger's important insights are brought to bear upon the contemporary philosophy of technology debate, which customarily stops at ethical discussions surrounding the appropriate implementation of technological artefacts. Heidegger shows that technology is a much deeper phenomenon, which operates at the ontological level of world-disclosure. The pervasiveness of modern technology means that people now come to see the world as conditioned by it in a nearly invisible way. Additionally, his philosophy works in an explanatory fashion to clarify how the modern technological milieu comes to influence human ends, something other approaches—which operate largely *within* the milieu itself—have difficulty accounting for. For Heidegger, modern technology challenges our picture of the world precisely because it has covered up other potential ways of revealing the world that may have existed in the past and could perhaps exist in the future.

Heidegger is fond of repeating a resonant line of Friedrich Hölderlin's:

> But where the danger grows, grows
> The saving power also (1993, 333).

Certainly, humans and technology have always existed together: for what is the stick *qua* digging tool if not technology? … i.e., bringing-forth the world as diggable. Against this background, if modern technology is presently endangering people, then perhaps one ought to look at the origins of technology itself—in craft—to find the saving power. Craft lifeways have their origin in historical craftwork practices as well as technology (*techne)* as it was once recognized by the Ancients (as the human mode of bringing-forth a world). As such, I argue that a potential solution to the problem of technology can be found by investigating the ownmost nature of craft.[5] Adopting the mood of craft brings-forth the world in a way that safeguards against the advances of technological revealing.

With respect to Heidegger interpretation, understanding him as a philosopher of technology brings the existentialist and ontological strains of his thought together into a unified whole, which perhaps makes better sense of his overall philosophical purposes. It is somewhat common to see his earlier philosophy as of a different character than his middle and later. Viewed through the lens of *Being and Time*, it is customary to see him as an existentialist-phenomenological thinker chiefly concerned with human *being* taken in its existential mode as *Dasein*. This view would see him as part of a line of thinkers culminating in figures such as Jean-Paul Sartre. Alternatively, he can be read as an ontological thinker who advocates for "abandon[ing] subjectivity" through a return to investigations of the nature of *Being* considered historically (*cf*., 2008, 231). Read this way, some of his chief contributions to philosophy come in his "destruction" of the established metaphysical canon, the task being carried on by figures such as Jacques Derrida. Seeing Heidegger as a philosopher of technology is a less traveled path. However, it would not be a stretch to understand him this way. His final *Der Spiegel* interview, published only after his death, brings up technological matters some 3-dozen times (Heidegger, 1966). Throughout his middle- and late- career, Heidegger is continually preoccupied with the influence of technology upon the inherited ontological picture of the world (i.e., the phenomenological representation of Being that humans come to operate within), and through this, technology's influence over human affairs, and indeed their very existence.

Pursuing technology within Heidegger's thought additionally illuminates the profoundly practical and worldly character of his philosophy. At one level, Heidegger is concerned with technology because of the way the "technological world" influences human affairs. At a deeper level, however, he is concerned with the way that "technological" affairs have historically come to influence the ontological character of the world. Humans are so much more than passive witnesses to Being as it is revealed to them as world. As the site of the disclosure of Being, it is humans who bring it forward, participate in it, and are co-responsible for its continued perpetuation (and would seemingly also be co-responsible for confronting and challenging a form of world-disclosure that may be deemed problematic, however difficult this may be). The thorny issue of how the world comes to be revealed to humans and how humans can come to resist and transform world-revealing is a topic of sustained analysis in this dissertation.

That Heidegger's philosophy somehow calls for such an active approach might seem textually ungrounded, given his explicit and continued warnings that the appropriate response to the problem of technology is a waiting or preparing for the coming-to-be of a different form of world-disclosure.[6] Indeed, he doubts if contemporary humans are even as yet prepared to wait in the first place: "At best we can awaken a readiness to wait" (Heidegger, 1966). Focusing on *techne* as craftwork highlights a latent possibility within Heidegger's philosophy, namely the possibility of taking up a practical response to technology in the direction of world-building.

Performing a Heideggerian phenomenological analysis of craft (the character of the latter third of this dissertation) is illuminating in that it rescues a craft response from standard charges that can be leveled against such a view.[7] That is, it answers a lingering question about the "pastoral" character of any philosophy that takes craft seriously, such as my own, as well as Heidegger's own approach, which takes as its wellspring the countryside and forests surrounding his writerly hut near the Black Forest village of Todtnauberg: *i.e.*, that it may be of a merely romantic or naïvely bucolic character … a mere yearning for an idealistic rural lifestyle. Instead, Heidegger's response and my own (which takes its impetus from his philosophy but substantially reappropriates it in the direction of craft) are only possible through a deep and considered owning up to the ontological status of the problem of technology in the first place. In other words, both responses arise out of and are conditioned by considering the nature of technology and are not arbitrarily imposed from without.

Viewing craft in contrast to modern technology makes clear the differences between, for example, craft artefacts (i.e., craft tools) and that which belongs to modern technology. If one cannot distinguish between craft lifeways (and the tools that belong to them) and the world conditioned by modern, post-Industrial technology, then one cannot reasonably recommend craft as a considered response to modern technology. As it turns out, modern technology and craft technology do differ in substantial ways, not the least of which is the character of their own discreet mode of bringing-forth a world.

An analysis of technology, Heidegger, and craft belongs together not only for the substantial ways that each aspect co-illuminates the others but for the way that each aspect seems to *call toward* the others. The chapters are delivered in three arcs that run parallel to the three words in the title.[8] In Chapters 2 and 3, I expose certain characteristic deficiencies in contemporary debates surrounding the philosophy of technology. This prepares the way to examine, in Chapters 3 and 4, Heidegger's unique contribution to understanding the challenge posed by attempting to determine the nature of technology. In Chapters 5 and 6, I forward my own original understanding of Heidegger's philosophy and go beyond it in important respects through paying attention to the origins of technology, rooted in craftwork. I conclude this introductory chapter with an outline of the dissertation.

Chapter 2 takes up technological neutrality and determinism. Determinism tries to incorporate both uses and values into technological artefacts and seems like the stronger claim. However, I argue that neither are satisfactory approaches, as they do not come at the question of technology from the right level. That is, they see technology as a collection of technological artefacts and not as a phenomenon in itself. As such, they run into difficulties explaining how technology can come to influence human ends.

Chapter 3 outlines Heidegger's position. Heidegger is a technological determinist, but a determinist of a different sort than the contemporary kind discussed in Chapter 2. For one, Heidegger's version of determinism overcomes charges of anthropocentrism that can be levelled at the contemporary proponent. Heidegger isn't just worried about the determining of human ends, but the *overall determining of the ontological character of the world* (which includes humans). For Heidegger, all technology is united in sharing the same essence, that of revealing or disclosing. However, modern and antecedent technologies reveal in different ways. Modern, post-Industrial, technology's mode of revealing he terms *enframing*. It is the process by which both people and the world are transformed into *standing-reserve* or *resources*. However, Heidegger's description, while perhaps helpful, is toothless if people can easily resist the pull of technology. The last part of the chapter explains, with the help of Langdon Winner's concept of *reverse-adaptation*, how enframing has teeth. Reverse adaptation, at one level, explains how people come to serve technology's ends rather than their own. At another level, it explains how people become locked in, by virtue of existing in technological society, to technological ways of disclosing the world. Using Winner's philosophy gives credence to Heidegger's claim that that technological practice and thinking is *totalizing*. That is, since it occurs as world disclosure, it infects and pervades attempts to "get outside" of it. As such, the technological way of viewing the world is difficult to escape, since technological thinking/practice itself is inertial: It is reinforced by day-to-day ways of thinking and actions—as well as an almost invisible dependence upon it as a matter of course in everyday life.

Chapter 4 recognizes that humanity's relationship with modern technology is problematic in nature. It tries to plot an initial response that recognizes that a proper reaction to technology must occur at the ontological level. I explore an alternative disclosive mode presented by Heidegger called *guardianship*. Guardianship is a practical response to the realization that the world is holy in a secular sense. That is, it is worth protecting in the sense of 'letting it be'. I unpack Heidegger's curious phrasing, which may seem to indicate that one ought to avoid any interference with the world whatsoever. Instead, I argue for an interpretation of 'letting be' in a purely positive sense in which humans are active participants in the world's ontological unfolding. Humans, as the *site* of the occurrence of world-disclosure, are charged with safeguarding the world's revealing. Heidegger locates the wellspring for this change of disclosure from within technology itself, as the reconstructed Greek experience of *techne.* He finds it in its purest form in poetic language and the poetic thinking it engenders. I argue that Heidegger's account requires supplementation at the practical level. Building a new form of world disclosure occurs through *techne* in its active form, recognized as craft.

Chapter 5 returns to the difference between modern and antecedent technologies. To clarify the distinction, I make recourse to Aristotle's four causes, which explain how things are indebted to their world for their coming to be and passing away. Though Aristotle's account is not prescriptive but descriptive in nature and indeed applies to an explanation of every-thing, I claim that craftwork includes those technological practices that preserve and make apparent their relationship to the four causes. What separates antecedent and modern technologies, therefore, are that antecedent technologies are those that wear their relationship with their world on their sleeve, as it were. Heidegger expands on Aristotle's four causes with his own account of how things are indebted to the world for their existence, which he calls the *fourfold*: earth, sky, divinities, and mortals. Another way to think about the fourfold is that it provides a new ontological backdrop, allowing things in the world to show themselves against it. The guardian is the one who protects and brings-forth things in their indebtedness to the fourfold. Aristotle had no need of such an account. The Greek world was already *alive* with a sense of world-as-fourfold in a way that modern technological society is not.

Chapter 6 focuses on the fourfold as it relates to *techne* considered within traditional craft practices. The guardian protects the disclosure of the world as fourfold. And those who practice craft are those who would combine both thought and action to protect this disclosure. A craft-thing's existence is mirror-like. The fourfold, the made thing's world, is written plainly into the way it reveals itself. Its world shields and protects its essence such that it can never be taken as an object of enframing. Since the fourfold itself is made up of things, the world in turn depends upon things for its existence. By protecting things and bringing them forth in the right way, the craftsperson in turn protects the disclosure of the world. Authentic action, the building of a world through craft, concretizes this disclosive ontological picture of the world. In this chapter, I highlight each of earth, sky, divinities, and mortals in relation to different craft practices. I explain how the tools of craft, the circumspective mood of craft, and the made thing—all the elements of craft—bear the fourfold within them. Ultimately, I recommend a potential path forward, at the level of being-in-the-world, that focuses not only on authentic thinking and language, as Heidegger has it, but authentic action as *techne*, as craft. I argue that this is one potential response to the problem of technology.

[1] The novel is narratively distinct from the movies based on its premise.

[2] A Sorcerer's Apprentice version of this is, of course, so-called "global dimming", in which humanity pumps sulfates into the atmosphere, usually through burning more high-sulfate fossil fuels. As other emissions would naturally increase along with this, more high-sulfate fuels would need to be burnt in order to counteract this. This would create a dangerous feedback loop.
[3] As other languages do, English does not maintain a distinction between technological practice (the skills, knowledge, and processes that sustain technological development), the study of technology (e.g., as used in "Institutes of Technology"), and technological artefacts (e.g., hammers)—referring to them all as 'technology'.
[4] I use the words 'lifeworld' and 'lifeway' extensively throughout this dissertation. By 'lifeways', I mean to characterize the norms and everyday customary practices of a particular people: This includes things as diverse as their way of conversing with one another; what they eat; the technological artefacts they employ, how they employ them and are expected to employ them … and so on. 'Lifeworld' is simply the regional or situated world in which all this occurs. Since I never use the terms to refer to anything but the craft life, I mean to distance the modern technological world from these concepts. The technological world is remote in a way that the craft lifeworld cannot be. I discuss this distinction on page 82. It should be noted that Edmund Husserl, Heidegger's teacher, was first to introduce the term 'lifeworld' as a phenomenological concept. However, my usage of the two terms is closer to Goldman's usage of "folkways" contained in "Folkways and Scientific Epistemology" (1993). The terms 'folkworld' and 'folkways' also occur in sociology in a similar way to how I use it here. However, I avoid the term 'folk' for the reason that I wish to avoid making craftwork "folksy".
[5] I avoid the use of 'handicraft' in this dissertation for its association with things such as craft fairs and various fine art movements. As will become clear, I mean by 'craft' and 'craftwork' something far more expansive than what can be done merely with the hands. That said, I continually return to the hand-crafts as paradigmatic examples of craftwork.
[6] A world-historical moment is my preferred interpretation of Heidegger's "Only a God Can Save Us" (1966). This is consistent with other scholars such as Young (2002, 98*ff*.).
[7] It is all too common to rail against technology for turning humanity into robots, stultified dullards obsessed with social media, and so on. So too, it is all too common to then recommend the rejection of this or that technology (or subset of technology such as "internet-related things") as the "key" to achieving happiness, recovering what has been lost, etc. Paul Miller, a tech writer, rather famously rejected technology (smartphones and the internet, but not videogames) for a year out of a general sense of existential malaise with no principled underpinnings other than feelings of being 'burnt out by the internet' and so on. After his journey was complete, he said that, "I'm supposed to tell you how it solved all my problems. I'm supposed to be enlightened. I'm supposed to be more 'real', now. More perfect" (Miller, 2013). He, of course, did not feel any of these things, remarking that, "I didn't want to meet this Paul at the tail end of my yearlong journey" (2013).
[8] Thank you to Mark Migotti for allowing me to see the inherent structure here.

Chapter 2: Technological Neutrality and Determinism

Introduction

This chapter is an exploration of the positions of *technological neutrality* and *determinism*, two standard views in the philosophy of technology today. Ultimately, it points out some weaknesses in both and prepares the way for Heidegger's novel regrounding of the debate, which sees technology as more than a collection of artefacts but as a phenomenon in itself.

Neutrality and determinism are similar in that they recognize that technological artefacts possess use-cases. The debate between the two positions can be characterized as a difference of opinion over the following: the location or source of use-cases; the extent to which people may determine their ends independently of those use-cases; and the extent to which values are attributable to the artefacts themselves or users/developers. The neutrality proponent argues that users determine use-cases. This has two effects. First, use-cases are, in principle, resistible. Second, artefacts are only instrumentally valuable. In contrast, the determinist argues that use-cases are inbuilt into technological artefacts and are motivational in nature (i.e., they hold sway over human ends). Additionally, because use-cases are inbuilt within artefacts, technologies can be said to be good or bad in themselves. Using a series of thought experiments, I argue that the determinist position is vulnerable to attack from the neutral position.

Sophisticated technologies today are everywhere, from the ubiquitous smartphone to background technologies, such as the electric grid, that help to keep society running. It would not be too much of a stretch to argue that humans today "live technologically". That is, modern humans are tied up and in many ways dependent upon (sometimes invisible) technologies to navigate basic facets of life. The extent to which technology influences human ends and affect self-determination is, therefore, worthy of sustained investigation.

Technological Neutrality

'Technological neutrality', better known as *value-neutrality* in the literature, is the claim that a technological artefact's value derives from the ends in which it is put to use. Further, humans fully control those ends.

The first implication of this position is that technological artefacts, considered by themselves, are inert instruments. As inert instruments, they cannot resist how they are utilized. Another way to put this is that "technology is a means to an end"—an end that is fully manipulable by humans (*cf*., Heidegger 1993, 311).[1] For example, it appears that a simple tool such as a hammer just *lays there*. Indeed, a certain kind of hammer is called a "lump" hammer. As a counterpoint, it might be said that many technological artefacts serve as a means toward rather definite ends (even Rube Goldberg machines, presumably, exist to amuse). In other words, there might be a certain inertia or forward-momentum that inheres within artefacts that inclines them toward being used in certain ways. This might be something as simple as the *shape* of the artefact itself. A hammer lends itself to be used with the hands rather than the feet. But a hammer cannot ultimately *resist* foot-manipulation.

Further, as a matter of course, technological artefacts have certain use-case narratives built into them. A framing hammer is designed to drive framing nails into wood framing members. When one purchases a framing hammer, it is most often with its intended purpose in mind. One *could*, if so inclined, acquire a framing hammer to make war with one's neighbor—using it as a weapon. Perhaps this counts as a misuse and might be subject to social censure, but certainly there is nothing about the hammer itself prohibiting this use. On the other hand, some uses are prohibited by virtue of the nature of the object: e.g., using a hammer as a space-faring vessel to ride to the moon. However, this does not speak against neutrality. Just because a tool is inert does not mean that it can be used for simply anything. Other uses, while in principle possible, seem to count as borderline irrational: e.g., using the hammer to make a sandwich—by tearing at the bread with the claws, using the face to spread mayonnaise, pounding the ingredients into a fine paste, and so on.

The use/misuse distinction boils down to, it seems, normative judgments based on group preferences.[2] These preferences, in turn, seem based on familiar versus unfamiliar uses—or convenient versus inconvenient uses. It is both unfamiliar to use a hammer to make a sandwich, not to mention rather inconvenient.[3] Censure aside, there is certainly nothing that bars one from using a hammer to make a poor sandwich. The hammer cannot resist being put to poor use.

The second implication of the neutrality position is that technological artefacts are only *instrumentally valuable*. Something has 'instrumental value' just in case its value is conditional upon the end in which it is put to use. That is, a technology is only good or bad insofar as it is utilized in good or bad ways. One might be tempted to say that certain technologies might be bad in themselves: e.g., a particularly sadistic medieval torture device. However, even such a device, turned upside down, could perhaps be used to aerate one's lawn. Neutrality proponents argue that it is difficult to see how one could imbue an artefact with values other than through its uses. Barring something being cursed, which is another matter entirely, "bad" artefacts are used for bad ends. Even if a creator tries to fashion an artefact in such a way that it can only be used for ill ends, it does not mean that someone will not come along and utilize it another way.[4]

The case of medicine is informative. Medicine—usually a remedy, a good—utilized in the wrong quantities or administered to the wrong person, can become a poison, an evil. That Plato in the *Phaedrus* can begin to imagine writing as *pharmakon*, both remedy and poison, means that this dual understanding of technological artefacts (in Plato's case, medicine) is already present within the Greek intellectual milieu (1997, 245e-245b).[5] What is interesting about the *pharmakon* case is that, in English, the same substance isn't just one thing but *either* remedy or poison. The substance in question derives both its value and indeed, its English name from the use it is put toward.[6] The *use* is doing the work. That is, the *use* is rendering the object good or bad. In contemporary culture, this tack is summed up nicely by Charlton Heston:

> There are no 'good guns'. There are no 'bad guns'. Any gun in the hands of a bad man is a bad thing. Any gun in the hands of a decent person is no threat to anybody — except bad people (1997).

It is commonly rendered, ‘Guns don’t kill people; people kill people’. In a similar fashion, ‘*pharmakoi* do not kill people; people kill people’.

The modern inception of neutrality can be traced back to Marx. His discussion of the industrial factory improves upon the medicine example by showing how a technological artefact—in this case, the industrial factory—shifts its value depending on background political (properly, material) paradigms. Marx is also notable for his technological optimism, which is another important characteristic of many neutral approaches. Industrial technology, for Marx, is a solution to many societal ills. By providing the ability to move past conditions of scarcity, it frees members of society up to (eventually) pursue lives of utopian communist leisure. In other words, it is *through* technology that a society eliminates the drudgery involved in having to provide sustenance for itself. Since through technology is the road to humanity’s “species being”, through technology is the road to happiness (see Marx 1932, 31).[7]

I demonstrate Marx’s position using a thought experiment. Imagine a particular piece of technology as the central axis of a carousel. Further, imagine yourself sitting on the central axis with the mode of technology in your lap. In pie-shaped segments around the central axis, one finds the different modes of production: capitalism, socialism, communism, anarcho-syndicalism, etc. Spin the carousel. As the carousel spins around you, different modes of production come into view. You can hold up the piece of technology and see how the technology will be used in the particular mode of production. For Marx, the use (and therefore the value) of the technology changes as it pivots around inside the different modes of production. The massive factory during the Industrial Revolution is seen by Marx as the site of worker suffering through exploitative labour practices.[8] If the prevailing mode of production were to change, say, to socialism, the workers would collectively become the factory’s owners. Therefore, the factory now becomes a site of workers’ liberation.

The factory remains a constant in Marx’s writings, as both the cause and the cure of society’s ailments. When the prevailing political ideology changes, the worth of the factory to society changes as an on-the-whole evil to an on-the-whole good. As a technological artefact, it remains value-neutral. The use the factory is put toward varies with who controls the factory. Under conditions of capitalism, the ruling class is in charge; under socialism, the workers; under communism, the community. Just as in the medicine example, nothing need change materially about the factory during the process that sees the factory shifting in value: The assembly line remains the same, yet its position in the trajectory in the material reproduction of society changes.[9] What is interesting about Marx's philosophy is the overwhelming faith he places in exploitative "capitalist" technological artefacts being repurposed for liberating ends. In other words, from a lofty vantage, socialism and capitalism do not look all that much different in terms of artefacts utilized. Rather, what shifts is the political paradigm (and the corresponding material background conditions). These are what is conferring the value onto one and the same technological artefact.

While most philosophers of technology focus on the moral value of technological artefacts, Joseph Pitt recognizes that there is a diversity of ends technologies are used for. Unique among scholars, Pitt identifies those technologies that satisfy "cognitive" or "epistemic" ends: "There is a domain of inquiry equally laden with values that is not ultimately moral but rather concerned with the *cognitive* dimension of human life, that is, with those aspects of our lives that are involved in the generation, assimilation, and use of *knowledge*" (2000, 97). Things such as the microscope and the internet both satisfy a cognitive norm to seek out more information and expand one's perception of the world. According to Pitt, they are valuable only insofar as they satisfy those ends. However, their character is still neutral in nature.

One important thing to note about the neutral approach is that it makes it difficult to consider the nature of technology as such, as it usually gets overrun by ethical concerns. This point comes out especially well in the literature surrounding the ethical development and use of new and emerging technologies in the STEM (Science, Technology, Math, Engineering) disciplines and their related fields in philosophy. According to David Morrow, the overall attitude in these disciplines is that "if a technology is used for bad purposes, the blame rests with its users not with the technology itself" (2014, 330). Morrow subsequently defines his "Value Neutrality Thesis" in a user-relative way:

> The invention of some new piece of technology, T, can have bad consequences, only if people have vicious T-relevant preferences, or if users with 'minimally decent' preferences act out of ignorance; and the invention of T can have good consequences,

> on balance, only if people have minimally decent T-relevant preferences, or if users with vicious T-relevant preferences act out of ignorance (331).

Under Morrow's restrictive definition, even including scenarios involving ignorance, the only "ammunition" left to combat technologies being put the bad use is ethical censure.[10]

Pitt argues that, given conditions of neutrality, there can be no alternative. There is no such thing as "*[t]echnology* pure and simple" but rather "automobiles, power stations, even specific government offices" (2000, 10). For Pitt, where there is a concern a technology is associated with bad ends, philosophers of technology should engage in *applied ethics*. That is, philosophical discussions should examine and evaluate the motives of the agents involved in technological practice—but not ask if technology itself somehow motivates people to do things. Given this understanding, the blame, if technology is put to bad use, rests solely on the users.

It might be argued, in contrast, that complex technological systems such as nuclear power plants seem to have inertia and are difficult to say 'no' to once under operation. The expense and difficulty that goes into decommissioning a nuclear reactor makes it seem as though the plant itself determines a given community's ends far into the future. Referencing the closing of the Shoreham Nuclear Power Plant, Pitt disagrees:

> When it is discovered that a given action has produced bad results, [it] is a failure of people, not a property of technology writ large. There is no momentum to technology. At each juncture people must make decisions to continue. Yes, it may be expensive to say 'no more'. … The decision to dismantle the Long Island nuclear plant [out of safety concerns] was brave and expensive. But it is just the sort of decision that exemplifies our ability to control our destiny (2000, 121).

As Pitt argues, it is not that the neutrality position is weaker just because utilizing a technology in a new way or forgoing its use altogether is difficult. One can only imagine how difficult it is to decommission a nuclear reactor—or expensive: Taxpayers, for example, were still paying the bill some thirty years later. But Pitt thinks the fact that it was possible and was done proves his point. In the end, he argues for a responsibilizing of technology's users, whether at the individual or societal level. However, its not as if there is an alternative given the neutral approach. This naturally flows from the separation of means and ends within neutrality: Any discussion of good and bad as it relates to technology must necessarily “pass the buck” onto users—and charge humans with getting technology “intelligently in hand” (see Heidegger 1993, 313).

Crucially, the shifting of the focus of the debate from technology itself to users and developers might not be a good thing. Rather than responsibilizing individuals in the here and now, it tends to push the ethical onus onto an imaginary actor down the line. Thus, there now exists a rash of papers—enough to form their own philosophical cottage industry—that discuss the ethical implementation of war drones by militaries. A JSTOR (2021) search records more than a thousand entries in the last decade. Many papers do not take issue with the drones themselves. Instead, they recommend that command structures, soldiers, and developers overseeing their continued use implement the right training and corresponding moral compass. For example, scholars such as John Williams (2015) do not question the moral dimensions of the drone as such, but rather how to conduct a “just war”, in the classical sense, being that drones are a given. I think the preponderance of papers that consider drones in this way speaks to the academic currency of the neutrality position, whether the authors explicitly acknowledge their debt or not. One finds an analogous case in contemporary business ethics textbooks, which do not inquire after the ethical status and nature of capitalist business as such. Rather, taking the material conditions of capitalism for granted, they instead ask how members (employees, managers, and CEOs) should conduct themselves *within* such a business environment.

This general approach—the approach that operates *within* technology but does not question the technology itself—also has the side-effect of not holding scientists and other developers accountable for creating dangerous technologies (war drones, viral bombs, bots that write fake news stories). Since the blame rests on users (only bad governments use war drones indiscriminately) and the technologies are neutral, developers are off the ethical hook, as it were.

Technological Determinism

The mirror of neutrality is *technological determinism*. This position claims that technologies can have inbuilt ends, which I call *use-cases*. And furthermore, these use-cases are motivating. This has the implication that technologies are, in the words of Deborah Johnson, "infused with values" (2009, 41). As before, this position still derives value from the ends of the technology in question, but now the ends are contained within the technology itself as a precondition. Therefore, now it is possible to claim that a technology is good or bad in itself. In response to Charlton Heston, since guns have inbuilt use-cases that motivate people to use them in bad ways, *guns are bad*. There can be no such thing as a society full of responsible gun owners. (Admittedly, this formulation is perhaps not as catchy as Heston's version.) Below, I introduce and examine the determinist position—as well as point out some ways that it is vulnerable to the neutral position.

At first, neutrality and determinism may be united in terms of their opposing estimation of one factor: *resistance* to technology. For neutrality proponents, technologies are resistible *in toto*. Humans control the aims of technology. Insofar as technology is used for ill ends, this can be solved either by addressing the moral character of individual users or perhaps by addressing a larger collective-action issue. For determinists, the pull of technology is nearly, perhaps totally, irresistible. To be more precise, it is the use-cases of some technologies that are impossible or nearly impossible to resist. For this reason, determinist approaches tend to be pessimistic in character. On the one hand, technological artefacts may be deleterious insofar as it is difficult to resist their pull on one's ends. Here, the character of certain technologies as "difficult to resist" is what is doing the work. On the other hand, it may be that one is forced to deal with technologies on a day-to-day basis that are of a deleterious character. Since their motivating use-cases are "bad", one is locked into engaging with them in that mode.

This is all the more unsettling because Langdon Winner (perhaps the single-most important philosopher of technology other than Heidegger) notices that use-cases propel people forward and suggest new possible uses in a continual process of expansion (1977, 18-19). He discusses how this works in a somewhat dated example:

> One needs to do a lot of business on the telephone before conceiving of the need for a fax machine. One needs to drive a lot and simultaneously to call many people before needing a car phone. … Already their proliferation changes the way communication is conducted.
>
> The device turns back upon us and suggests new intentions, propelling its usage forward in time and towards more complex applications. This is what we like to call progress (18-19).

It is philosophically uncontentious that technologies have use-cases built into them. As noted above, the framing hammer has specific uses as part of the kind of thing it is. That's why they make different kinds of hammers. And that is why, for example, one might find it on a construction site or the aisle in a hardware store with other related building tools. However, in some sense, the hammer does indeed "fight" back against using it the wrong ways. One makes a bad sandwich with a hammer. To this end, that technologies have inbuilt use-cases is trivially true.

But can it be said that a hammer *must* be used in such and such a way? Plainly not. Someone can indeed use a hammer to butter her toast. This would seem to speak against technological determinism. Perhaps, however, it is only *some* technologies that influence ends in a *strong* way, while others influence *weakly*, if at all. I think this is why it is common for contemporary determinists to focus on specific (particularly post-Industrial) technologies that are problematic: David Morrow, for example, focuses on large-scale fishing vessels as exacerbating overfishing (2014, 336-7) [11]; Johnson focuses on specific forms of Information Technologies (IT) such as social networks, email, and online encyclopedias (2009, 20*ff*., 175*ff*.).[12] To make the point clearer, I now take a classic example that's been there since the beginning within Heston's remarks.

An apropos topic today is the outfitting of police departments with military-style combat equipment: armored personnel carriers, assault rifles, tear gas cannisters, and grenade launchers. Along with this, police officers now learn military techniques associated with the employment of such technology: command structures, weapons training, martial arts submissions, and military combat formations. When an officer is given an AR-15 assault rife, she requires the appropriate military-style training in the use of that rifle. One could argue, in a sort of "why not" scenario, that learning to use a combat rifle effectively suggests that one should also learn how to employ other military techniques. This is consistent with Winner's definition of "progress", where the utilization of technologies propels forward and suggests other intentions, which would not become apparent without the use of that technology in the first place.

As has been well-documented in a wide-ranging study authored by Casey Delehanty et al., the use of these technologies and techniques to police effectively limits the range of responses United States' police officers employ when dealing with the public (2017). David Ramey et al. come to similar conclusions (2019). Delehanty et al. call this the "militarization" of possible responses, which is "the embrace and implementation of an ideology that stresses the use of force as the appropriate and efficacious means to solve problems" (2017, 2). As Ryan Welch and Jack Mewhirter, coauthors, say elsewhere: "Militarization makes every problem … look like a nail that should be hit with an AR-15 hammer" (2017).

Importantly, Delehanty et al. take the development of increased militarization to coincide with the increased use of military equipment by police departments (2017, 3-5). They consider that it might be argued, as a counterpoint, that perhaps the general public has gotten more violent in recent years (5). The increased use of force by police departments is merely a response to this threat. To this, they counter with statistics from The Puppycide Project, which tracks pet/animal killings by police (5). They find that increased use of military equipment corresponds with "an order of magnitude" increase in the number of dogs killed per year (5).

This suggests that the militarization hypothesis is true: increased use of military technology corresponds to an increased use of forceful military-style responses by police officers. This lends credence to the determinist claim that, at least in the case of police departments, it appears as though the increased use of military technology transforms the *ends* of departments into militarized ones. This suggests further that it is the militarized use-cases of those technologies which are motivational here. Assault rifles, as the kind of thing that they are, are for shooting at one's enemies. And like other forms of military gear, their use-cases are consistent with the application of violence towards an enemy. Correspondingly, it might be said that the use of military equipment in police forces motivates police officers to respond to situations—which in the past, for example, might have been dealt with through communication or other forms of nonviolent de-escalation—as though they were situations involving enemy combatants.

However, there are several weaknesses to the determinist position. A key weakness is that it allows the neutrality proponent to dictate the rules of the game. The neutrality proponent insists on the separation of a technological artefact's means from its ends, its uses. The determinist must, in turn, insist on keeping means and ends united. However, the determinist position is easy enough to counter. Humans, after all, *misuse* technological artefacts all the time. Hammers can be used to make sandwiches. And it is somewhat common for comedy bits to use guns in non-violent and humorous ways—say, to shoot the cap off a beer bottle; to scratch one's genitals; and so on. It is also easy enough to insist on what might be called 'causal indeterminacy'.

Employing *causal indeterminacy* can be used to avoid the charge that the technological artefact in question is what is used to achieve the end in question. A version of this is Heston's, 'guns don't kill people…', where humans are the ultimate causal terminus to which one traces the act of killing. An article written by the satirical website, *The Onion*, traces a similar line of thinking in relation to fictional death of a teen by another teen. A fictional gun-rights activist, Ted Farner, reasons thusly:

> Sure enough, … another youth aimed his gun at this boy and pulled the trigger. This action, gun experts will tell you, caused a precision-machined steel hammer to strike the primer of a 9mm cartridge, igniting the smokeless powder within, propelling a 138-grain bullet down the pistol's barrel and into the woman's son. The gun never even came within 10 feet of the kid. The only thing the gun was guilty of was functioning properly.
>
> …
>
> In all my years of fighting for the cause of gun rights, not once have I ever come across a case of a gun killing a person. In every instance, the real killer has been the bullets that come out of the guns. So if you're going to insist on pointing fingers, point them at the bullet makers.

> Okay, admittedly, there is the occasional pistol-whipping victim who never regains consciousness (Farner [pseud.], 2002).

The above, though humorous, highlights the difficulty of pinpointing the cause of the boy's death. The text underscores the causal nature of the bullet, the other teen, the gunpowder, the firing pin, and so on. Analogously, in a fictional police-shooting scenario, was it the police officer's military training which caused her to illegitimately shoot a "suspect" or was it the *gun* itself? Importantly, all things being equal, it seems plain that in the absence of the gun, she would have used some other method to subdue and perhaps kill the person in question—given her previous combat training and her general militarized outlook toward the public. It is common for militarized police forces to punch and kick "suspects", as well as use methods such as kneeling on the back of the neck. As seen in recent years, this is a deadly practice.

One might argue that this is playing fast and loose with what guns do. Guns kill people. They intrinsically see people as targets. But the pseudonymous author, Farner, brings out something important: Who dictates the use-cases? Elsewhere in the article, he satirically makes the point that guns ought to be bought and stored exclusively by collectors for *ogling* (Farner [pseud.] 2002). This is akin to the collecting of luxury items to impress one's neighbors at dinner parties. 'My barrel is so highly polished; you can see yourself in it!' … and all that. Ultimately, if the gun's use-cases become altered in a fundamentally different way—as collector's items, then it seems as though the determinist could not balk.

Here is a stronger example: On the face of it, it seems that if sophisticated technologies are developed to work in such a way so as to not influence ends, or perhaps to take individual responsibility out of the equation altogether, determinists should again have no cause to balk. For example, imagine a gun with a special "shoot/don't shoot" software algorithm built into it. It only shoots when *exactly* appropriate to shoot. Police might, therefore, shoot only when socio-cultural norms or ethical attitudes dictate that it is appropriate to do so. Otherwise, the gun remains "locked". Furthermore, it is so sophisticated it never makes mistakes. It seems unclear that the determinist would have any cause to object to this example. The use-cases of the gun, which previously made *anyone* a potential target, are no longer on the table. It can no longer be shot when inappropriate to do so.

The determinist may think, nevertheless, that *the gun itself is still determining the officer's ends*, since it is telling her, importantly, *when* she can and cannot shoot. But in a peculiar way, even this seems to speak against the determinist position. By insulating the gun from the individual officer's ends, the gun can only be put to "good" use. In this case, it is not the gun itself that is determining the ends. Rather it is the *pre-programmed* software (in which are recorded socio-cultural norms and ethical standards) that is determining the officer's interaction with the gun.

Furthermore, if it is the killing of humans that the determinist disagrees with, then the algorithm can be restricted so that guns are only used for hunting purposes, or target practice, or what-have-you. Therefore, it is ultimately *humans* (as the neutrality proponent would have it) who control the technology in this scenario. The determinist position seems on unstable footing.

At last, I can picture another plausible future scenario akin to the one mentioned in the introduction. Once more imagine a fully-automated luxury communist utopia. In this post-scarcity vision, automated machines invisibly operate in the background of a life of leisure. They seamlessly provide all the necessities and luxuries one could imagine. People may pursue whatever sorts of activities they see fit. The ends they dedicate themselves to may be varied and pleasurable. The determinist, presumably, would be well-pleased with this future scenario. As Heidegger says (disparagingly), humans have gotten technology "in hand" and to their benefit (*cf*., 1993, 313). The *right* kinds of technology are not dominating anyone's ends. Instead, technology is allowing ends to flourish. Presumably the right kinds of technology are the ones that enable one's ends to be so varied and pleasurable. And this is a common enough position—with some modification—in Marxism. It seems that the issue, for the instrumental determinist, *cannot* be with technology itself if, in principle, technology can be gotten 'in hand' such that it allows the flourishing of ends. Indeed, technology may even be beneficial to these goals, as the post-scarcity world makes all freer to pursue their ends as never before.

Thus far, it seems that the determinist position is vulnerable to the neutral one. Specifically, it seems difficult to keep means and ends united in technological artefacts. Fighting this conception, Deborah Johnson argues that technologies are "infused with values"

(2009, 97). For her, it is these values that are perhaps not just motivating but *constraining* people/society to use these technologies in certain ways. To this end, she asserts that many technologies act as repositories for the values of the developer. These can reflect the values of society but need not.

She draws on an example that Langdon Winner uses in his early paper, "Do Artifacts Have Politics?" (Winner 1980; see Johnson 2009, 40).[13] Winner uses as an example a project of the New York architect, Robert Moses, "the master builder of roads, parks, bridges, and other public works from the 1920s to the 1970s" (1980, 123-4). Moses designed a number of bridges traversing Long Island. The bridges, as Winner points out, "are extraordinarily low, having as little as 9 feet of clearance" both under them and to their onramps (123). What this does, in effect, is bar buses from accessing the bridges and roads beneath them (124.). As Winner writes,

> Automobile owning whites of 'upper' and 'comfortable middle' classes, as [Moses] called them, would be free to use the parkways for recreation and commuting. Poor people and blacks, who normally use public transit, were kept off the roads because the 12-foot tall buses could not get through the overpasses (124).

Public attractions such as beaches, also designed by Moses, were inaccessible to people he deemed unfit to enjoy them. Depending on your view, this either encoded Moses' class and racial biases into the architecture of Long Island, or the biases already operant in society merely operated *through* Moses. Johnson's point is that technologies have values encoded to them. She therefore argues for a "thick" view of technological artefacts and asserts that technologies are value-laden. One may grant that it appears as though within the bridges are encoded systemic class/racial biases. Just as in the workings of the Industrial Revolution factory, capitalist values are similarly encoded. Time punch-cards concretize the capitalist concept of 'abstract time' that cares not for the diurnal cycle, rain nor shine, and so on. Class conditions, too, are reflected within the physical structure of the factory itself: The overseer's office looms large above the proles, surveilling them and ensuring diligent servitude. For Marx, this certainly does not stop the trajectory of the factory changing under different ideologies. In other words, elements of the factory may change under different social paradigms (perhaps idealized socialists would have no use for punch cards)[14] but the material functioning of the factory would not change—only its good to society, its value, would change.

In the same vein, one should be able to see the embedded values of the Long Island bridge change depending on the structure of society and other material conditions. If buses were to become low-slung and snake-like, the bridge would not pose such a barrier. So too, if people in disadvantaged areas were given bicycles and bike lanes were painted, again, the bridge would not pose such a barrier. This might even be a boon, encouraging healthy lifestyles.

Johnson herself realizes this: "The social arrangement was produced by the combination of the height of the bridges, the size of the buses, the pre-existing social arrangements, and ideas about race and social hierarchy; a change in any one of these might have changed the result" (2009, 23). Indeed, a change in any one of these today can change the moral "valence" of the bridge again. In other words, the values encoded in the bridge would change. But this does not make Johnson a neutrality proponent. Johnson argues that if a technology is *really* viewed as value-neutral, then "it is not exactly the technology that poses ethical challenges but rather the uses of the technology, that is, the humans and human behaviour around the technology" (23). In contrast, the determinist point Johnson is trying to make is that, once established, it is the *bridge itself* that comes up against everyday citizens and poses ethical challenges—as an artefact that is designed in a particular way to exclude certain populations subsets. Accordingly, the bridge, due to its physicality, cannot be value-neutral. However, Marx surely believes that the design of the capitalist factory poses "ethical challenges"[15] in its design (e.g., the overseer's office and punch cards). And which member of the class-conscious proletariat would disagree? He nevertheless asserts that its nature in regard to value can change from an on-the-whole bad to an on-the-whole good, should the background assumptions of society change.

I think one difficulty leading to the crosstalk between Johnson and the neutralist is unclarity surrounding the bridge/factory as artefact *qua* artefact with how it presents itself under certain social or material paradigms. There are two frameworks from which to view the bridge/factory. The first way sees the technological artefact as embedded within a given society. Here, for Johnson, it is value-laden. The second way sees the technological artefact as it *could* exist, independent of social/material conditions. Here, and this is perspective that I think Pitt is coming from, the artefact cannot be *ultimately* value-laden in Johnson's sense, since the value-ladenness is coming from the background conditions. These background conditions cause the bridge to be *used* in a new way. The same artefact, given different social/material background conditions (such as free bicycles), could be said to be embedded with *different* values. In each case, the embedded values can change depending on the background paradigms. Beyond perhaps disagreeing upon the difficulty with which it is possible to change such paradigms, I do not think Johnson and Pitt have a lot to disagree upon.

The second difficulty is in regard to unclarity between use and value. The bridge is being *used* in such a way that it disadvantages a certain sector of society. Crucially, I do not think values can be "infused" within an artefact, as Johnson has it, *without* making reference to its uses. If the bridge were nefariously concocted, but then simultaneously and serendipitously, snake-like buses were invented and there were free bicycles available for everyone, the creator's intention to exclude people based on class/race would have *never* been realized. What could be conferring the value other than the way the artefact in question is used? One perhaps could say that Moses is conferring the value, as the author. But one can imagine a parallel case where the creator of the sadistic torture device was immediately hit by a bus. Meanwhile, somebody comes along and uses it solely to aerate her lawn. Simply, its unclear that the bridge could be "bad" if it was never used—not once—in a bad way.

Beyond Determinism and Neutrality

David Foster Wallace, in a commencement speech to Kenyon College graduates titled "This is Water", paints the classic story of big fish and little fish (2005). Simply, big fish says to little fish: 'This is water'. Little fish responds, 'Huh?'.

Pitt's position, which says that there is no such thing as technology as such, but only planes, trains, and automobiles, is akin to little fish. It ignores the fact that humans live *inside* an increasingly technologized world in which almost everything they depend on is conditioned through engagement with sophisticated technologies. Modern existence is sustained by vast networks of technology: from agricultural systems that precisely control inputs and outputs to put food on the globe's plates, to the mining and extraction systems that unearth the raw materials needed to produce every device utilized on a day-to-day basis. The reverberations from technological exploitation of the world are now felt worldwide. For example, the planet now witnesses a globe-spanning pandemic. One of the first hypotheses forwarded by the United Nations and the World Health Organization was that deforestation caused by agricultural and extractive clearing of habitats may have contributed to the virus's original development (Carrington 2020). Even if this hypothesis turns out to be untrue, by increasing the interaction between humans and wild animals, this trend may cause a later pandemic. Paradoxically, the continued use of sophisticated technology is what will allow humanity to "prosper" in the future, presumably by tackling those contemporary problems, such as pandemics and climate change, that were brought about through technological manipulation in the first place.

Both technological neutrality and determinism suffer from an inability to see the "water" in which everyone swims: the modern technological milieu. By separating means and ends, the neutrality position has no choice but to responsibilize users, since technology itself is seen as an inert tool. If people are sleep deprived, for example, it is because they do not have the good sense not to use their smartphone before bed. If guns kill people, then people need to stop killing people. The determinist takes issue with technology insofar as it influences ends. These ends might even be designed into the fabric of the artefact itself, as in the case of Winner's/Johnson's bridge example. However, if the "right" technologies are developed, such as the gun that only fires when appropriate to do so, the determinist should offer no objection. This is not to say that technologies that currently influence ends in a very palpable way (the Long Island bridge quite literally bars many poor and racialized people from taking the bus) could not change their "moral valence" should social/material background conditions change. Additionally, the determinist must unite ends on a per-technological artefact basis. Guns go with seeing people as targets. Drones should be used for pizza deliveries, not delivering missiles. And so on. The determinist treats technologies as their own island, since their endgame must be to adapt or choose technologies that are less dominative of ends.

However, the determinist could go a different path. Some determinists class technologies together, arguing for their elimination or readaptation. A recent topic is the elimination or readaptation of fossil fuel technologies. Some go so far as to say that if the world rids itself of fossil fuels, this will somehow crack the nut of technology's hold upon human ends—as though it were just fossil fuel technologies that were the culprit all along. This utopian vision is found in Andreas Malms' *Fossil Capital*, which argues that the elimination of fossil fuels will simultaneously end capitalism's hold upon the world (2016). As Troy Vitesse comments, "Fossil fuels tend towards [capitalist] individualism in the same way that renewables are perhaps communal. Malm makes it clear that green capitalism is an oxymoron" (2016). One implication here is that while fossil fuel technologies are dominative of ends (they "cause" one to be caught up in capitalist structures), green technologies are not. But I think that if Naomi Klein's *This Changes Everything* (2014) has taught anything, it is to beware the "green" capitalist. Elon Musk and Richard Branson have had no problem making billions off of the promise of electric vehicles and planes, respectively. These problems cut across political paradigms and the use of different kinds of modern technological artefacts. This might be a clue, I think, that modern *technology* as such might be at the root of the problem.

Martin Heidegger offers a solution by viewing modern technology as a totalizing phenomenon. He argues that the world is now so thoroughly technological that people no longer have the coordinates to make meaningful decisions about the ways in which they use technology. That is, people may only select from choices inherently technological in nature: The shift from fossil fuels will require the "greening" of energy systems, but new energy systems such as solar panels are just as sophisticated, if not more, requiring the same high-level of infrastructure and monitoring as before. Not to mention that society is just as dependent upon them. It may seem absurd to demonize green technologies, and I do not attempt to do so. What I do hope to do is ultimately show that what is ill-considered in modern life is the nature of technology as such. And insofar as green technologies are part of the modern technological world, they share a common essence with all other modern, post-Industrial, technologies.

What Heidegger does is position the philosophy of technology on proper footing. That is, the philosophy of technology should, first and foremost, interrogate the *nature* of technology itself. All technology for Heidegger is fundamentally a form of disclosing or revealing the world—like a lens. Heidegger distinguishes between what I call, imperfectly, antecedent and modern (post-Industrial) technology. He argues that modern technology—not just in the form of technological artefacts, but through a kind of pervasive “thinking technologically”—functions as an encompassing or totalizing phenomenological lens through which people view the world. Just as Marx argues that capitalism reveals both the world and humans to be, at different times, capital or commodity, Heidegger argues that the essence of technology itself is also a form of revealing. Modern technology reveals the world as ‘standing-reserve’: resources, stock, calculable regularized units, and so on. Even seamless and invisible background technologies that treat the world as resources would still be objectionable for the reason that they cover up the essences of things in the natural world. Solar panels and wind turbines treat the energies of the sun and wind as gatherable, storable, transferable, and ultimately exploitable *as* pure energy. And this is what sets Heidegger apart from other scholars such as Malm.

Heidegger’s position is ontological in nature insofar as he argues that both the *being* or *essence* of humans and things in the world gets covered up by modern technology’s totalizing form of revealing. And Heidegger spends his middle- and late- career charting a path that might lead to the recovering of a more originary revealing, which he finds in poetry and authentic thinking—and I find in craftwork. If one takes Heidegger seriously, and I do, then the question of technology becomes substantially pricklier: Communities cannot just identify a few technological artefacts that are harmful and eliminate them (assault rifles, war drones, fake-news bots, etc.). Instead, ways of thinking and acting must be relocated—and a way of disclosing the world through, presumably, *other* technologies that do not reveal the world as essentially composed of exploitable resources must be uncovered.

[1] Heidegger ultimately disagrees that this is an adequate estimation of technology. However, this assertion had already enjoyed currency for some time before Heidegger began writing his 1954, "The Question Concerning Technology" (1993, 311). In fact, Heidegger takes it as the default stance in the literature. (Indeed, the stance is still the "default" today.) Heidegger's familiarity with the position is probably owing to his familiarity with Collingwood's 1938 work on technology and art. He was likely introduced to Collingwood's work by way of Hans-Georg Gadamer, Heidegger's student.
[2] Thank you to Mark Migotti for the suggestion for this paragraph.
[3] Familiarity and convenience might not always overlap. The wearing of high heels is surely inconvenient for the wearer in terms of body mechanics, but it is a familiar use of the artefact.
[4] The postmodern debate over authorial intent and its implications for the meanings derived from textual exegesis is a parallel case.
[5] See Derrida (1981) for probably the most important analysis of Plato's passages here.
[6] Most often, the "approved/good" use is coextensive with the preconceived design of the product: medicines cure and poisons harm. When a thing switches its name, it is often because the designed use changes: e.g., when the anticoagulant warfarin is used on rats, it is called rat poison; when it is used on humans, it is called heart medication.
[7] It is very striking that the utopian craft life consisting of hunting, fishing, etc. that Marx so desires is only enabled after society adopts an incredibly sophisticated background technological infrastructure.
[8] Workers are reduced to what Heidegger in the next chapter will call "standing-reserve"—or, as Marx has it, a mere pool of brute "labouring power" (Heidegger 1993, 322; Marx 1969, 19). Any wages afforded the worker only serve as "necessaries to bring up a certain quota of children that are to replace him on the labour market and perpetuate the race of labourers" (Marx 1969, 19). The continual reproduction of the proletariat as a whole exists simply to perpetuate the productive forces of the factory (19).
[9] The factory must be an inert instrument for Marx. Formally, it does not play a role in the shift from socialism to capitalism—since the class tensions must be created by material conditions. The factory cannot create the material conditions, because once the society has moved onto a different political paradigm, the functioning of the factory remains the same: e.g., It still produces textiles, etc.
[10] Marx would, of course, agree that the proletariat has more than censure at its disposal.
[11] Morrow argues that if one thinks about technology use from a game-theoretic perspective, this issue becomes tractable (2014, 337-9). For Morrow, it comes down to the "costs" associated with using different technologies. And it is these costs that are motivational. For example, say you own a small fishing vessel from which you are able to catch a few fish a day. In this way, both you and your similarly equipped competitors do not deplete overall fish stocks and stay within the means of the ecosystem. Imagine a competitor employs a larger vessel with drag nets or longlines. The sophistication of the vessel's technology allows her to vastly outcompete you, to the point of potentially overfishing and depleting fish stocks. Morrow argues, using a game-theoretic approach, that you in turn have incentive to employ a more sophisticated vessel yourself: essentially in a race to harvest as many fish as possible before the jig is up, so to speak.
[12] Johnson herself attempts to chart a path between neutrality and a form of historical determinism espoused by philosophers such as Heidegger. To this end, she ends up at perhaps a softer version of the contemporary determinist position outlined in the first paragraph of this section.
[13] Winner uses the example to a different effect, which is why I focus on Johnson's interpretation. By 1977, when Winner wrote *Technics Out of Control*, he surely comes to the conclusion that there are far less mutable technologies that come to influence society than bridges (e.g., vast technological networks such as power grids and the extractive industries that support them). I explore his position further in the next chapter.
[14] However, real socialists still did employ punch cards.
[15] He would not quite phrase it this way.

Chapter 3: Disclosure, Enframing, Reverse Adaptation

Introduction

The debate between neutrality and determinism in the preceding chapter can be restated as a differing of opinion over how motivation relates to technological artefacts. The former locates it within human actors, while the latter locates it within the artefacts themselves.

Heidegger adopts neither position but seeks to reground the debate, approaching it in a more philosophically fruitful way. He locates the motivational source within the nature of modern, post-Industrial, technology itself—taken as a mode of world-disclosure. Since the world is continually revealed in a "technological" way, it is difficult for one to "get outside" of it through imagining or pursuing different possibilities, whether in thought or action. In this distinctive way technology shapes our ends, rough hew them though we may. It is not as if people are not given choices in life. Rather, these choices are selected from those already conditioned by the technological milieu. For Heidegger, what is concerning about these choices is the way they perpetuate a perspective that comes to understand both humans and things in the world as brute resources.

While Heidegger fits neither position cleanly, scholars such as Deborah Johnson describe him as a "historical determinist", being that he agrees that technology, in an expanded sense, is determinative of the overall character of human ends (2009, 15). Additionally, he has in common with other determinists that he is pessimistic toward our association with modern technology. His position, therefore, fits better within the determinist umbrella.

This chapter has 3 main sections: Disclosure, Enframing, and Reverse Adaptation. The first section argues that the contemporary philosophy of technology largely rests on a mistaken assumption: that what is important to investigate about technology are technological artefacts (e.g., self-driving cars, vaccines, nuclear power plants), their implementation, development, and practical or moral use—*and not the nature of technology itself*. In light of this, I develop

Heidegger's position in response to and as a corrective upon the general tenor of the contemporary debate.

In the second section, I forward Heidegger's position explicitly. I describe how modern, post-Industrial technology discloses the world as resources or stock to be exploited, distributed, and used up—what Heidegger calls *standing-reserve*. The disclosive process through which the world comes to be understood as standing-reserve, Heidegger terms *enframing*.

I then look at a potential counterargument: It might be argued that contemporary technology is enframative in character, yet nevertheless still neutral: i.e., One could simply reject those technologies deemed enframative and adopt others. I argue that it is difficult (and for Heidegger, nigh impossible) to *resist* the pull of contemporary technological disclosure upon human possibilities. Similarly, for reasons mentioned, it is difficult to resist the disclosure of the world in non-technological ways. As Heidegger argues, enframative disclosure is *totalizing* in that it comes to range both over ontological conceptions of humans and the world itself. This silences alternative conceptions that would come to see humans in more robust or authentic ways.

In the penultimate section, using the language of Langdon Winner (1977), I argue that technology is *reverse-adaptive*. That is, by participating in contemporary society, people implicitly opt into a series of commitments that they did not necessarily choose to accept in a conscious way, yet nevertheless must adhere to just by virtue of being born in a technological world. In a more precise way, 'reverse-adaptation' is the way humans come to adjust their ends as well as their picture of the world to align with that of technology's. I highlight the ways this occurs in thought, language, and practice.

In the final section, I take the deleterious effects of technological disclosure seriously and pose a few preliminary ways one might respond to the deep problem of technology.

Disclosure

Technological determinism as espoused by Heidegger and other European philosophers is largely not taken seriously as a philosophical stance today. However, the philosophy of technology, as a discipline that was developed in the middle of the 20th century, began as a determinist in nature. Heidegger's philosophy acts as a corrective of a few issues that are operant in modern philosophy of technology debates, namely the bias towards seeing the potential "good" in every technological artefact and the bias toward seeing technology as not questionworthy in itself.

As Franssen et al. note in the *Stanford Encyclopedia of Philosophy*, debates in the modern philosophy of technology primarily focus on three areas: (1) the goodness or badness of individual technological artefacts or practices [war drones, artificial intelligence, self-driving cars, stem-cell research, social media, etc.] and what can be done to mitigate or improve upon their effects; (2) issues of applied ethics in sub-science disciplines such as engineering and artificial intelligence; and (3) ignoring ethical issues but building on philosophy of science to tease out successful ways of developing new technologies or epistemological methods that speed up technological discovery and design:

> Despite this diversity, the development in the second half of the twentieth century is characterized by two general trends. One is a move away from technological determinism and the assumption that technology is a given self-contained phenomenon which develops autonomously to an emphasis on technological development being the result of choices (although not necessarily the intended result). The other is a move away from ethical reflection on technology as such to ethical reflections of specific technologies and to specific phases in the development of technology. Both trends together have resulted in an enormous increase in the number and scope of ethical questions that are asked about technology. The developments also imply that ethics of technology is to be adequately empirically informed, not only about the exact consequences of specific technologies but also about the actions of engineers and the process of technological development (Franssen et al. 2018).

Current debates occur already within the milieu of technological practice, and they take the current technological paradigm largely for granted. That is, they only ask questions from *within* the paradigm—not *about* the paradigm. The first tack asks what tweaks can be made to make individual technologies more ethical along some measure. The second tack embeds itself within technological practice and asks how engineers/developers/users can act more ethically with the technologies they develop or employ. (As such, neutral stances are common within this sub-discipline.) The third tack seems to assume that the philosophy of technology should aspire to be the handmaiden of STEM departments. This dissertation goes another direction.

I suggest that recent discussions in the philosophy of technology, both on the neutral and determinist sides, rest on a mistaken assumption. This assumption is the idea that the philosophy of technology, as a discipline, should no longer pursue the question, '*What is the nature of technology as such?*'—but ethical questions surrounding the development, implementation, and use of individual technologies. These questions take technological practice for granted, and are therefore, regional or applied philosophical disciplines.

I argue that debates surrounding these topics should properly be understood under the problematic of technology *as a phenomenon itself*. As Heidegger says,

> Modern technology is not constituted by, and does not consist in, the installation of electric motors and turbines and similar machinery; that sort of thing can on the contrary be erected only to the extent to which the essence of modern technology has already assumed dominion. Our age is not a technological age because it is the age of the machine; it is an age of the machine because it is the technological age (Heidegger 1968, 24).

In other words, it is a mistake to focus on *kinds* of technology and/or this or that technological implementation rather than technology and what makes it special as a *kind*. For example, the introduction of a modern technological artefact to a historical community (e.g., a smartphone) would not therefore render their world inherently technological. The machine itself is not technology as such, but an artefact within a world already understood technologically. The character of this world should be at issue. Each approach above makes a fundamental error in determining the nature of technology.

An analogous error is discussed in *Being and Time*, where Heidegger claims that the proper realm of ontology is not at the level of entities but with Being as such (1962, Int.1., §3-4). There, Heidegger makes an important distinction between two modes of inquiry, the ontic and the ontological. An ontic inquiry concerns itself with entities and what can be said factually about them (Int.1, §4, 32-4). The ontological, on the other hand, asks after the nature of entities with respect to their Being: "The Being of entities 'is' not itself an entity" (Int.1, §2, 26).

The ontic/ontological error can be described as a compositional fallacy, confusing the part(s) for the whole. The physicist may argue that she can, in principle, provide an account of Being, given that it is theoretically possible to give a list of all the entities in existence, the laws they are subject to, and so on. In a different key, the philosopher might offer up an account of the *highest* being in place of Being itself, describing "it" as omniscient, omnipotent, and so on.[1] But neither offers a description of Being. As such, both are errors: The first case describes the total set of entities; the second case is a description of the highest entity. The question of Being asks after what entities have in common with respect to their nature. This can be no entity or collection of entities.

When applying the ontic/ontological distinction to technology, there are two levels to the discussion. The first level concerns itself with the basic fact that inquiring after individual technologies is a different task than delving into the nature of technology as such. In this sense, Pitt is wrong to claim that there is no such thing as technology, but only rocket ships, automobiles, and spoons. To not be able to see *beyond* technological artefacts (the ontic level of entities) to what is common to them all (the ontological level) is a failure of philosophical vision. The philosophy of technology, ought to—again—attempt to investigate the nature of technology.[2]

The second level to the discussion mirrors another distinction Heidegger makes in relation to the ontic/ontological. That is, since one does not possess a God's-eye view of reality, one is nevertheless stuck at the level of entities for one's investigation. The pursuit of the question of Being occurs *through* an investigation into the being of entities. In terms of which entity to pursue, Heidegger asserts that humans have ontological priority, for they are the beings for whom the question of Being matters. In other words, humans are the question asker: To ask a question is innately human. It is, as Heidegger, says, an ontic feature of human existence that ontological questions matter to them. The human being's existence, considered in this ontological mode of inquiry, Heidegger famously terms *Dasein*.

Analogously, the question of technology must be seen in the same light. The development and use of technology is a human affair.[3] Asking after technology is a human affair too. It is simultaneously an ontic feature of humanity's existence that they should be the ones who both employ technology and ask after its nature. As a preliminary step, asking after technology begins—as in the question of Being—by asking after humanity and its relationship to technology.

With this in mind, I now turn the discussion towards how the use of technology shapes the human world as well as their conception of themselves. Technology is fundamentally disclosive in nature. That is, in using technology, humans reveal the world and themselves in a certain light. One indeed already knows, intuitively, that technology is disclosive. Though he ultimately overcomes it, Heidegger introduces a perfunctory “intuitive” definition of technology that he takes to be disclosive in character: “Technology is a means to an end” (1993, 312). Technology *makes capable* the possibility of seeing the world as an arena in which to enact one’s ends. The coming-onto-the-scene of a technological artefact opens up the world to possibilities where none heretofore existed. It was not until the outrigger canoe came onto the scene, for example, that Polynesian people could fathom navigating to islands thousands of kilometers away some 3000 years ago. In other words, the outrigger canoe reveals the far reaches of the Pacific as that which is reachable.

Technology is what I call—after the French philosopher of technology Jacques Ellul—a *determinant* (1954, 90). ‘Determinants’ act as lenses through which the world is revealed to humans. For Heidegger, Being is experienced by humans not as “brute reality” but rather through the historical, material, social, political, technological (and so on) ways the world has been disclosed. Being is revealed[4] this way as the “sway” of world-disclosure (*cf*., 332-335). In other words, humans are situated in a time and place and subject to certain historical conditions that ultimately *determine* the possibilities open to them. That chunks of land could be bought and sold for monetary value would simply not map onto any intelligible coordinates for a pre-contact prairie-region indigenous person, for example. One of Heidegger’s central claims in *Being and Time* is that there is no such thing as a pure “thinking thing” but only embodied and historically situated humans who are first and foremost, beings-in-the-world—a world conditioned by determinants. Indeed, Heidegger’s contribution to phenomenology (the philosophical study of that which comes to light) over and above past phenomenologists is precisely in this realization: that appearances are conditioned by determinants.

Determinants are of a disclosive nature. It is only through determinants that one can come to know the world in the first place. That is, determinants make a world possible while simultaneously constricting how it can reveal itself. It follows that human choices are conditioned by the determinants available to them. Heidegger characterizes 'disclosure' as an "opening up" (*aufschließendes*) or a "clearing" (*lichtung*, also "lighting") [see 1962, I, §5, 171, n.2]. Heidegger usually talks about clearing as inherited historical-cultural (etc.) experiences that help one make sense of and see significance in one's environment. An eagle feather to an Ojibwa person has a special significance not found in most other cultures, for example. As necessary conditions that form the fabric—i.e., background conditions—for experience, determinants are, in this way, a "good" thing.

On the other hand, the clearing that determinants allow for also simultaneously covers up other possibilities. Some possibilities are merely regional. Being from the central-Eastern part of North America, the Ojibwe person would not have the same deep associations with the seeing of an orca as the Kwakwaka'wakw person—who is part of the orca clan and who lives amongst them as part of her lifeworld. Simply, the associations that the orca recalls are concealed for the Ojibwe person. When people come from radically different lifeworlds, sometimes these disclosures can almost be mutually unintelligible. This is played out, for example, in meetings between indigenous peoples and fish-farm executives in the Pacific Northwest. The Kwakwaka'wakw person may argue that salmon and the orca that feed on them require protection because she sees the orca as kin: damage to the orca is like harming her own family members. The fish farm executive, on the other hand, may only understand the issue in relation to "practical matters": She might ask what kind of incentives would persuade the Kwakwaka'wakw person to allow for the exploitation of the salmon "stocks".

As early as 1930, Heidegger's philosophy undergoes a "turn" in which technology (along with poetry and language) come to be a central focus. Heidegger's claim is that technological disclosure all the more easily enables the covering up of alternative possibilities, such that the only possibilities left are technological in nature.[5]

To give structure to this pursuit, I first demonstrate how the world might reveal and conceal itself through an analogy. Imagine walking through a dense forest. The trees close in and its impossible to see them in their full stature. When a clearing is formed, the forest opens up, granting room to breath. The trees at the perimeter of the clearing stand-forth for the first time, showing themselves. In a way, a clearing in a forest gives one the possibility to see the trees manifest themselves for the first time, as it were.

Analogously, when one isn't familiar with a body of knowledge or a particular skillset, it can feel a lot like walking aimlessly through a dense forest. Imagine walking through the Jet-Propulsion Laboratory as a layperson. While you know everything serves a purpose, the surroundings and instruments just would not be *illuminated* for you as they would be if you were a propulsion engineer. Every object would be just as significant as the next. You might be tempted to say, 'Oooooh, that looks important!', pointing to a particularly shiny piece of equipment. However, without the appropriate background knowledge, you would have no way of knowing. The opposite of opening up is concealing: the significance of such objects is *hidden* from the layperson.

To relate this discussion to technology, I now briefly discuss the three elements of technological practice—(A) the tools/equipment, (B) knowledge base, and (C) skills (that support a given technological outcome) in terms of disclosure. What I hope to show is that each element reveals the world in a certain way, while also covering up other aspects of the world. In other words, technological practice generates a disclosive—in terms of concealing and revealing objects in the world—understanding of the objects one relates to in the course of one's dealings.[6]

(A) [*Tools/Equipment*] I now turn to the first element of technological practice—tools and equipment—and their mode of disclosure. I argue that the core of Heidegger's famous hammer example contained in *Being and Time* (1962, 98-101) should properly be re-read in terms of disclosure.

The received interpretation of Heidegger's example is that he is attempting to demonstrate the nature of objects/things in the world—and through them, the character of the world as such. That is, he means to challenge the view that a thing is an object with properties attached. To this end, he argues that in building a cabinet, I am never aware of the hammer as an object of scientific study: its weight, its colour, the species of the wood the handle is made of, and so on. In everyday experience, the hammer is *never* merely a collection of properties. Instead, it recedes into the background of my building of the cabinet. In general, tools recede into the background of my existential nature, which is characterized by my throwing myself forward into my projects. As far as the hammer goes, I pick it up, bang in a few nails, set it down. In Heidegger's words, it is "ready-to-hand" (1962, 98).

Heidegger extrapolates upon this analysis to claim that the lived world is primarily of this receding character. That is, the world is primordially ready-to-hand and *not an object of study*—what Heidegger calls the 'present-at-hand'. The primary character of the things in the world, including the tools I use, he argues, are ready-to-hand in character. That is, they are disclosed or concealed according to the projects that I engage in.

The hammer only becomes an object of study when it breaks, when it frustrates my projects. Only then, Heidegger claims—precisely in its appearing to me as a useless brute object—do I ever notice the properties of the hammer. And even then, this is only to fix it in order that I may get along with my endeavors. Following this, Heidegger claims that the philosophical assertion that a hammer's essence is merely a description of its properties is mistaken.

However, a re-reading of the example given the discussion above points to how the hammer, as a tool, *discloses* the world. It is true, on the one hand, that tools merely recede into the background of my projects. But it is also true that I should be frustrated in building my cabinet should I never have a hammer to begin with! In disclosing the world as able to hammered, the hammer opens up possibilities that might not have otherwise existed. In this sense, the hammer actually *makes possible* the completion of certain ends that I might otherwise not be capable of fulfilling without it. Indeed, it would never occur to someone to build a cabinet in the first place without the requisite tools and background conditions that make cabinet-building viable and desirable in the first place (nomadic cultures have no need of cabinets).

The hammer's double-action is its capacity to both disclose the world on the one hand and set out possibilities for action on the other. In crude terms, the hammer discloses the world as something to be hammered. At the same time, it sets a *limit* upon that which can be hammered and that which cannot: It does no good to hammer air. The hammer's true essence is what it reveals about the world … how it lights up the world phenomenologically. The cabinet is only able to be built because the tools at hand disclose the scraps of wood on my workbench as something capable of being built into a cabinet. If all I had were a broken hammer, my efforts to build the cabinet would be in vain. And the fact that wooden pieces could be joined together by mechanical fastening (and not traditional jigsaw-like joinery) is a relatively modern occurrence only made possible by the advent of ubiquitous mechanical fasteners: nails.

All this is to say that tools and equipment *illuminate* the world in a certain way. Tools open up possibilities of revealing where perhaps none heretofore existed. At the same time, certain aspects of this illumination can become particularly recalcitrant, closing other possibilities off. It is the case, for example, that using mechanical fasteners to build things has now almost totally overrun traditional joinery techniques (which use a mallet and chisel). In a very banal way, the existence of hammers and nails (and later, screws and electric drivers) has shaped the world such that furniture and homes are now materially different than they were before their implementation (e.g., "stick-framed" houses have replaced timber-framed and post-and-lintel construction).

I take another example. Driving a car (the car, too, is a tool) has now almost exclusively replaced ambulation as the mode of transportation for a large part of the world's population. Correspondingly, the car has shaped not only how people get around but also the ways they interact with each other and the shape of their communities. It has been well-documented that, as porched homes began to be replaced with car-friendly garaged homes, spontaneous interactions between neighbors lessened (Ferguson et al. 2016; Pape 2014). Many scholars, such as Ray Oldenburg (1997) and Georjeanna Wilson-Deonges (2001), argue that the car's influence on the proliferation of suburbs and the style of homes built have deteriorated involvement and commitment to one's community. Beyond this, municipal governments have constructed cities with cars in mind. Large vehicle freeways encircle and penetrate cities, streets widen and shopping centers with large parking lots centred in the suburbs impoverish the downtown core. Even if people initially "chose" the car to be a primary mode of transportation, as a tool or a piece of equipment, the car has now so shaped (and continues to shape) their communities such that it becomes increasingly difficult to shift them towards different ways of construction. This still holds even if people collectively decide to move towards a focus on other modes of transportation such as cycling, walking, or public transport.

(B) [*Knowledge Base: Language*] The second aspect of how technological practice discloses the world is through its "knowledge base". Here, I restrict the discussion primarily to how technological language (the way through which one's knowledge base is often expressed) discloses the world to be of a certain character. I do this for reasons of brevity but also for the reason that language, as a disclosive phenomena, serves as a continued preoccupation for Heidegger throughout his career.

To a propulsion engineer, the objects in her lab stand-forth: She can make sense of them. For an object to be revealed in this way, it is not enough to recognize it as object, as a collection of properties, but as a tool to use in the carrying out of projects. One gets along in one's projects when the world is opened up to one in familiarity. This familiarity is derived from background conditions (elements of technological practice and aspects of other determinants) that "bring" the entities in the world "forward into appearance", *apophainesthai* (Heidegger 1993, 315). A*pophainesthai* is rooted in speaking. Having a name for an entity or a state of affairs, being able to speak (*legein*) about them, and having them in turn "speak", allows them to "show up" for humans in their projects—and get things done. Language, for Heidegger, becomes the primary locus of how things are revealed to humans. That is, the world is disclosed as technological in nature because people have lost (or have yet to invent) other non-technological ways of speaking about the world.

Doing phenomenology, which is the character of Heidegger's and my own project, is the process of examining how things, *phainomena* ("that which appears or comes forward into presence"), come to light or are concealed. Heidegger thinks that language is the primary mode of revealing/concealing that human beings engage in.

I draw an analogy between capitalist and technological language. Capitalist language, like technological language, is indeed everywhere. One need not even look outside of the academy, where there has been a proliferation of capitalist language used to describe the purpose of colleges and universities. They must make themselves "revenue positive". Scholars must "secure funding" if they hope to receive tenure as if they were about to make an Initial Public Offering. And courses must have the appropriate "educator to student quotient" in order to make them more "profitable", while a declining number of courses are taught "at a loss". Even as potential challenges to capitalism arise in language, capitalist language merely consumes those words and repurposes them: Witness the rise of the "sustainable business" and the "green economy", for example. Technological language follows a similar path.[7]

Technological language is pervasive. For example, in describing the natural world, which might be thought resistant to technological language, it is common to take a "systems approach" when discussing biomes and ecozones. Like a factory, biomes have distinct inputs required for their functioning. They consequently produce outputs. These might be products beneficial to the environment such as clean water, fresh air, or beneficial biota such as diatoms or mycorrhiza. On the other hand, these products might in turn become inputs into technological systems: wood pulp, mined materials, and so on. In other words, it is already a technological abstraction that environments could be said to produce inputs and outputs in the first place.

In contrast, it might be argued that there is a recent branch of science ("biomimicry") that looks to the natural world for inspiration in building more successful technologies: e.g., investigating the structure of spider silk in order to build better tensile materials (Rinaldi 2007). This would seem to speak against the idea that one's thoughts about the natural world are overrun with technological thinking. This is a mistaken assumption, however. Looking at the silk as a technological construct, composed of individual molecules that can be replicated in a lab, is already to render the silk inherently technological.

Moreover, seeing the spider itself as part of a "system" in which it is beneficial to (or even a "keystone species" in) the overall functioning of the biome it lives in—is already a technical abstraction that transforms the biome into something machine-like. As an indispensable or keystone species, the spider's overall contribution to the system is not "functionally redundant": i.e., like a computer's processor is to the functioning of the overall computer system, the spider is necessary for the continued operation of its respective biome. All this is to say that for nature to be understood as a technological system, one must already have the antecedent technological modes of revealing in place that enable such understanding. And the fact that it is increasingly difficult to imagine the natural world in a way other than as an eco-*system* shows the extent to which technological language has overtaken other forms of revealing the world that might be non-technological.

In a similar vein, it was not until mechanical contrivances such as intricate clockwork arrived on the scene that the human body could ever be imagined by René Descartes as something solely technological in nature, a mechanical automaton.[8] Correspondingly, the "cell as factory" approach could only ever have existed after Henry Ford's invention of the assembly line. And the brain as a "neural network" could have only existed after the proliferation of telephony network infrastructure. Simply, technological practices come to hold such a sway over language that the world cannot help but be revealed in many circumstances as itself technological in nature.

(C) [*Skillsets*] Lastly, technological society is a society of specialized skillsets. The proliferation of these skillsets at the expense of others has meant that other forms of disclosing the world have entirely been lost. For example, hardly anybody knows what plants in the forest harm or cure, how to track an animal, or how to build a shelter to keep the rain off. So too, it has been quite some time since most humans have lived in a community that is *radically* dependent, in a visceral way, on getting along with others. (Getting along with others is indeed a skill.) The Smithian idea of the butcher, the brewer, and the baker minding their own business and self-interest taking care of the rest has long since taken care of the need for a direct relationship with other people. The phenomenon of Japanese *hikikomori*—those who remain isolated in their dwellings, eschewing all social contact—is just a symptom of this. (Indeed, as the COVID-19 pandemic progresses or future pandemics occur, this may become a worrying alternative for all of us.) However, perhaps these lost skills are not mourned. Perhaps nobody in the past mourned the transition from navigating by the stars to navigating via map and compass, just as perhaps today nobody mourns navigating via GPS versus map.

But, for now, the point I am making is less reaching than that. The reader need only take note that the proliferation of technological skillsets has left others by the wayside. When Heidegger repeatedly talks about how humans have restricted their understanding of what can possibly be revealed to them, this is precisely the essence of what he means. In leaving many skillsets that used to be commonplace by the wayside, the march of technology has barred off (or at the very least, made it increasingly unlikely) that most will ever experience the world in these alternative ways.

To finish the discussion of disclosure, I suggest that one ought to think about the elements of current technological practice (tools and equipment, language, and skillsets) as "sticky" aspects of the world. They are sticky to the point where these modes of technological disclosure almost become *necessary* ways of negotiating one's life. Think of trying to get a job, for example, without an email address (even a lack of social media accounts is now increasingly experienced as suspicious). What is weird about sticky things is that, quite often, it is *people* who invented them in the first place. For example, currency is a human invention, yet try as one might, it is now hard to ever imagine trade happening without it. Instantaneous network communication across the planet is, too, a good example. In these ways, technologies become recalcitrant parts of the world such that one must engage with them in order to navigate through life. At the same time, when especially prevalent, they become sticky forms of disclosure that quite literally shape one's reality.

In his essay on *Antigone's* "Ode to Man" contained in *Introduction to Metaphysics*, Heidegger talks about how tool use sets down *pathways* (2000, 156-76). It might be said that in using technologies, humans wear "ruts" in the world. These ruts perhaps make it easier to get around, but given enough time, it is easy to forget that these paths were laid down in an initial forging. The current mode of technological understanding, what Heidegger calls *enframing*, is one such well-trodden path. Indeed, it is so well-trodden it seems as though there is no alternative, as though humanity now walks along the edge of a precipice. People's own ways of doing things, therefore, come to wield a power over them in the form of an overwhelming sway. As these paths become indispensable to negotiating the world, humanity's own creations, their own well-trodden paths, come in turn to wield power over them.

In what was presented, I outlined some ways that technological artefacts might come to reveal the world and humans in a certain way. But there is more to technology than simple disclosure. Disclosure ultimately has content. I now look towards what is common to all modern technology and interrogate the specific way modern technology reveals the world as what Heidegger calls 'enframing'.

Enframing

In his middle and later career, Heidegger endeavors to explain what is disclosively common in all modern technological practice. The character of modern technology *as such* opens up the world in a certain way. Not as cabinets to be built, but as resources to be used. Heidegger calls this kind of revealing *enframing*. Enframing is a *challenging*. That is, enframing challenges the world to yield itself up as *standing-reserve*: resources, stock, units of energy, and so on.

Put another way, the world becomes wholly fathomable and calculable under conditions of enframing: e.g., One can determine how many cubic feet of pulp a forest contains, how numerous the salmon stocks are in the ocean, and how many gigawatt hours a particular day of sunlight may generate. Ultimately, Heidegger argues that the things in the world come to be pre-determined in terms of an "as-structure" (as resources, energy, stocks, etc.) before they even come onto the scene. When Heidegger says that the meaning of Being is no longer questioned after, he means precisely this: that Being as such (and indeed all things) have already been subsumed under the rubric of technological understanding, which understands the world as standing-reserve.

In relating this back to the original point on the ontic/ontological distinction, it is clear that by subsuming Being under an essentially calculable collection of entities (the ontic), Being itself (the ontological) is lost track of. The problem of technological enframing, therefore, becomes for Heidegger a fundamentally ontological problem. Under conditions of modern technology, alternative understandings of Being that existed in the past and could exist in the future become overrun.

Importantly, enframing comes to range over humanity as well. That is, even people come to be seen as calculable units able to be represented on a tally sheet: whether it be as human resources, labour pools, voting blocs, Facebook advertising demographics, COVID-19 body counts, … people are endlessly tallied and sorted. In the same vein, one can now determine how much "labour power" it will take to build a skyscraper, the precise carbohydrates and protein required to maintain one's energy during an exercise, and so on. In limiting the ways that both humans and the world come to be understood, enframing limits human freedom and the capacity to choose ends that do not conform to technological intelligibility.

The character of enframing is one of challenging. Challenging is specifically meant to characterize modern technological practice as that which makes possible the ability to store up the earth's energies[9] into what Heidegger calls 'standing-reserve'. 'Challenging' is *herausfordern*, which can also be translated as a "summoning" or "badgering" or "setting upon". This challenging call, then, might be characterized as an incessant demand. To say that something sets upon something else recalls vampirism and other sorts of monstrism: e.g., Dracula setting upon a hapless victim. When Heidegger says that nature is set-upon he means to say that it is called upon to become standing-reserve. This call makes nature *stand-forth* in a certain way. Nature stands forth as enframed. The peculiar way nature stands-forth under enframing is how the world phenomenologically shows up for humans. In this way, nature is pre-forced, pre-determined into being rendered intelligible by technology.[10]

As Michael Inwood notes, Heidegger's words for 'standing-reserve' (*Bestand*) and 'enframing' (*Gestell*) are related (1999, 210). The word "*Stellen* means 'to make [something] stand'"; it also means "'to provide, to contibutute' something to a common stock" (210). The prefix *ge-** means "together" in Proto-Indo-European but is used in German to form noun aggregates: "*Gebirg*, 'mountains, mountain range', from *Birg*, 'mountain'", and so on (210). Inwood draws a comparison between *Bestellen*, "to order, reserve, appoint" and *Bestand*, "stock, standing-reserve" (210). He argues that Heidegger meant to install his conceptual framework in the words themselves. *Bestellen* is that which orders entities (appoints them) *as Bestand*. And the name for this process is 'the gathering together of stock', *Gestell*, enframing. This ties in with concepts already explored: (a) The process of enframing is a kind of revealing: making objects in the world stand-forth in a certain way; (b) The process of enframing takes stock of resources, and thereby tallies them up and orders them *together*.

As I have said, Heidegger argues that today nature is on call for use. Another way to put this is that it can be quantified and tallied on an inventory sheet. The forest becomes merely cubic meters of pulp … so many board feet of lumber. To this end, "management" becomes the new way of interfacing with the world. Interfacing with a forest becomes mere "forestry management practice". Even so-called "sustainable forestry management" is a kind of management that treats trees as a stock to be used. Since all trees can now be considered stock, managing the vast sum of resources becomes necessary. Therefore, the rise of management culture and political bureaucratic ministries of control over this stock ("Department of Forests, Lands and Natural Resource Operations", Natural Resource Technology degrees, and so on) goes hand-in-hand with the technological ordering of nature.

To render the environment as "natural resource" is to already make it into standing-reserve. In order that nature may be set-upon, it must be ordered. It would be difficult to utilize resources if they were all tossed together in a midden pile. That which is standing-reserve demands, then, to be stacked, sorted, and optimized: the calling cards of technocratic ordering. As Heidegger says, "unlocking, transforming, distributing, and switching about are ways of revealing" (1993, 322). "Regulating and securing" in order to render the resources as "on call" becomes the dominant mode of ordering (322). In ordering, a stockpile is secured, which can then be inserted into a global supply chain, such that resources are able to be moved around the world over.

Modern technology also reveals "nature's energies" as able to become standing-reserve (Heidegger 1999, 211). This is distinct from antecedent forms of technology. As Heidegger says, "How does a power-station on the Rhine differ from a potter's wheel or a windmill [≠ wind turbine]? The potter reveals pots by 'bringing them forth', the windmill reveals energy, but neither 'commandeers' nature's energies or stores them for future use" (211). Heidegger argues similarly when answering the question of whether the windmill transforms the wind into standing-reserve: "But does this not hold true for the old windmill as well? No. Its sails do indeed turn in the wind; they are left entirely to the wind's blowing. But the windmill does not unlock energy from the air currents in order to store it" (Heidegger 1993, 320). The windmill reveals energy that is already there but ceases to function when the winds are not favorable. In this sense, the windmill lets the *wind be wind*.

Other alternative forms of disclosure have largely been forgotten. In an Aristotelean sense, walking through the forest or watching over a tract of earth in which one plants, nature exposes itself as a play of motion, presencing and receding. The sprout breaks the surface and reaches for the sky. The bud appears and disappears when the fruit appears. In death, the plant retreats into the earth to give birth to a new motive process that nourishes future life. In this sense, nature exposes itself as predominantly *not ours*: not ours to dispose of, use up, or stockpile. As a preliminary, I suggest that enframing does *violence* to the world, while an alternative (perhaps historical) mode of revealing *works with* the world.

And herein lies the difference between antecedent and modern technologies. When Heidegger talks about technology, generally he means to distinguish between post-Industrial technologies and pre-Industrial technologies—the latter of which I call 'antecedent technology', the former, 'modern technology'. Post-Industrial technologies are largely enframative in nature, while antecedent technologies largely are not. I now give the reader a brief and by no means exhaustive account of what I mean by this distinction. I return to it in Chapter 5.

When industrialization came onto the scene, it brought with it factories (the first of which were textile factories, which were first hydro- and then steam-/fossil-fuel- powered); a globalized supply chain (e.g., cotton grown in India and the United States was shipped to Manchester, England for processing); mechanization of hand processes (e.g. the transition from hand-picking of cotton to the mechanical cotton gin). With these gains came a newfound focus on efficiency, first rendered in the modern sense by Davies Gilbert when attempting to demonstrate the superiority of James Watt's coal-powered steam donkey over other forms of energy production. From Gilbert, we receive the term "horsepower" (1827, 27). Specifically, Gilbert transforms what Watt terms 'duty'—which Watt uses to describe the amount of productive output of a steam-cylinder—into 'efficiency', ostensibly to render it a more marketable term. The term spreads like wildfire from there. Quickly, a machine's efficiency comes to also be formulated as the total needed resources required to motivate the machine itself, relative to the output it produces. An efficient steam-engine minimizes coal fuel consumption and maximizes power output, for example.

Efficiency, understood as the economy between means and ends—inputs and outputs—is born. The "economy between means and ends" sounds a lot like the earlier perfunctory/"intuitive" definition of technology as a means toward an end. Indeed, it is Heidegger's emphatic point that post-Industrial understandings of technology have come to overrun antecedent understandings of technology: i.e., possible alternative disclosures of technology and the world have been concealed by post-Industrial technology.

With a focus on efficiency and mechanical production comes the need for regularized inputs and outputs. For the first time, understanding the world *primarily* in terms of standing-reserve, regularized units of this or that resource, this or that stock, this or that commodity, becomes—at an unprecedented scale—simply the way "one does business". When Heidegger says that the world, under conditions of post-Industrial mechanization, becomes 'everywhere secured', this is precisely what he means. The world, in order to be made intelligible to mechanical production, must itself be understood as a pure input. The logic of post-Industrial technology seeks to render these inputs on call: ready and available. An offshoot of this process is the understanding that every productive input (from wheat to ore to bitumen) must be able to be regularized and substitutable for every input of the same kind. In Heidegger's words, inputs can be "switched about" and exchanged so that the appropriate inputs are always presently available and therefore, on the way to becoming outputs (1993, 322). Outputs are the same and become just another component of a cyclical process.

The transition from, say, the locally produced and baked loaf of bread, which is always produced according to a regional style, to the ubiquitous *Wonder® Bread*, a regularized food product able to be understood for the first time as a purely substitutable commodity, is precisely the transition between pre-Industrial and post-Industrial technology. *Wonder® Bread* is the triumph of a perfectly regularized world, a world in which wheat production is controlled through precise fertilizer and pesticide inputs, precise irrigation, and mechanical harvesting techniques.

For Heidegger, that the world can be transformed into inputs and outputs, and that commodities can be traded at a global level, is only possible in the first place because technology has so pre-disclosed the world to be of this character. That is, the essence of the things in the world come to be understood, first and foremost, as standing-reserve.

The discussion of the difference between modern and antecedent technologies in terms of enframative/non-enframative disclosure must only take the form of a promissory note at this juncture. The difference, in a few words, is that the latter lets nature's energies *be*, while the former attempts to transform the natural world into *raw energy* to be collected, distributed, and used up. The distinction comes down to the difference between the favourable winds that one thanks for bringing, for example, a Chinook—a relief and a blessing—versus the unlocking and storing up of wind as energy (i.e., pure input), as able to be converted by a turbine and stored in lithium batteries for future use.

However, all this may be the case, but if technology were not deterministic in nature (i.e., if it was not difficult to resist its pull upon human ends), this would not ultimately be a problem. However, technology is of such a character.

Reverse-Adaptation

Humans today live in a world full of determinants that they have no control over yet are nevertheless beholden to. I now turn to how technology, as a determinant, comes to influence human choices and ends through a process that Langdon Winner calls "reverse-adaptation" (1977, 229). The idea of reverse-adaptation is contrary to the instrumental view of technology, that technology is a means to a preconceived human end: merely an inert tool. *Reverse-adaptation* is the way that people come, instead, to adapt to technology's ends rather than their own.[11]

In the second chapter, I showed that technological artefacts can be said to possess "ends" through their built-in use cases. It is not as if one cannot use a claw hammer to make a sandwich, but it would be contrary to pathways that have historically been set down for its use. As I have said, these pathways come to wear ruts in the world such that it becomes what one might call "non-normative" to use them in unaccustomed ways. But, as a relatively primitive kind of technology, one can set a hammer down and ignore it.

I now turn to technologies that very clearly place demands upon people—and very clearly cannot be ignored. Large-scale technologies—the technologies that maintain the modern world—place significant demands both on humans and the natural world, in terms of development, maintenance and upkeep. That is, technologies come to call upon humans/world—not just in terms of their use-cases but through their continued functioning.[12]

The case is especially clear with sophisticated technologies that carry risk along with their operations. The paradigmatic example in the literature is the nuclear power plant. Its continued running (making sure the cores are continuously cooled, etc.) becomes a matter of life and death. Humans cannot ignore the nuclear power plant and are required to answer its call. Even once it is decommissioned, some nuclear waste is dangerous for millennia (NRC 2019), requiring that future generations also answer its call.

In what sense are humans required to answer the nuclear plant's call? Winner notes that "in their very nature, modern technologies are large-scale, high-energy, high-resource systems requiring massive commitments of capital and technically trained manpower" (1979, 181). Winner's 3 main points follow: (A) First, large-scale technologies (or technological systems) require massive resource inputs for their sustained operation, which require humans to commit to exploitation of the natural world for long time frames; (B) second, large-scale technologies place demands directly upon humans in terms of the rigid hierarchies and organizational robustness required for their continued functioning; (C) third, by prioritizing skillsets consistent with the functioning of these technologies, other skillsets are lost, which closes off other ways of disclosing the world—and hence, other potential choices/ends that may be preferable. I add a fourth point: (D) I attempt to summarize Winner's ideas in terms of Heidegger's concept of technological totalization[13], where technological possibilities not only come to overrun alternative modes of disclosure, but actively hinder their ability to be expressed. That is, in the end, even if one undertakes action to reject such technologies, one almost always cannot meaningfully opt out of technology's continued demands.

(A) [*The world as resources*] A nuclear power plant requires feeding it a steady diet of enriched uranium, its main fissionable material. Massive open-pit mining, an example of which is the Key Lake mine in Northern Saskatchewan (the largest uranium mine in the world), is required to mine uranium. (Energy provided by coal and natural gas fares no better, with massive mines required in the former case and chemical-hydraulic fracturing of geologic deposits required in the latter.) Simply, humans must treat the world as a steady store of resources in order for the continued functioning of the power grid.

Even seemingly humble technological artefacts are deceptively complex, being backed up by large-scale productive systems that plunder the world for resources. Within a simple object such as a cotton and polyester dish towel, sold by IKEA, a massive globe-spanning system is observed. The cotton needs to be grown in the United States with vast amounts of petrochemical fertilizers and insecticides. The industrial feedstock, the petroleum liquified gas, needs to be refined into a thermoplastic polymer (polyester), a plastic capable of being manipulated when heated. Both the cotton and the thermoplastic polymer need to be spun into thread. Then, the raw material needs to make a journey by boat to China, where it is made into a dish towel. Once made, the towel enters a vast and complex distribution network capable of circulating products around the world. When the consumer comes to purchase it, she drives to the store, which is always located in the suburbs, using a massive system of roads. To account for the vastness of technical systems that need to be in place for ubiquitous but complex artefacts such as smartphones is even more astonishing.

Modern technological artefacts are part of a system that requires consistent "feeding" with resources. Importantly, green technologies do not overcome this fact. Solar panels and the lithium-ion batteries required to store their electricity, require the mining of minerals such as silica, cobalt, and lithium. The majority of lithium, for example, is mined from vast desert salt flats in South America (Katwala 2018). In a desert region, immense amounts of water are piped into huge ponds (humanmade toxic lakes, really) along with chemicals that allow the lithium to separate out when the chemical-water mixture evaporates. In an already water-parched desert, evaporating such quantities of water leaves the landscape even more dehydrated. And if anything, as green technologies proliferate, more and more lithium will need to be mined into the future (2018).

To sum up, by placing demands upon the world to yield itself up as resources, these technologies in turn place demands upon people into the future. The demand for resources leads to other technological solutions (in some cases, to the problems created by technology in the first place) that in turn demand more resources. In this way, the need for resources is self-sustaining. The logic that says that humanity must some day mine asteroids and perhaps even move on from "spaceship Earth" is just a symptom of this thinking.

(B) [*Direct demands upon humans*] Reverse-adaptation directly operates upon humans in two ways. First, large and complex technological systems require that one submit to modes of domination and hierarchy in both the workplace and the system at large. Second, the complexity of the technological world and the corresponding deskilling of people creates an unprecedented amount of dependence upon the continued functioning of the technological system. At the same time, the complexity with which the modern world operates also makes it susceptible to disruption and people susceptible to the corresponding hardship that would occur should it fail. Langdon Winner calls this fear *apraxia*, which I cover in the next subsection (1977, 185*ff*.).

To start, constructs such as nuclear power plants and hydroelectric dams require a sophisticated skillset on the part of workers. Due to the difference in knowledge between workers and the consequences should something go wrong, workplaces must be places of strict discipline. The parody that is Homer Simpson, the nuclear plant technician who "has the keys to the kingdom" including a "Do Not Press: Will Cause Meltdown" button on his desk, is exploited for comedic effect. This is precisely because such a thing should (and indeed, must) never happen, given conditions of modern technological sophistication and discipline. In the real world, societies simply cannot afford such catastrophes. The Canadian Government, therefore, makes sure that nuclear plants are protected with military measures (including preparedness for potential terrorist attacks and missile strikes); and they make it a legal offense to disobey one's superiors while at work (CNSC 2014). The public, indeed, demands that measures such as these exist, because the costs of failure are so high.

The nuclear plant is merely one of the most visceral examples. Other large-scale technologies carry similar risks. The downstream effects of the failure hydroelectric power plant, such as China's massive Three Gorges Dam (which holds back so much water that it alters the rotation of the Earth), would be similarly catastrophic. A less visible example is the agricultural system. It depends on massive resource inputs in terms of fertilizer (the components of which are mined) and water (which must be diverted). This is not to mention the research and development costs associated with engineering crops to be drought and "pest" tolerant. Disruptions to power systems; food systems; municipal, industrial, or agricultural water systems; come at great cost and can indeed lead to the loss of human life, either from direct effects (e.g., starving) or "knock-on" effects (e.g., riots, other forms of political upheaval, and so on).

Secondly, at one level, workers in critical industries must submit to hierarchy and domination by others with the "proper skillsets/knowledge base" in the workplace. At another level, everyday people—the "consumers", the "end users"—*are all fantastically dependent on the operation of such technologies for even the basic necessities of life*. The hysteria and subsequent run on toilet paper during the beginning of the COVID-19 pandemic is a testament to the idea that much of humanity can no longer adequately deal with its own waste without relying on a vast and complex industry to "help" them perform the operation. Dealing with one's own waste crucially depends on the "harvesting" of forests, perhaps in far flung places, the turning of trees into pulp, the bleaching of pulp, its refinement into soft filaments, and so on. Heidegger argues that the forest itself becomes subordinate to the orderability and regularity of pulp as standing-reserve. Even something as banal as one's own behind becomes crucially *dependent* on the ready availability of pulp and its continued conversion into toilet paper.[14]

(C) [*Apraxia*] Following this realization, Winner says that vast technological systems, therefore, always go hand in hand with an associated fear of *apraxia*. Winner defines ‘apraxia’ as the inability for complex and interconnected technological systems to function should a small part cease to function (1977, 185*ff*). Here, one can think of the 2010 Stuxnet virus. In infecting a large number of the world’s computers, it eventually accomplished its goal of hamstringing Iran’s uranium enrichment programme. It attacked small, brick-sized, programmable logic controllers (PLCs) that were part of a chain of systems used to separate out fissionable materials. So interdependent are such technological systems, that attacking a small part (and there are thousands of PLCs operating at any industrial site) cripples the whole operation, creating an apraxic fear.

Technology has enabled globalization at an unprecedented scale, which makes countries vulnerable to the breakdown of technological systems in other places. The current supply chain crisis caused by the COVID-19 pandemic sees these technological systems pushed to their brink. Importantly, neither does it appear that green technologies requiring similar levels of sophistication (from wind farms to organic farming systems to green products) are any less susceptible to apraxia in Winner’s sense. What should happen, for example, should a wind farm’s energy storage systems be damaged by a cyberattack?

Heidegger’s greatest fear is *not* apraxia, that things should stop functioning. Rather, what Heidegger fears is that technology should just continue functioning in a mundane, banal way—that nothing should ever go amiss: “Everything is functioning. That is precisely what is terror-inducing, that everything functions, that the functioning propels more toward further functioning, and that technicity increasingly dislodges man and uproots him from the earth” (1966). It is the unthinking and unquestioned continued march of technology that is truly to be feared. If anything, the disaster medium (which chronicles how quickly societies should fall apart and turn into dystopias would apraxia occur) is just a symptom of the idea that *one can no longer imagine an alternative world without increasing technological functioning*. In this way, one is unaware that any other possibility should exist, believing either optimistically that more technology will come to the rescue or pessimistically that it will doom us all (as in the disaster novel).

Read in a Heideggerian way, therefore, apraxia becomes a deeper phenomenon. In the same way that technological language begins to take the place of different forms of speaking, the increasing demand for technological skills comes at the expense of other skills. People, therefore, lose ways of disclosing the world that once existed (or could have possibly existed, given a different technological trajectory).

This is, I think, a more penetrating way to define apraxia, which I now modify to capture the idea that people no longer have (or have greatly reduced capacity for) the skills and practices that once disclosed the world as other than standing-reserve. In other words, the proliferation of technological skills has simply overrun antecedent skills. Correspondingly, one can imagine a cognate term, *alogia*, in which other forms of disclosing the world according to language are overrun and forgotten in favour of technological language. (See page 43*ff*. covering the disclosive nature of technological language for concrete examples.) If 'language is the house of Being', as Heidegger argues, then a loss of other ways to describe the world is concerning. If language is lost, this corresponds to a loss in the ability to light up the world in a unique way, apart from technology.

For Heidegger, language is not only phenomenologically important, but, through its inheritance and connection to one's ancestors, it acts as a historical-cultural connection to past peoples and past ways of disclosing the world. In papering over or even replacing elements of language in favour of technological terms, humans correspondingly lose a connection to their past. A rejuvenation of our language becomes central to Heidegger's philosophy. Ultimately, I argue, in a similar vein, that a connection to our past through elements of practice are also worth pursuing. Put another way, there is memory in our hands.

(D) [*Totalization and barriers to exit*] Apraxia and alogia are deeper than a mere loss of skills or language. Indeed, there are corresponding "barriers to exit" from technological systems that effectively foreclose upon other possibilities, should one wish to pursue them. In living in an apartment building in a large city such as Mumbai, for example, one has little choice but to *submit* to the industrial food system *if one wants to live*. One hardly has the ability to hunt or fish or forage. The same goes for any number of other technological systems that one depends on. This drives home the fact that the hippy-back-to-the-land alternative is not available to everyone. Beyond the fact that if one wants to maintain her job, her family connections, and so on, this is nigh impossible, there is also the simple point that the world's population has vastly outstripped any possibility of such a (hippy-back-to-the-land, rural, or "non-standing-reserve intensive") lifestyle to be realized for the many. The irony, of course, is that the same technological system that allowed the world's population to increase to such levels, simultaneously closes off the possibility of a largescale rejection of technology *without a great increase in human hardship*.

Even if one was to *accept* this hardship and still choose to opt out, many technologies still place demands upon people, even after their deactivation. Even after being "spent", some nuclear waste is dangerous for millennia and requires continual supervision (NRC 2019). Likewise, in Canada's North, toxic waste from mining operations has lastingly polluted bodies of water in traditional indigenous territories (Milewski 2008). The question now asked is how to warn future generations not to go near the sites for millennia. What does a warning sign that lasts millennia look like (Buyting 2020)? Indeed, an entire issue of *Atmospheric Chemistry and Physics Journal* was dedicated to trying to model the generational effects of, among other things, acid rain on the landscape surrounding Saskatchewan and Alberta's oil sands operations (Bottenheim et al. 2019). Future generations, therefore, will be on the hook to answer to answer the call of these technologies, long after they have ceased to operate.

By now it should be clear that it is not so easy to reject enframing technologies—and indeed, the class of enframing technology as such, which I have called 'modern technology'—out of hand. Here, there are three levels to the discussion, varying in sophistication.

At one level, the technology one lives and breathes on a daily basis just is enframative in nature. By participating in society, one opts into a technological attitude that implicitly treats the world as standing-reserve, whether one knows it or not. Even simple things such as cooking dinner and doing the dishes renders one beholden to a vast technological network that industrially produces regularized food commodities[15] and banal things such as IKEA tea towels. But at the same time, if one stops here, one might be tempted to say that contemporary technology is at least escapable. One could plausibly make the argument that modern technology is, too, neutral. One might say that technology is enframative, but so what? One can just opt out—even if opting out is incredibly difficult.

At a deeper level, it is not just that modern technology is enframative; it is that—in being reverse-adaptive—it locks people and societies into ways of dealing with the world, and indeed, each other, that treat the world as standing-reserve. One "disobeys" technology's demands at one's own peril. While the failure of a nuclear power plant or hydroelectric dam is quite visceral, the failure of a wind or solar farm supplying power to millions of people in an extreme climate would also have disastrous results. Even the hippy back-to-the-land/primitivist approaches could not ignore the mass exodus of millions in the wake of technological disruption.

The inability to, on the one hand, ignore technology, and on the other, imagine possibilities other than technological—both now and into the future—renders it *totalizing*. Heidegger recognizes modern technology as a totalizing phenomenon. That is, technology has so invaded other modes of revealing that almost no ways of disclosing the world (including humanity itself) exist anymore that are non-technological. For Heidegger, this is an especially troubling problem, being that humans are, at base, existentially free individuals who properly do have the capacity to choose their own ends.[16] Echoing this, Chihab El Khachab writes, "Since modern technology discloses all reality (including human beings) as an exploitable sum of resources, it endangers us by totalizing our ontological relation to reality; a totalization which, furthermore, renders us oblivious to technology's totalizing effects" (2012, 2). Modern technology is not only disclosive. Instead, at the deepest level, El Khachab suggests that the nature of this disclosure is totalizing in that it perhaps comes to range over all human possibilities (2).[17] This has the important implication of simultaneously hiding the nature of technology: Since technological revealing is everywhere, it is "nowhere".

In the same key, this suggests that technological disclosure influences practice (apraxia, in the expanded Heideggerian sense) and language (alogia) in an almost subconscious or invisible way. What this in turn suggests is that, in ranging over one's possible ends, the functioning of the system becomes an imperative that takes precedent over other ends that one might have. This, again, need not be an explicit process but is just the way one "operates" within technological society.

By now, one should come to see not just individual technological artefacts, but the phenomena of modern technology itself as a mode of enframative disclosure. Indeed, at this most penetrating level, the continued march of technology and its irresistible pull upon one's ends is not just a forgone conclusion—but the *only* conclusion, the only mode of revealing left.

This means that the standard technological determinist position is ultimately not an adequate capturing of what is going on in the human relationship to modern technology. On the one hand, focusing on technological artefacts might make one think that it is as simple as rejecting those technologies that influence one's ends and keeping the others. This ignores the fact that modern technology, as a phenomenon, is what is doing the work here. The dominance of modern technology over human affairs makes it difficult for people to adopt ends that are *apart* from modern technology's totalizing nature that sees everything, including humanity itself, as potentially an input into its machinations.

Totalization can be thought of as having two main components: one material and one disclosive. The material component includes the real physical effects and demands that technology places upon people and the world: that they view the world as a store of extractable resources; that they order themselves as resources able to serve technological functioning; and that they become malleable and submissive to technologically-dictated hierarchy and order in workplaces and daily life.

The disclosive sense of totalization captures the idea that technological possibilities have covered up other ways of revealing the world, both at the level of practice and the level of language/thought. If modern technology is totalizing and enframative in nature, then people have little possibility of arriving at ends that are radically their own, apart from technology. In this way, technology acts as a set of rose-coloured glasses that are stuck to one's face. Both the things in the world and one's own possibilities come to be determined by this technological lens.

What is most troubling for Heidegger, beyond the interference with human ends, is that the ontological character of the world has become overrun by enframative disclosure. That is, there is no aspect of the world that technological understanding cannot touch—or indeed, dominate. While the forest might reveal itself today primarily as a stock of resources, even seemingly untouchable notions such as love come to be understood through the lens of mechanical processes (pheromones, hormones, and so on).[18] For Heidegger, at its apotheosis, the mystery of Being itself—experienced as alternative forms of world-disclosure—becomes altogether hidden.

Responding to the Problem of Technology

The David Lynch film, *Blue Velvet*, depicts the upsetting of a picturesque 1980's suburban dream by an underground criminal empire (1986). At the end of the film, the two main characters, Jeffrey (Kyle MacLachlan) and Sandy (Laura Dern) resume their college romance. The ending is filled with light and robin song (a symbol of things returning to normal), which marks a return to the idyll. But it rings too sweet. The robin outside the window in the final moments of the film holds a dead cricket in its mouth. No doubt at the instruction of Lynch, the lead actors play the last scene entirely straight and come off as though the damaging events of the film never occurred. The grandmother takes on the eyes of the audience, pointing out the unsettling nature of the scene outside the window. All of this has the effect of marking the return to normalcy stilted and hollow.

After a traumatic event, one can indeed *attempt* to go back to one's life, as Jeffrey and Sandy attempt to do. As will be seen below, David Foster Wallace, who advocates for putting on a smiling face, despite the ugliness of the world, appears to go in this direction. But this is not the world of the *Matrix*, where Keanu Reeves' character, Neo, is given the opportunity to forget and return to ignorance via the ingestion of a pill (1999). In relation to the question of technology, this difficult knowledge is the ontological realization of how the world (including oneself) has come to be disclosed as standing-reserve under conditions of modern technology. For the Heidegger of *Being and Time*, when one falls under a mood that makes one realize that one is existentially free, one's own being becomes, perhaps for the first time, *at issue*: Indeed, the ontological nature of humans is to be those beings for whom their "very own being is an issue" (1962, 33). This is to say that one is confronted with a choice in the full existential sense of *what to do with oneself*. In a similar way, I claim that the character of the appropriate response to modern technology should now come to be *at issue* and cannot be merely forgotten. However, the character of the response still needs to be determined.

The totalizing disclosive nature of modern technology appears to occlude a clear path forward. However, this process of totalization is obviously not complete, for Heidegger makes the case that alternative forms of disclosure are possible. The fact that an inkling of an alternative still exists must mean that there is yet a residue of an alternative left to be uncovered. For Heidegger, this residue is written into our very language itself. For myself, it is written into the practices of craft. Since there exists cracks, Matrix-like "glitches" within totalization, this leaves room for the possibility of a response that could combat such disclosure. In this dissertation, I aim to offer one characterization of this alternative mode of disclosure.

To clear the groundwork for the next chapter, I now explore a few preliminary responses that seem reasonable, yet are ultimately naïve. I reject them for the reason that they are defective at an ontological level. The naïve response is of two primary kinds. The first group seeks to change their actions substantively by reorienting their lifestyle toward a recognition of technology's control over their lives. As such, they consciously reject modern technology and attempt to build a life apart from it. Here, I locate "hippies" who would go back to the land, "off-gridders", and primitivists. Being that these are broad subsets of people, their reasons for rejecting technology would be too numerous to list. What marks these naïve responses as inadequate at an ontological level is that, while they might indeed reject technology for its enframative character, they do not reflect upon what the appropriate character of their *reaction* should be. They only acknowledge that modern technology is problematic and therefore choose to reject it.

Heidegger warns against such an ill-considered answer. The reaction to modern technology should "in no way confine[ ] us to a stultified compulsion to push on blindly with technology or, what comes to the same, to rebel helplessly against it and curse it as the work of the devil" (Heidegger 1993, 330). The problem is that the naïve reaction does not identify or endorse a *considered* alternative form of disclosure. For example, the hardlined primitivist assumes that *all* technology needs to be rejected. And perhaps it should be. But one must investigate the nature of technology further to find what ought to be endorsed, what ought to be rejected. Heidegger provides a way out of this dilemma by identifying those elements of technology that have historically revealed the world in a way other than as enframed. This character of this alternative revealing is the subject of the next two chapters.

The second kind of naïve response largely has people remaining with their pre-reflective actions. However, their thoughts about the performance of those actions changes. That is, the conceptual realization of the nature of technology does not transform into substantive action. Here, I locate so-called “ironic detachers” and cynics. Ironic detachment allows one to keep one’s life “at a distance”, as Sue Turnbull recognizes (2008, 28). By reorienting one’s internal reasons for doing an action, the ironic detacher renders those actions more psychically palpable to herself. There are two kinds of ironic detachers. The first simply makes a joke of life, revelling in its absurdity. Hence, Vice News’ slogan: “Exposing the absurdity of the modern condition”. Because everything is a joke, one does not have to “play for keeps”, in the words of Bob Black (1985, 25).

The alternative occurs when one sees one’s own actions, nearly identical to those around them, as more “authentic” than the actions of others. This stance met its apotheosis in 90’s and early 00’s hipsterism. Even if this strain of ironic detachment results in a change in action, typically this is only superficial. For example, millennial hipsters might deplore and vehemently tell others how digital photographic technology (smartphones, etc.) has taken the “soul” out of photography. So, they choose to apply a sepia photo filter to their digital photos to make them look “vintage”. They then, of course, never fail to post these more “authentic” photos to their social media accounts. This behaviour becomes doubly ironic when the hipster takes a photo with a vintage camera and then consequently takes a photo of that photo with her smartphone.

The perhaps more depressing version of the ironic detacher is the cynic. Like the ironic detacher, the cynic largely carries on doing what she was doing before she adopted the cynical stance. However, her mental attitudes toward her actions change. Cynicism is a nihilistic stance in which the agent realizes that nothing ultimately matters. One action is just as good as another, so she might as well carry on what she was already doing.

Note that the reaction to cynicism in the form of New Sincerity, as espoused by David Foster Wallace, does not change one's behavior in an appreciable way. The New Sincerity movement seeks to find meaning in seemingly soul-crushing moments of the modern condition, such as standing in an endless line at the grocery store (*cf*., Dreyfus & Kelly 2011, 38*ff*.). The abyssal willing of significance into one's everyday mind-numbing tasks is, again, just a change of mental attitude and not a change of action. At the same time, the New Sincerity movement is inherently conservative. It seems that any technological paradigm (or similar societal discontent), so long as one wills significance into it, can become palatable to this form of neo-Stoicism. The fact that David Foster Wallace committed suicide should not be lost on the reader.

The ironic detacher, the cynic, and the New Sincerity proponent each fall on the former side of the coin Heidegger presents above. While the back-to-the-land proponent 'curses technology as the work of the devil' and rejects it, the aforementioned three largely continue their prior actions with a new mindset. When it comes down to it, these three reactions are not materially different than those who, 'stultified' in the face of technology, forge on ahead as though there were no alternative. The worst of these is Wallace's reaction, for it advocates for a smiling helplessness: One cannot even permit oneself to be rightfully angry.

In the end, the back-to-the-land approach is deficient on the side of thought. The other three approaches are deficient on the side of action. The former does not *think* about what the appropriate ontological mode of disclosure should be and forges ahead blindly. The latter, however, becomes petrified by thought, resulting in inaction. The appropriate response to technology must incorporate both thought and action. At the same time, the response must identify and adopt a new form of disclosure than will overcome enframing. However, at this early juncture, it is not known what kind of disclosure to adopt. Without a substantial account of an alternative mode of disclosure, one is left haphazardly trying possibilities, each one as good as the other. In the following chapter, I transition to Heidegger, who gives a more considered answer.

[1] Thanks to Mark Migotti for this suggestion.
[2] Importantly, it is not as though Heidegger invented the philosophy of technology after the 1920's. To say that we ought to, again, pursue the philosophy of technology is to pick up on a realization that Aristotle himself saw as questionworthy (see *Nichomachean Ethics* 2001, 1094a5-10, for example).
[3] The question of whether other animals use tools, I think, is a given. But while animals may employ technology, *they do not ask after the nature of it*. For a parallel argument, see Part 1, Lecture 1, in Heidegger's *What is Called Thinking*, where he argues that apes have 'grasping appendages' but not hands. The two are separated by an "abyss of essence" (1968, 1-18).
[4] This revealing can either occur authentically or inauthentically.
[5] It is in this sense that technological disclosure is 'totalizing' for Heidegger. I return to the importance of this term at the end of the section covering reverse-adaptation.
[6] Keep in mind that Heidegger's (and indeed my own) ultimate point is that *something important is lost* when technological modes of revealing overrun other modes of revealing (which have perhaps existed in the past but also perhaps have not been discovered yet). While not now dealt with at length, this question of an alternative form of disclosure serves as the centrepiece for the remaining chapters.
[7] Heidegger would argue that capitalist language is just a subspecies of technological language. For what is making all the world commodity and open to exchange via universal currency other than seeing the world as standing-reserve? For a study outlining how Heidegger would respond to "techno-capitalism" see Brockelman (2008).
[8] An apocryphal tale has it that the grieving Descartes even constructed a clockwork version of his deceased daughter, Francine.
[9] In the specific sense of Aristotle's *hai energeiai*. I expand upon this further in Chapter 5, which discusses Aristotle and *poiesis* in two forms, the natural (expressed as *physis*) and the human (expressed as *techne*).
[10] For now, this discussion must take the form of a promissory note. I return to an extended examination of enframing in relation to other ways of disclosing the world in Chapter 4 in the section on Rojcewicz's interpretation of Heidegger.
[11] This isn't to say that technology has any "spooky" agency. Instead, at first glance, one can simply note that some technologies (e.g., the power systems that many Canadians need to survive harsh winters) come to be indispensable in the same way the currency is for negotiating societies.
[12] To say that a technology has an end in this expanded sense means more than saying it has a "use-case" to be fulfilled. The functioning of technologies and the technological apparatus at large comes to call upon us in the ways I outline below. I suggest that in shifting human ends to adapt to the *continued functioning* of technology, people come to serve the ends of technology as such—and not just those of individual technological artefacts. This is synonymous with locating the "motive force" behind technology at the level of world-disclosure.
[13] Heidegger has a complex relationship with the notion of 'totality'. Drew Leder (1985) presents a "three-dimensional structure" of technology's process of totalization (246-7). The first is "noetic", which concerns how the subject may encounter itself (246). The second is "noematic", which concerns how the subject experiences, characterizes, and depicts objects (247). The third is the "interpretive dimension", which concerns what subjects see themselves as doing when attempting to glean meaning from an object or circumstance (247). Leder uses the example of the painting of a rock: "[A]t one point in history the painting of the rock might be seen as primarily expressive of and valuable insofar as it reveals the essence of the rock as it is. At another time the painting might be seen as expressive primarily of aesthetic intentions (247). According to Leder, technological totalilization increasingly comes to range over all three of these structures, blocking out the opportunity for other modes of revealing to hold sway (247). Technological thinking and "metaphysical" thinking (both related) are repeatedly expressed as investigating the 'totality of beings' in terms of predetermined categories: seen as resources or collections of properties. Hence, a way to characterize this is the way technological revealing has dominion or precedence over other modes of revealing.

Cont'd: William Horosz, in *Search Without Idols* (1987) underlines the different senses of 'totality' in Heidegger and attempts to tease out a unified concept taking into account Heidegger's entire career (301-44). He investigates 'totality' in the positive sense of authentic world-building. Since humans are responsible for the ontological disclosure of the world, their work consists in viewing the things in the world in terms of a totality, which is Being in itself, left to its own sway of revealing and concealing. Ultimately, I interpret this to be Being in its guise of fourfold world-disclosure, where one thinks things (beings) always in terms of Being as fourfold. The preceding remarks will only come into their own in the fullness of this dissertation.

[14] Another example: Troy Sternberg argues that the Egyptian Arab Spring in 2011 was a result of globally high wheat prices (2012). A drought in China, which caused crop yields to collapse, led to a run on wheat in the global market. In turn, countries such as Egypt could not afford such high prices. This led to increasing costs for staple foods. From this, Sternberg suggests that the increasing costs of these foods for Egyptian consumers led to political instability that led to the first street clashes. Technology has enabled interdependencies at a global and unprecedented scale. Such disruptions, one can imagine, will only increase in the future.

[15] Organic food bought in a big-box store is also a regularized commodity.

[16] What Heidegger wants, like Hegel, is a robust socio-cultural framework to fall back upon in which one can exercise meaningful choices. Where the late Heidegger and Hegel differ is probably in their commitment to institutions and regulation as a backdrop to exercise one's choices, as the late Heidegger lionizes the chthonic lifeways of rural populations.

[17] Ultimately, I'm not prepared to die on the hill of totalization. If the reader should like it so, I'm perfectly comfortable with there being other forms of disclosure, but I am inclined to believe that technology takes pride of place and ranges over other modes of disclosure.

[18] This is not to mention that one's interests can be compiled as data and compared with other datasets. A compatible "match" is when one's data pairs with another's.

Chapter 4: Thanking and Guardianship

Introduction

In this chapter, I take up two responses to the problem of technology. The first response is Heidegger's, which focuses on cultivating an authentic form of thought and language that lays the groundwork for a kind of world-disclosure that is contrary to enframing. My own response focuses on craftwork, and supplements Heidegger's in the direction of positive action. Heidegger's responds to the problem of technology by forwarding an alternative disclosive outlook to enframing called *guardianship*. 'Guardianship', which I define as the mood of actively caring for the world by 'letting it be', is a practical response to the realization that the world is worth being thankful for. The way toward guardianship, I argue, is through the perspective of craft. I introduce craftwork in this chapter, before turning to it exclusively in the two remaining chapters.

Heidegger is fond of saying, after Friedrich Hölderlin, 'Where the danger grows, so too does the saving power' (*cf*., 1993, 333). To this end, he locates the solution to the problem of technology within the origin of technology itself, which he reconstructs through the Greek notion of *techne*. Heidegger takes poetry as the paradigmatic example of *techne*. While enframing pre-determines the world as resources, what poetic thinking and language do is disclose the world as sacred (in a secular sense): worthy of thanking/guardianship in such a way that it can never be taken as mere stock.

If Jacques Derrida has taught anything of worth, it is that perhaps the most important part of a philosopher's body of work are those marginal notes and paths not travelled. For this reason, I think it is only right to pull on the thread of *techne* in a simultaneously new and old direction, *techne* thought of as craftwork. I insist that there is a tension in Heidegger's philosophy between his recommendation that one must adopt a stance of preparatory waiting for the world to change (i.e., through purification of one's thought and language) and the demands of the guardianship mood itself. Guardianship requires positive action in the world, action which should be informed by *techne* considered as craftwork.

What craft does is combine the two halves of the ontological coin from the end of last chapter. It neither forges on blindly ahead with technology (such as the Cynic or the New Sincerity proponent) nor curses all technology as the work of the devil, forgoing it altogether (such as the primitivist). It couples a considered ontological response together with an effort to realize this newfound disclosive mood in the world. It does this through *building* a world in which both things and humans can find ontological shelter, a world in which they are capable of *dwelling*. It should be noted that in this chapter, craft emerges in continuity with language and thinking as their practical and worldly counterpart. Craft does not properly come into its own as a distinct mode of being-in-the-world (i.e., as a tenable response to the problem of technology) until after this chapter.

Poetic Language

Heidegger sees language as a crucial way that enframing holds sway over the world today. Language, in its disclosive character, phenomenologically lights up the world. Because people only have technological ways of relating linguistically to the world in their average everyday dealings, they are closed off from other world-disclosures that would combat enframing. Heidegger argues that authentic poetic language has the ability to disclose the things in the world as worthy of safeguarding. The problem is that this language is missing, or more precisely, has been lost. In this section, I explain Heidegger's evolution of thought on language throughout his career to better showcase what is so striking about poetic language.

In *Being and Time* ([1927] 1962) and in his earlier lectures on Aristotelean philosophy from which much of the material was drawn ([1924] 2009), Heidegger locates language as an existential feature of human beings. Language is inquired after primarily at the level of its functioning in regard to humanity's existential character. That is, it lets them get along with their projects and communicates with others in expressing beings in the world. Beyond this, language is a fundamental mode of disclosure that, together with *understanding* and *mood/attunement* (discussed below), shows that humans are *beings-in-the-world*—as opposed to Cartesian (or even Husserlian) free-floating consciousnesses.[1] Each mode of disclosure is meant to show not only that it is impossible to think of humans as apart from the world, but to show that such thinking of consciousness is crucially dependent, first and foremost, on an understanding of them as inseparably worldly creatures. That humanity's existential character can be *misunderstood* is a symptom of uprooted language that is disconnected from their being-in-the-world.

The early Heidegger distinguishes between discourse (*Rede*) and idle chatter (*Gerede*), a product of "the They" (1962, I, §4, 164). 'Idle chatter' depends unthinkingly on the opinions of others (e.g., whatever "they" say and do) and does not take language itself to be *at issue*, insofar as it is a disclosive phenomenon. Existentially speaking, idle chatter allows a person to "fall" carelessly into her own life. When asked why she wants the white picket fence, 2.3 kids, and so on, she just says, "That is what one does" (see Heidegger 2009, 43). Everyday language, taken as idle chatter, can be said to be fallen—given that people no longer care whether it authentically names things in the world. In other words, everyday language falls unthinkingly into the lifeways of the dominant culture. Technological language can similarly be characterized as fallen, fallen into a way of talking about the natural world and each other as inherently calculable. Everywhere people are referred to today as "labour forces", "poll data", or "COVID-19 hospitalization numbers" with little fanfare.

In contrast to *Gerede* stands *Rede* (discourse) and, according to Heidegger, it is seldom used anymore. Discourse lets a being stand forth in the "how" of its being (2009, 16-17). In other words, it is language that allows the matter at hand to stand-forth in a way that "bring[s]-the-matter-to-self-showing" (16). Heidegger cites Aristotle's definition of humankind as *zoon logon echon* ("rational animal" or more precisely, "the living being which has *logos*") as indicative of language that allows human being to stand-forth in its "how" (16). It is impossible, for Heidegger, to think of human being *without* language: the two are, in Heideggerian terms, equiprimordial with one another.[2] While the definition provided by Aristotle is philosophical in nature, discourse occurs just as much in one's everyday dealings.[3] It pertains to the way one "makes manifest what [one] is talking about, and thus makes this accessible to the other party" (1962, 56). Both *Gerede* and *Rede* have existential bearing on humankind, for their use on an individual level determines in part whether someone, in her existential character, is living authentically.

The later Heidegger, particularly in the emblematic lecture, “Language”, evolves his thinking on the nature of language (1986). His focus moves from an emphasis on the origin of language as an existential “activity of man” to a focus on language as having a “divine origin” (1986, 143; *cf*., Klemm 1986, 136). Another way to put this is to say that it marks the transition from the study of humans as *users* of *Rede*/*Gerede* (authentic vs. uprooted language) to a study of the nature of language as such. Where does language come from and what does language (in its most authentic form) do? I start with the first question.

Heidegger answers that language comes from a divine origin. There is nothing mystical about this idea. When Heidegger talks about the divinities or gods, he always means to point out the peculiarity of things that are given, with no explanation as to their origins. In other words, what he means is that language is something that was granted to humans. The origin of language, trivially, is biologically within humans as beings who have the appropriate “meat” or organs capable of forming speech. But ancient proto-humans did not in any way *choose* to become the beings who speak. At the same time, it is uncontentious that proto-humans did not choose what words to use any more than they chose to speak in the first place. Beyond this, no human chooses language. Rather, they are born into it. In other words, language comes to humans as a gift.

A gift for what? Language is first a gift for living. It allows humans to disclose things in the world as this way or that. One can “mark”, by way of language, this or that entity as dangerous (e.g., the predator) and therefore avoid it. In this way, language allows humans to navigate the world. At a deeper level, language is that which allows humans to dwell upon the earth. That language allows humans to dwell means that language “makes room” or provides a clearing for things to show up for humans such that they may live, provide for themselves, be at home in the world, and ultimately find themselves in *eudaimonia*. Language brings the world forward into familiarity. A creek in a foreign land is different than the creek running alongside one’s home. In having a good name for it, one indicates that they know it intimately. Humans are at home in the world when they have not just a generic way of addressing things but a *name* for things. While other animals have been given strong noses, teeth, and claws, humans have been given language so that they may open up the world as an intimate, homely, place. While language still helps humans navigate the world today, under conditions of enframing, uprooted language denies humans a home. For example, walking a forest path, one no longer knows which plants cure, which plants harm—because one no longer knows what is "medicine", what is "poison". All plants are to be avoided. Dwelling language is always intimately connected to the lifeworld from which it is part.

For Heidegger, at its most essential level, language is the 'silent address of Being' or the 'peal of stillness of Being' (*cf*., 1986, 154). Human beings are uniquely the beings who ask after the nature of Being. Without them, assuredly there would be brute existence. But Being is composed of (but not reducible to) appearances, phenomena, which show themselves now this way, now that, according to how they are disclosed. As the natural world is silent, without language, so too is Being. Language is that which *gives voice* to Being such that aspects of it may come nearer. This is what Heidegger means when he says that language bids beings closer: "The primal calling, which bids the intimacy of the world and thing to come, is the authentic bidding. This bidding is the nature of speaking" (152). Authentic bidding happens when an utterance allows a thing to come forward in its nearness in what Heidegger calls "dif-ference" (152).[4]

Authentic bidding, dif-ference, allows a thing to *carry its world along with itself* when called. It is a humble calling that *defers* to the thing. In other words, it is language that allows a thing to dwell within its lifeworld. It is the delicate process by which one calls a thing toward oneself, while not violently pre-determining its essence before it even arrives on the scene, as is the case with enframing. Dif-ference is, therefore, the process by which utterance bids a thing come near while simultaneously allowing it to rest in repose in its own lifeworld. Language that bids is even more disclosive than discourse, for it does more than merely make clear what one is talking about. It allows the thing to presence itself according to dif-ference. Language that preserves this dif-ference is called *dwelling language*. By allowing things within the world their proper dwelling place, humans in turn give themselves a place to dwell.[5]

It is the poet who founds this dwelling language (or indeed, rescues it from its forgotten origins). The poet, particularly the romantic nature poet, of which Heidegger finds the highest example in Friedrich Hölderlin, is able to short-circuit customary language, which has become uprooted from the original poetic namings of ancient peoples. As Heidegger says, the poet does not *invent* language in the sense of coming up with gobbledygook. In speaking about a poem by Georg Trakl, he notes that "not a single word …, taken by itself, would be unfamiliar or unclear" (1986, 145). Instead, the poet makes customary language into dwelling language by *finding* its dwelling character again. What poetry does is reveal *things* as part of a lifeworld such that they can never be taken as mere stock.

Martin Shaw's short poem (2015) about the little river that is close to his heart is indicative of this stance:

> Green Curve
> Udder of the Silver Waters
> The Hundred Glittering Teeth
> Small Sister, Dawning Foam
> On the Old Lime Bank.
> Five names for the River

How one could put a hydroelectric dam on the 'udder of the silver waters' is difficult to imagine. Notice, for example, how Dane-zaa and Cree names for the Peace River region are silenced in British Columbia's rendering of the area—for the purposes of damming it up—as 'Site C'. The enframative naming, Site C, makes the river able to be understood all at once as a site, one among many, in which flowing water is transformed into energy. In each site, the flowing water is everywhere the same. Site C is therefore no different than Site B, with respect to energy production. Indeed, its entire regional lifeworld is cast away in favor of a focal matter, the cubic meters of liquid passing through the turbine per unit of time. Each name in the above poem, in contrast, bids the river come nearer while doing two things.

First, it lets the river repose back into its own lifeworld, the lifeworld in which humans and animals may use the lime trees for shade along its bank. Even the fact that it is lime, and not *Tilia*, linden, or basswood, speaks to the fact that Shaw's river is part of his own English lifeworld near Dartmoor. Second, it leaves the river to its own *mystery*. Like a smile, the river's glittering teeth in the sunlight bid one to come near. Yet, while each name allows an aspect of the river to shine forth, no name or even a combination of them all deigns to think that it can capture or ensnare the river in its totality, as something fully determined.[6] Poetic language operates in this dual way.

Heidegger says that “[l]anguage itself is poetry in the essential sense” (2001a, 1999). All authentic language has the character of poetry in that it is a form of *poiesis*. It brings-forth a world in the sense of dwelling, which homes a thing in its lifeworld while asking it to draw near. Any language that does this has the character of poetic language. That this language is now a rare occurrence only shows how far humanity’s capacity for intimately relating to the world has fallen.

Thanking

What poetic language reveals, Heidegger claims, is that the world is holy. That is, the phenomenological sight of the poet sees the world as composed of sacred things and not resources. At the level of being-in-the-world, the appropriate responses to a world that is holy—which means that it is a world that comes to humans as a gift—are two coextensive modes of disclosure, *thanking* and *guardianship*. In this section, I take up thanking. ‘Thanking’ occurs in thought and language, as a matter of granting things their proper place. To thank things in the world properly is to preserve their dif-ference, bidding them come near while still allowing them to home themselves within their world. The enframative stance, in contrast, violently *demands* that all things be made available as input into machination. This does not settle things in the world according to their essence but pre-decides their essence as standing-reserve.

In his most important work on Hölderlin, *Holderlin’s Hymn ‘Remembrance’*, Heidegger identifies the poet’s fundamental phenomenological mode of disclosure:

> The fundamental attunement of the thinking poet. Thanking (2018, 166).[7]

For Heidegger, the poet cannot help but respond in terms of thankfulness to the revelation that the world is a holy place. In this passage, one sees that the genuine poet is also a thinker (Hölderlin was an accomplished thinker in his own right). This conflicts with the image of the divinely inspired poet—perhaps even driven to the brink of madness by the muses. The mad poet is like the psychopomp who acts in reverse, shuttling holy dwelling language to mortals. As Julian Young notes, the genuine poet, the thinking poet, properly combines the Dionysian and Apollonian impulses (2001, 96). That is, she also *thinks*. Both genuine thinking and poetry end up in thanking.

Heidegger scholars identify at least three wellsprings from which the disclosive mode of thankfulness of the poet/thinker might derive its impetus. At present, I begin with the (A) thanking inherent in genuine thinking, before covering two other wellsprings, (B) cosmic thankfulness and (C) practical thankfulness. While I introduce these wellsprings now, I refer to and make further use of them in the "A Challenge and Response" section below, which covers the Heideggerian idea of 'mood' and how one can come to adopt the thanking mood in one's own life. The problem there asked is how one might get from "here to there": i.e., how one goes from the *recognition* that the world is worthy of thankfulness (i.e., that it is holy/sacred) to the *adoption* of the thanking mood. I claim that the craft mood overcomes what might be considered shortcomings in other approaches.

(A) What does it mean to say thinking is thanking? If language is actually the 'silent peal of Being', then investigating language is the surest way to make that which is in question come nearer. This is the same tack he uses when investigating the origins of language. With this as a guiding principle, Heidegger attempts to let the language of thinking speak for itself (1968, 138*ff*.). To this end, he traces the German verb, *denken*, to its roots in the Old English noun, *thanc*. The connection is just as clear in the English "think" and "thank". Through the root, *thanc*, Heidegger sees that 'thinking' is derived from both "thanking" (or gratitude) and "thought".[8] What is thought is held in memory, which he calls the "gathering [together] of thought" (138). He notes that authentic thanking gathers together one's thoughts in such a way that "gives thanks" to what is thought. From High Alemannic, he notices that when a line of thinking or matter is “thanked”, it is not disposed of and forgotten about: “Disposing does not mean here sending off, but the reverse: it means to bring the matter forth and leave it where it belongs. This sort of disposing is called thanking” (Heidegger 1968, 146). Thus, analogously to what authentic language does, authentic thinking aims to allow the things thought about to dwell where they belong in memory—that is, in their proper dwelling place.[9] Objects of enframative thinking can have no dwelling character, for *every* forest viewed enframatively as a collection of resources is the same as every other forest. The authentic thinker and poet are united in the way that they both seek to give the things in the world a home. This is the process of recalling a thing in memory that simultaneously allows it to rest within its lifeworld. Therefore, in this first sense, the *process* of authentic thinking itself is a form of thanking.

Heidegger claims that humans should also be thankful for being granted the gift of thinking. In “Language”, Heidegger says that human communication has a divine origin that comes from beyond them. That is, it is granted to them. Ancient proto-humans did not choose to become the beings who use language. Similarly, they did not in any way choose to use fire and become “civilized”, as the Prometheus myth intimates. Thinking is another gift, the gift that Heidegger calls humanity’s greatest, because it is closest to its essential nature:

> The things from which we owe thanks are not things we have from ourselves. They are given to us. We receive many gifts, of many kinds. But the highest and really most lasting gift given to us is always our essential nature, with which we are gifted in such a way that we are what we are only through it. That is why we owe thanks for this endowment, first and unceasingly (1968, 142).

Authentic thinking always occurs in the context of one’s being-in-the-world. That is, human beings are the *site* of thinking: the beings for whom thought occurs and for whom thinking itself is questionworthy. Genuine thinking, which reveals the world as worthy of thanking, is closest to humanity’s essential nature, he claims, because it is *uniquely* human. Furthermore, one can only “live up” to one’s essential nature in thinking. To truly *show* and *give* thanks is not just to give a gesture of thanks and move along one’s way. It is to *use* that which humans ought to be thankful for to its highest extent.[10] To *hone* the craft of thinking is to recognize that one can get better at this process, can better come to call-forth the things in the world in a way that allows them to dwell.

Current thinking, Heidegger claims, is still stuck at the level of technological revealing, as evidenced by the rising “need” for those disciplines that serve technological advancement. Even contemporary thinking about thinking is largely technological in nature: A scientist or philosopher might conjecture, for example, that thinking is reducible to chemical processes in the brain. Here, one mistakes one’s own nature, just as one mistakes the nature of the world as something inherently calculable and quantifiable.[11] Thought can only be described as mechanical because mechanical thinking has already overrun other modes of disclosure.

To be thankful that one has been granted thinking is to be open to the question of there being other avenues of thought that are possible. The essence of thought is *poiesis*, which is the human capacity to bring things forth. Thinking illuminates things in phenomenological light. Proper thought does not let one’s thinking rest within well-trodden paths but attempts to limber one’s mind enough to imagine other avenues of thought that disclose the world beyond that which is mechanical, calculable, and quantifiable.

(B) Another wellspring for the poet/thinker’s attitude of gratitude is the world itself in its sheer stupendous existence. This is the realization that the world’s existence is of a holy or granted character. Its first intimation might come to one in the wonder one experiences when looking up at the limitless night sky. One might realize that since humans had no part in its creation, it comes to them as granted. Indeed, on especially limpid nights, magical nights, the cosmos itself seems like a gift … One should be so lucky to experience it. Julian Young identifies this mode of thankfulness present in Heidegger’s thought as “cosmic thankfulness” (2001, 111). Hölderlin is an essential witness to this kind of thankfulness (111). This mode of thankfulness is identified by Heidegger within the most basic of wonder-causing ontological questions, proposed on the first page of *Introduction to Metaphysics* is: ‘Why is there something rather than nothing?’ (2000, 1). Cosmic thankfulness stems from questions such as these, for it is an expression of wonder and gratitude at the fact that there *is something* rather than nothing.

Beyond the mere recognition of this fact, the poet/thinker expresses this wonder in the form of holy agitation and excitement.

The same cosmic *jouissance* erupts from Walt Whitman's poetry in *Salut au Monde!*:

> O TAKE my hand Walt Whitman!
> Such gliding wonders! such sights and sounds!
> Such join'd unended links, each hook'd to the next,
> Each answering all, each sharing the earth with all (1855).

Full cosmic thankfulness is an experience of the world as full of "divine radiance", as might not having been … and yet (1-5). At the same time, it is wonder at one's own existence, as might having not been … and yet. Furthermore, Whitman displays his surprise that the world should be of such an *interesting* character: so full of wonders, so full of things to take pleasure in, so full of others to enjoy one's experience with. Whitman is astounded not only by existence or his existence, but that he should be here now—to witness it, and what is more, capable of recording in the memory of language the gift that it is.

(C) A third kind of thankfulness stems from practical, as opposed to ontological, matters. Hubert Dreyfus and Sean Kelly in their Heideggerian work, *All Things Shining*, identify this kind (2011). One ought to be thankful for that which one ultimately has no control over—that which comes to one as a holy gift. The Homeric Greeks were especially sensitive to where the line between human willing and divine granting was drawn:

> They were constantly sensitive to, amazed by, and grateful for those actions that one cannot perform on one's own simply by trying harder: going to sleep, waking up, fitting in, standing out, gathering crowds together, holding their attention with a speech, changing their mood, or indeed being filled with longing, desire, courage, wisdom, and so on. Homer sees each of these achievements as a particular god's gift (82-83).

Thus, the Greeks thanked Hypnos for a good night's sleep, Hermes for sweetness of word, and Athena for good judgment. Homer, the poet *above all others*, suffuses his writing with this holy thanking. It is Athena, for example, who guides the flying spears of the traitorous suitors off course, when any of them could have dealt a mortal blow to Odysseus, Telemachus, or their compatriots (1998, Bk. 22). While Odysseus himself is full of guile, a sharp tongue or quickness of wit will not turn away a spear. It is good fortune, which he had no control over, that saw to it that the suitors did not slay him first.

One might think of this third kind of thankfulness as stemming from luck. One can count themselves lucky when things go well.[12] However, if luck is thought of as mere random chance, then this is to get it wrong. Rather, luck comes to one as a gift, as something that might not have gone in one's favor yet did—perhaps against all odds. The appropriate response is gratitude. Indeed, quickly after dealing with the suitors, Odysseus arranges for the hall to be consecrated (1998, Bk. 22, l. 540-50).

I have presented three ways to arrive at the thanking response: through uncovering the nature of thinking itself; through the radical wonder at the fact that there is something at all rather than nothing; and through the realization that many things in life that go in one's favor are not a result of one's own doing. I now explore ways one might come to show this gratitude and argue that incorporating elements of craft into one's response is an appropriate way forward. With craft on the table, I reintroduce the issue of how one might come to adopt a thanking response in one's own life. I ultimately maintain that craft goes some way to filling the gap between a recognition that the world is worthy of thanking and the full-fledged adoption of this stance.

Guardianship and Craft

Guardianship is the practical mode of thankfulness, at the level of human being-in-the-world. It includes the steps one takes in one's own life to show thanking. The character of guardianship's response is now at issue. Throughout his career and right up to the very end, it appears as though Heidegger cautions against taking direct action to bring-forth the world in a way that combats against enframing revealing. He is content, rather, to advocate for preparation, in thought and language, for the coming to be of a new world with a new orientation toward technology. Though, as he admits, there is no guarantee this will occur. He contends that revealing the world as worthy of thanking in thought and speech is the highest deed, the highest act of thinking (Heidegger 2008i, 217, 246, 262; 1993, 324). In other words, this is the poetic *bringing-forth* of the world under a phenomenological light that is contrary to enframing. Human bringing-forth, is always the work of *techne*, craft. The thinking mode of *techne* is the most authentic form of action for Heidegger, for thinking is most intimately related to humanity's being.

Heidegger thinks that a society that rushes on ahead toward a confrontation with technology, while not having a preparatory groundwork laid out before them, will inevitably err. What he ends up advocating for, then, is the laying of a foundation for disclosive change in thought while advocating for an attitude of waiting in terms of "real world" actions. This can be described as the difference between "positive" and "negative" action, respectively.[13] I argue that the appropriate response to the problem of technology must account for both world-building at the level of thought/language and positive action in the world, through a return to craft lifeways. Guardianship cannot content itself with preparatory waiting but must also *build* a world that serves as a bulwark against enframing thinking. This is the realm of *techne*, craft. Importantly, this is not to arbitrarily "tack on" *techne* to Heidegger's ontology, for it is a continual preoccupation in his philosophy as early as 1924 (*46ff*., 140*ff*.). But while Heidegger sees *techne* primarily in terms of poetry/thinking, I see it in its fullest sense, as requiring craftwork and other elements of positive world-building in order to fulfill its call. I suggest that now, more than ever, the combination of an ontological response together with a well-informed practical response is what is called for.

For a first clue, I investigate what Heidegger says about the character of thinking's engagement with real-world things. In "The Thing" (2001b), Heidegger seems to indicate that to engage with things in the world would be to go astray in the task of guardianship. This would seem to damn the positive response from the beginning:

> Since Being can never be equated with the precisely actual, to guard Being can never be equated with the task of a guard who protects from burglars a treasure stored in a building. Guardianship of Being is not fixated upon something existent. The existing thing, taken for itself, never contains an appeal of Being. Guardianship is vigilance, watchfulness for the has-been and coming destiny of Being (2001b, 182).[14]

Heidegger's prose is deceptive here and seems to indicate a lofty or aloof approach. He says that to guard Being, as disclosure of world, *cannot* mean to guard this or that entity, since Being is distinct from entities (I use the word 'entity' here for linguistic clarity). At the same time, he appears to say that it is a failing to pursue entities themselves as an ontologically disclosive endeavor, because those entities cannot contain a fuller ontological picture. However, he clearly means to separate out 'entities' both in terms of an enframative distanceless object and 'entities' taken as *things* which are near. I continue to unpack this passage in the next few paragraphs.

As Heidegger points out, 'things' are a special category of entities that are properly part of a lifeworld: Martin Shaw's river, 'the udder of the silver waters', is a thing. Things are *near* to one: ready-to-hand and intimately familiar to one as part of one's dwelling place. In contrast, the modern technological world is full of "distanceless" objects which are, paradoxically, all equally near: Heidegger points to the ease at which humans now traverse great distances and the overload of flashing information from the world-over that bombards them daily (164). Every-thing, too, (i.e., the category of "consumer goods") is now ubiquitously available (just a "click" away) and completely inscrutable as to its origin. Since there can no longer be any "remoteness" in such a world, there can no longer be nearness in the true sense of dwelling familiarity: "What is nearness if, along with its failure to appear, remoteness also remains absent?" (164).

By illuminating things as loci of divine radiance, as Martin Shaw did with his river, the thinker/poet in turn shines light on Being as holy (worthy of thanking/safeguarding) as such. What Heidegger attempts to do in "The Thing" is akin to what Shaw does in his poem: to illuminate a thing such a way as to simultaneously show its lifeworld along with it (in Shaw's case the river, in Heidegger's case, the jug).[15] This is why Heidegger says that an entity taken by 'itself' (i.e., without its lifeworld) can 'never contain the appeal of being'. Being can never be safeguarded through such lonely entities. In colloquial terms, an entity ought to be spoken and thought about (and what is more, *used*) in such a way that it wears its world on its sleeve: as a *thing*. In this way, things always bring Being (as world) along with them. One should see that even if guardianship must always aim at the protection of Being, as Heidegger says, to pursue

Being at the level of things is to not leave things *or* Being behind. To protect one is to protect the other.

While I take the matter as settled, it is instructive to view the passage above regarding the precedence of guardianship over Being in terms of a previously referred to observation Heidegger makes in the introduction to *Being and Time* (1962, Int. 1, §2, 27). There, he says similarly that the question of Being cannot be reducible to entities. (Here, he still uses the language of Being/entities). However, he notes that as finite beings, humans only have access to entities through which to begin an inquiry into Being. Therefore, the question of Being is to be pursued *through* entities, the primary of which is *Dasein*, humans taken in their existential character. In his introduction to *What is Called Thinking?*, J. Glenn Gray mirrors this thought: "Yet thinking is inherent in man as a being-in-the-world. Hence learning to think is as much a discovery of our own nature as it is a discovery of the nature of Being" (1968, 23). In coming to grips with what it means to be human—the essence of which is to be a thinking being, one in turn comes to grips with the question of Being. That is, it is the thinking of humans that is responsible for Being's disclosure.

To safeguard Being, at one level, is to recognize that human beings are the *site* of the occurrence of Being. Therefore, to safeguard Being must, first and foremost, must mean to safeguard humans, as the essential occurrence of Being. Humans, therefore, must protect and preserve a conception of themselves, in both thought and language (e.g., through not allowing a technological understanding of humanity to run rampant). In other words, humans should properly be thought unabstractly, along with their lifeworld.[16]

Heidegger's position, at least at the level of thinking, is not lofty or aloof in the sense of being unconcerned with everyday things in the world. However, thinking about Being (the world) in terms of things such as jugs and human existential activity is still a long way off from positive action in the world. The question is how to move from thinking to considered action, since safeguarding seems like it demands a positive approach, the snatching of both humans and things away from enframative practices in the real world. The character of these actions would appear to require the movement beyond poetry/thinking toward direct engagement.

Heidegger's recommendations at first seem like a roadblock. Julian Young takes thinking/poetry as "negative", because they involve a passive watching and recording of the world (2002, 102). Indeed, it seems that *all* guardianship, for Heidegger, must be negative, (passive in character) since he repeatedly cautions that caring for things is a gentle process, one that lets beings be in the sense of "spar[ing] and preserv[ing]" (Heidegger 2008j, 353; Young 2002, 102). One might question after the nature of jugs, but one does not actively involve oneself with what might be called "worldly affairs". To guard a being, in this sense, would be to observe it, keep one's distance, and let it alone.

Heidegger has been criticized as a philosopher who seems to advocate against taking any positive ("direct") action to change the world's orientation toward technology. Instead, he advocates for waiting for a historical event that will change humanity's relationship to technology perhaps all at once. Certainly, the interviewer in the famous *Der Spiegel* interview thinks this is the case: "But can—and may—a thinker say: just wait …?" (Heidegger, 1966). In the interview, Heidegger at first seems to support this view, and he argues that thinking must properly come first: "[T]he will to action, which here means the will to make and be effective, has overrun and crushed thought. … [S]o far man has acted too much, and thought too little" (1968, 25). Heidegger clearly means to equate "action" with those actions that perpetuate enframing. This is synonymous with the person (or society) suffering from the "stultified compulsion to push on blindly with technology" (Heidegger 1993, 330). Elsewhere, he says that thoughtless action must be rescued from its modern association with technology which is equivalent to "busywork" in service of keeping modern technological society running (*cf*., 1968, 15).[17] On the other hand, another type of thoughtless action can be proposed. This second kind would be a general agitation toward today's world, a desire to "tear it all down", with no clear ontological picture as to what is to be done. This, too, is action of the wrong character.

Accordingly, one needs to rethink action so as to tear it away from enframing/thoughtless agitation and associate it with guardianship. Heidegger cautions the interviewer that

> [i]t is not simply a matter of just waiting until something occurs to man within 300 years, but rather to think forward … . Thinking is not inactivity, but is itself by its very nature

> an engagement … . It seems to me that the distinction between theory and practice comes from metaphysics, and the conception of a transmission between these two blocks the way to insight into what I understand by thinking (1966).

Heidegger is referring derisively to a traditional Cartesian view of humanity, which can imagine separating out thinking from action, mind from body. The task of *Being and Time* is largely to correct this misconception of humans through paying careful phenomenological attention to their being-in-the-world. As a phenomenological point, human being cannot be thought apart from the being who *does*. So, to say that Heidegger has a prejudice against *studying* action in his writings would be altogether too strong, for he clearly thinks it has been with his thought from the beginning.[18] Nevertheless, he does dodge and deflect the interviewer's question in the way the interviewer intends it. The interviewer evidently is not defining Heidegger's mode of "academic action"—whether or not one is doing authentic thinking, poetry, or both—as anything different than waiting, which for the interviewer, is a form of negative/passive inaction.

The question becomes whether one can rescue in Heidegger's work a role for positive action, action in the world outside of thinking and poetry. Julian Young thinks this can be done. Paradoxically, Young finds the wellspring for this within Heidegger's (already mentioned) stance that says that caring for things is a gentle process, one that lets beings be in the sense of "spar[ing] and preserv[ing]" (Heidegger 2008j, 353; Young 2002, 102). He finds that Heidegger's "of-repeated phrase" that seems to necessitate that guarding over something is always a passive "letting [it] be" is a misdirection for the uncareful reader:

> Saving [practicing guardianship] does not only snatch something from danger. To save properly means to set something free into its own essence (Heidegger 2008j, 352; see Young 2002, 102-3).

'To free something into its own essence' emphatically does not mean to shrink back from things in the world entirely, becoming small so that the world may free itself. One might think that any positive action (say, the tapping of syrup from the maple) would interfere with the way the thing wants to unfold. This passage does not indicate that one should become, for example, a Breatharian, subsisting on nothing but breath—urged to stay in one spot, for fear of disturbing the world. Heidegger continues the passage: "To save the earth is more than to exploit it or even wear it out. Saving the earth does not master the earth and does not subjugate it [e.g. as resources], which is merely one step from boundless spoliation" (2008j, 352). What is indicated by this passage is not to shrink back from worldly affairs entirely. Instead, the character of saving, whether taken in a positive or negative sense, must be to preserve a thing's essence. However, sometimes this requires direct involvement with the thing at hand. Someone cannot remain idle in all instances and still call herself a guardian.[19] While this does mean to avoid enframative interaction with things, nowhere does this mean to avoid engagement entirely.

The *real* form of negative inaction is 'the stultified compulsion to push on blindly with technology'. One way forward recognizes that humans are the site of world disclosure and the channel through which things show themselves, so for humans to shrink back from the world in absolute inaction would be to ignore this responsibility. It is the daily actions that one participates in, which are part of an overall enframative world, that continue to perpetuate the enframative mode of disclosure into the future. This means that, given the totalizing dominance of technological disclosure, freeing something into its own essence may, at times, require significant positive intercession on its behalf.

Heidegger seems to recognize this when he says that the "[r]eal sparing is something *positive* and takes place when we leave something beforehand in its own essence, when we return it specifically to its essential being, when we 'free' it in the proper sense of the word into a preserve of peace" (2008j, 352). As said, freeing something into its essence may require direct intercession on the thing's behalf. Young, therefore, recognizes in Heidegger two forms of guardianship or "caring-for", which he terms "active" and "passive" (2002, 102). However, immediately after introducing them, he makes the caveat that these are inadequate or even misleading terms, being that all guardianship is properly positive in Heidegger's sense just outlined (102). Even *considered* holding back counts as a something positive for Young.

I take a few short examples to clarify. First, consider the old painting. In order to preserve its integrity, one might passively care for it by leaving it where it sits in the alcove of the old church. At the same time, one might take active measures to restore it instead of letting it pass away to the sands of time. Analogously, in the case of a forest, letting it be may mean to passively let it alone entirely, as a "preserve". But it may also be to take action to restore a thing to its former grandeur (*cf*., Young 2002, 107). The Nature Conservancy of Canada, for example, will purchase tracts of land that have been cultivated or overrun by invasive species and plant indigenous species in their place. In both former cases, one's action is in the form of a *considered* holding back. While passively letting the thing be, each action is positive in the sense of freeing the thing into its own becoming.

A guardian, properly, is a *steward* of the thing. 'Stewardship' is the knowledge of when to let a thing, a matter, or a person be and when to intercede on the being's behalf. To safeguard a child and allow her to come into her own being someday isn't just to let her "roam freely" as she may, but to insist upon protecting her and teaching her and *knowing* when to let her alone. Indeed, in affectionately interceding in her life, one sets her up for a day when she can be truly freed into her own being. In order to free a daughter so that she may enter into her own 'preserve of peace', which is to live up to her essence—to make her own choices and become her own person—requires continual intercession on her behalf in her formative years. The newly planted forest must be nurtured in the same way as the child. By interceding on its behalf during its early days, humans set it up for its eventual return to its 'essential being', in which the forest both becomes itself once again and can preserve itself into the future. To guard a painting, a forest, or a child is always positive in the sense of being watchful on behalf of that which is worth guarding—even if in guarding that being, one decides to let alone. It can already be seen, therefore, that both active and passive forms of guardianship are positive in the fullest sense. To 'let a thing be', in the sense of granting it repose within its world, is always positive in nature (Young 2002, 103).

That said, one cannot make the mistake of remaining purely within the passive stance. To let a child alone would be to damage her ability to become herself. The knowledge of *how* to bring a thing forth, which is the knowledge of *techne*, must come into play. This is a knowledge that knows which stance to adopt at which time, when to intercede, when to let alone.

To truly realize that the world is worthy of guardianship at the level of language and thinking must give way, at times, to a need for positive, direct, action. This is to say that to properly address the ontological question, at the level of world-disclosure, must be to simultaneously "get one's hands dirty" at the level of beings. If one remains hardlined, and still finds oneself unable to move past thinking/poetry toward considered action, I think there are two ways forward to unite the two.[20]

First, it seems possible to demand an incredibly high standard for what 'thinking' means such that, as Plato says in the *Protagoras*, one could assert that no one truly goes against what one knows to be the better course of action (1997, 358b-c). If one truly understands the full significance of what it means to think in a way that brings beings forth in their dwelling character, there is no way that one could fail to *act* consistently with the full realization of this knowledge.

That is, *thinking* as *dwelling* demands that one *build* a world that allows beings to dwell. Indeed, in the essay "Building Dwelling Thinking", Heidegger plays on the fact that *Bauen* ("to build") derives from the Proto-Indo-European root, **bhu-*, "to dwell" and the word *bhuht*, "to become". He says that for a human to dwell properly is to look after the things in one's lifeworld. In fact, "*[t]he fundamental character of dwelling is this sparing*" that frees entities into their essence. Furthermore, having a cared for and well-tended home in which things are given their proper place is what grants a person "stay" and welcome in her home (Heidegger 2008j, 351). This simultaneously serves to protect a conception of humans that sees them as inseparable from their lifeworld. An enframative world consisting of uprooted entities which can have no place is no home. One must not only rescue entities from the maw of enframing, but simultaneously *build* a world that consists of things that altogether resist being enframed. Building a world in this invigorated sense of dwelling is the essence of craftwork.

Second, what unites the guardianship of thinking/poetry and active and passive guardianship outlined by Young are that they are *all* forms of *techne*, "art" or "craft". All proper *technai* share a common mode of disclosure, *poiesis*, bringing-forth in the sense of 'letting something be': This is precisely knowing when to bid a thing come near while preserving its relationship to its own lifeworld. *Poiesis is bringing-forth*, in thought, in word, or in deed.[21] One might see in *techne* the root of our word 'technology' and conjecture that modern technology shares in *poiesis*, too. However, modern technology does not 'free a thing into its own essence' but instead *pre-determines* a thing always already as resources. Craft, as Heidegger says, has nothing to do with debauched "busywork", the commodified production of saleable items (1968, 15). The craft of woodwork consists, for instance, in its "relatedness to wood" such that it is attentiveness to the bringing-forth of wood that "maintains the whole craft (1968, 14). Craft lives within the human capacity for poetic relatedness toward the things worked with.

Craft has been present since the beginning, yet not explicitly in name. The herbalist who knows how to bring out the curative aspects of a plant while covering up the poisonous is practicing *techne*. The cabinetmaker who sees the shapes hidden within the wood in their pent-up potential is practicing *techne*. The orchard-keeper who attentively cares for her trees, watching over their growth and fruiting from year to year, is practicing *techne*. The poet and the thinker, too, are practicing *techne*. Their unique ability is to bring out in thought and language that which *is*, in its dwelling character. As it turns out, *techne* lets a thing rest within a world understood as holy (worthy of thanking) and in its bringing-forth, makes sure that it comes forward in a whole or complete way.

The logic of *techne* is already contained within the practice of rendering a thing holy. That which is holy is granted. Now, one should come to see that holy means "wholeness", understood in the sense of dwelling. 'Holy' comes directly from the Old English "*halig*", which means: "holy, consecrated, sacred" (Harper 2018c). Something that is touched by a god or suffused with holiness is intrinsically worthy of respect and caring. *Halig* is likely co-originary with the Old English *hal*, from which we receive the word 'hale'—as in, 'to be hale and hearty' (2018c). To be healthy is to be hale. Old English uses the same word, *hal*, to denote that which is "whole" or of "sound" constitution. *To be hale is to be whole*. To say that the world is holy is to say that it is worthy of being kept whole and intact, worthy of guardianship. To keep the world hale, healthy, and complete, is to bring-forth in such a way that one simultaneously bids a being to come while preserving its indelible connection to its world. This is entirely synonymous with Heidegger's notion of dif-ference in relation to language discussed above. This is what it means to protect and preserve something as holy in the sense of keeping it whole. This notion of wholeness runs through all proper forms of craft, of bringing-forth.

Guardianship is always a positive process that requires that someone bring out the things in her world in their dwelling character. Humans cannot do this unless they first provide themselves a home in which to dwell. They do this through building: “The essence of building is to dwell” (Heidegger 2008j, 358). As it turns out, making oneself a home and providing the things in the world a home are coextensive. To do one is to do the other. According to Heidegger, humans live in “spaces”, but what transforms a space into a “locale”—a place that is intimately familiar and capable of becoming a home, is working with the world to bring it out in its dwelling character (358). The dwelling character of a locale is twofold, allowing both humans and things in to find “stay” in a reciprocal fashion (359). An uprooted individual considered abstractly has no welcome in her lifeworld: “To say that mortals *are* is to say that *in dwelling* they persist through spaces by virtue of their stay among things and locales” (359). One way to accomplish this act of staying is through authentic building in the sense of *techne*, bringing-forth. Building includes the customary creation of structures.[22] But *techne* is more than the making of physical homes, as Heidegger points out: “[T]he *proper plight of dwelling* does not lie merely in the lack of houses*”* (363). To build oneself a locale in which things show up in the proper phenomenological light consistently is to make a world that allows things to unfold in a way that does not rip them from their essential nature.[23]

Hölderlin and Whitman are receptive to the poetic speaking of things and can put them into words in a way that retains their essential nature. In the same way, the receptive craftsperson listens to the speaking of natural materials and works with their essential nature to bring-forth things in a way that allows the thing’s speaking to shine through. Caring for her world at the same time grants her stay within it. I consider an example. Trees such as Douglas Fir are strong and resilient along the grain—and incredibly stout relative to weight. Fir has long lent itself to building timber-frame structures, with its high strength lending itself well to making posts, beams, and rafters. Roofs were often lashed with cedar bark, split shingles, or planks. This is due to cedar’s natural rot-resistance. Furniture inside the home might be made of maple, given its hard-wearing nature. These features mean that natural materials lend themselves to being used in certain ways, while cautioning the craftsperson against other uses. While maple is hard-wearing, its hardness lends itself to being brittle, which could lead to bending or buckling in lengthy home-sized timbers. Additionally, its heaviness makes it unwieldy. Cedar, similarly, isn't suitable due to softer nature and easy splitting along the grain: agreeable proclivities to have as a roofing material—but less desirable as a timber. Each element inside the timber-frame structure has its place given the natural inclinations of each material. The nature of a craftsperson's phenomenological "sight" is to see these often-ignored dimensions of the natural world and bring them out in a way that agrees with the thing at hand.

Concretely setting things in their proper place solidifies the ontological character of the world as protected. In other words, the craftsperson's *thinking* carefully about those materials brings out a concrete manifestation in the world of this thoughtfulness. This process is the movement from thinking to *techne* as active/positive building out of a world. As Heidegger observes:

> The gravity of the mountains and the hardness of their primeval rock, the slow and deliberate growth of the fir-trees, the brilliant, simple splendor of the meadows in bloom, the rush of the mountain brook in the long autumn night, the stern simplicity of the flatlands covered with snow—all of this moves and flows through and penetrates daily existence up there [in the alpine regions of the Black Forest], and not in forced moments of 'aesthetic' immersion or artificial empathy, but only when one's own existence stands in its work. It is the work alone that opens up space for the reality that is these mountains. The course of the work remains embedded in what happens in the region (Heidegger 2001b, 16).[24]

The nature of the timber-frame homed reflects the demands of the northern regions in which it was traditionally part. Like a sturdy mount, it stands up to the heavy snowfalls native to these locales. An oceanside tropical setting, in contrast, has no need of building with timbers to withstand snow. Lithe building members flex with the winds rippling off the sea. Contrast this with the modern suburban home that is the same everywhere, which pays no attention to what is needed for a home to be truly a place of dwelling. The logic of one's region is contained within the 'work' of craftsmanship that makes a region capable of giving stay to humans. Building with the materials from a region and being mindful of one's locale in building lets the region itself dwell within the structure.

As Young reinforces, this orientation toward the world is just the character of dwelling: "To dwell is (a) to be cared-for in the dwelling-place and (b) to care for the things of the dwelling-place" (2001, 64). In this way, natural materials may be experienced as a gift—those natural things that arise in one's dwelling place that allow such dwelling to take place. They are there, for example, so that the craftsperson may shelter herself in them during those winter months. At the same time, they reveal themselves as *not there* for being exploited—as supplies of cellulose or engineered building materials. Even to preserve the integrity of the timbers but ship them the world over is to ignore the endemic nature of these materials. What is more, to clearcut a forest, cut it down in the name of resources, would no longer grant stay for humans and would eliminate the capacity for dwelling altogether. The more humans care for their home, the more they reveal things and ways of living as holy, as worthy of thankfulness and guardianship. The two are self-reinforcing, for the more someone reveals her world as worthy of safeguarding, the more protected it becomes against the advances of enframing.

'Building' need not mean only "construction". To build-up a forest that has been decimated by clearcutting through restoring its integrity over many long years is, too, a form of building a locale. Creating traditions that sustain such forms of dwelling into the future is also building. Perhaps the destruction or reconstruction of those things that are properly homeless[25] is integral to building a world apart from enframing thinking: A world of guardianship has no place for engineered and enframed things such as Coca-Cola bottles.

Regardless of the mode of craft revealing, thinking ahead of oneself in terms of appropriate ontological disclosure of the world is always contained within craftwork. In this way, *techne* as thinking and *techne* as craft are united. 'Letting things be' in a positive sense means that *techne* must be pursued holistically, in both its active and passive modes. One cannot live without the other. All of this should serve to orient the reader in the direction of craft revealing. The preceding has been a sketchy outline of what will be developed in detail in Chapter 6.

A Challenge and a Response

I want to now return to a question that I glossed over at the beginning in order to arrive at my eventual destination of craft. Namely, why take the world as a holy place—and therefore, worthy of guardianship? Even if one takes Hölderlin as a witness, why care about what Hölderlin has to say? As Julian Young puts it: If contemporary exploitative practices are anything to go by, it is not clear that nature should be worthy of safeguarding (*cf*., Young 2001, 109). Why not, for instance, recoil at nature in a Schopenhauerian way (109)? Or, rather, why not see nature as a site of cosmic terror: grotesque and unfathomably horrifying, as H. P. Lovecraft sees it—or chaotic and nauseating, as Jean-Paul Sartre suggests?

Heidegger scholars, Julian Young (2001, 108-111) and Hubert Dreyfus and Sean Kelly (2011, 36*ff*., 86*ff*), indicate three potential paths forward (the first two being arguably nascently contained in Heidegger's thought). Each of them have been intimated above in some form. All three authors try to conjure something like a "duty for care" from some aspect of the world. Young attempts to connect holiness to the experience of the world as beautiful. In particular, he focuses on strong experiences such as the sublime and their ability to produce an "ought" in humans: i.e., One ought to care for the world, because it is beautiful, sublime. A version of this argument can be seen in the argument for cosmic thankfulness, above. Dreyfus and Kelly connect holiness to the Homeric Greek experience of the world as everywhere inhabited by the gods. (Young provides a remarkably similar account.) The gods are those who humans ought to be thankful toward (or perhaps be angry at) when things that they have no control over go well for them (or do not).

In contrast to an approach that seeks to establish an argument for the "ought", Dreyfus/Kelly assert that, for the Greeks, the "ought" was already part of their lifeworld (2011, 86). That is, they never needed convincing since it was an ingrained "truth". Nobody needed to present an argument to Odysseus in order that he consecrate the hall after having dealt with the suitors. The solution today, then, is to somehow rekindle the Greek sense of "holy fire" through some sort of Greek revival movement (Young 2001, 96).

I intimated this position in third case in the opening section of this chapter and last section of Chapter 3. The third case that Dreyfus and Kelly consider is that of David Foster Wallace's New Sincerity movement, which amounts to a neo- Nietzschean or Camusian act of *willing* the world to be holy: "For Wallace anything—even some type of 'consumer-hell'—can be experienced as sacred if I choose to make it so" (2011, 65). The radical positing of the world as holy makes it holy, significant. A version of this is the way Camus suggests that Sisyphus' might make it out of his plight: "[T]here is no fate that cannot be surmounted by scorn" (1955, 77).

I will not, here, retread any of these authors' work. Instead, I will note that they each reject the above paths after walking them. For Young, the experience of the beautiful or sublime cannot ultimately guarantee that one will see the world as a holy place—no matter how Hölderlin insists upon it in his poetry. As Young says, speaking of Paul de Man's take on Heidegger's Hölderlin,

> Being is holy because Hölderlin is a man of semi-divine powers of insight (inhabits the *Nähe*, is 'near' to Being) and allows the content of his insight to come to presence in his poetry. But that, of course—this is de Man's point—advances the argument not at all. A Schopenhauerian could equally well set up Thomas Hardy as a poet of semi-divine insight and conclude that Being is demonic (2001, 109).

Rather, one has to be the kind of person who is already predisposed to such a feeling occurring. Neither can one, therefore, come up with an argument in which beauty/sublimity leads to holiness, since the effectiveness of the conclusion bears directly on one's disposition as Hardian or Hölderlinian.[26]

For Young and Dreyfus/Kelly, wanting to revive the Greek way of life is, too, wrong on a number of counts. Recall that the idea is that if the Greeks experienced their world as continually granted by the gods, then perhaps a revival of their experience will allow one to do the same: to experience the world as holy and therefore worthy of thanking and guardianship. The first objection is that there is no getting back to some originary Greek way of life (nor should one want to). For one, as Young notes, the "Greeks" are a Heideggerian construct: They are "those partially idealized beings constructed out of hints provided by the Greek language" (2002, 103). A Heideggerian Greek revival would therefore be based on a semi-mythological people assembled from interpreted fragments of Heraclitus, Parmenides, and Aristotle.

Beyond this, even if one rejects Heidegger's notion of Greekhood and posits the Greeks *as they were*, originalism still falls prey to the undesirability and impossibility of anachronism. Slavoj Žižek deals with this issue in Chapter 3 of his most important work on Hegel, *Absolute*

Recoil (2015). Žižek highlights the important point that it is only once a people's origins are lost to them that they can ever go back and try to establish and refound those origins (2015). This is a battle that is incapable of being won. There is no getting back to the origins as they were, in their nascent form. Any attempt to establish the original moment will always be fundamentally altered by the event of losing, either traumatically or through a slow ebbing away, of those origins in the first place. This is not to mention that fact that material conditions have changed and so on. The only way to once again establish an authentic origin would be through a collective forgetting of everything (such as a populace-wide mindwipe) and then consequently enough time passes where said populace, from the ground up, just happens to establish the same origins as before—however unlikely.

Furthermore, the idea of 'origin' only exists for those who already have already lost that original moment. Antecedent peoples never thought, 'Gee, aren't we living originally?'. One cannot be reactionary, in principle, if there is no loss of a previous state to react to: "In reality, however, there were no origins that were subsequently lost, for the origins are constituted through the very experience of their loss and the striving to return to them" (Žižek 2015). Additionally, any attempt to re-establish origins will ultimately create an excess. The "new" origin will always be the origin plus that knowledge of how things once were and how things have changed. Finally, current humans should not want to be past peoples. Contemporary humans must recognize that a great many achievements have been made by us moderns and we should not wish to return to such ills as the subjugation of women and slavery.

The third position, that of David Foster Wallace, fails for a similar reason to the first position (the beautiful's connection to holiness). I have already rejected this position at the end of last chapter for the reason that it appears inherently conservative. That is, one need not do anything at the level of one's being-in-the-world except reframe the significance of what one is doing in terms of sacredness. That the 'consumer hell' of grocery store line becomes a holy experience should strike as absurd. In this sense, Wallace's thought is stuck in abstraction, with no practical bearing on the world. That is, the fact that Wallace's position has a different psychological bearing than the cynic's does not stop it from being essentially the same at the level of action. At the same time, one cannot *will* the world into significance for reasons I make clear shortly, since such moods rest on underlying dispositions one ultimately has no control over.

This brief discussion has sought to shed doubt on the ability to (either reliably or without contradiction) adopt the stance that the world is a holy place through the experiences of sublimity, through a "return to origins", or through an act of pure willing. I transition to an explication of the mood of guardianship and its relationship to craft practice. It is through craft practices, I claim, that one can more reliably come to adopt the mood of guardianship. Furthermore, since the life of craft (explored in detail in Chapter 6) is simply suffused with guardianship as a matter of course, one does not need to rely on an act of pure willing (each position above is arguably dependent on such an act) to achieve the mood.

'Mood', a common rendering of Heidegger's term, *Stimmung*, is an important concept in his corpus. Taken ontologically, moods are forms of *Befindlichkeit*, 'attunement', which translates to "where and how one finds oneself" (see Inwood, 1999, 131). In other words, moods are overarching dispositions that disclose the world in a certain way. As it turns out, Heidegger fruitfully thinks of *modes* of disclosure, such as enframing and guardianship, in terms of *mood*. The phenomenological sight of the guardianship mood sees the world as holy and worthy of safeguarding. Given the difficulties stated with coming to guardianship via revelatory experience, revivalism, or willing, the purpose now is to detail how one might arrive at the mood of guardianship through other means. *Techne* is the path that reveals these means.

I take a commonplace example of mood. When one is profoundly bored, all the lifeblood is drained from the world. Things that previously brought joy no longer do. Describing Heidegger's concept, Inwood says that "[p]eople and things" all succumb to the same level of sunken "indifference" (Inwood, 1999, 132). David Foster Wallace, always a keen observer of human affairs, captures "crushing boredom" in a more lively way: "Pay close attention to the most tedious thing you can find (Tax Returns, Televised Golf) and, in waves, a boredom like you've never known will wash over you and just about kill you" (in Dreyfus, & Kelly 2011, 47).

For the early Heidegger, extreme boredom is a form of disclosure. Namely, it discloses the paradox of what Thomas Brockelman calls an "unavoidable" aspect of Heidegger's philosophy, our human "finitude": that humans are, at base, absolutely free, yet everywhere in chains—bound by enframing and other modes of disclosure (2008, 26*ff.*). These circumstances one did not opt into, yet they hold sway over one's ends. In boredom, one is now able to see them at the level of indifference, as human structures that are ultimately mutable. Boredom is precisely a leveling of all things such that they are revealed phenomenologically under the same light: nothing shows up with any significance over anything else. A person's projects are no longer relevant for her, and so on.

The mood of absolute boredom *attunes* people to the world in this way. 'To attune' is to "adjust to harmony" (Harper 2018b). Dreyfus and Kelly favor this translation of *Befindlichkeit* (2011, 89). People 'adjust to the harmony' of the mood, not the other way around. That is, they find themselves fallen into the mood. Escaping a mood is not as simple as a pure act of willing. To further this point, Heidegger explains that moods are not

> something like gloves: sometimes worn, sometimes set aside somewhere. … Moods are not placed into the subject or into objects; rather we, together with beings, are *trans-posed* into moods. Moods are powerful forces that permeate and envelop us; they come over us and things together with one fell swoop (2014, 81).

People, therefore, fall under the spell of a certain mood. People do not choose boredom. Rather, in a way, boredom "chooses" them. At the same time, while moods may be associated with emotions or psychological states, they are not coextensive with them. In fact, the hammer example in *Being and Time* ought to be read in light of mood. What the hammer example shows is that mood, "how one finds oneself", matters when asking philosophical questions. Philosophical contemplation, so-called "pure" contemplation, is bound up with mood according to Heidegger.

Husserl's transcendental *epoché*—the attempted bracketing of all bias and judgment to make the object-of-study appear in its true nature—is an example of this. The *epoché* attunes the philosopher to the world in a certain way, casting this in light, this in shadow. How? Heidegger argues that what one is looking for, say, when one examines the properties of an object, will not manifest unless one steps into the philosophically contemplative mood:

> "Yet even the purest *theoria* [gazing at; seeing] has not left all moods behind it; even when we look theoretically at what is just present-at-hand, it does not show itself purely as it looks unless this *theoria* lets it come toward us in a *tranquil* tarrying alongside [alternatively: 'tranquil dwelling on']" (*Heidegger* 1962, 138; *cf*., Inwood's translation, 1999, 132).

Here, there are three things to point out. First, in this passage Heidegger actually distinguishes between the "standard" philosophical mood and his own mode of phenomenological inquiry, *theoria* (Aristotelian pure seeing), which invites a thing to come forward into presence intact, as a thing that rests within a world. This mood, stemming from Aristotle, is the same as genuine thinking. I stick with the "standard" philosophical mood to make a clearer example.

Second, as any new philosophy student will tell you, even though it may appear as though one can (in the professor's case) merely *will* themselves into the contemplative mood at any given time, this is only because the professor has cultivated that knack over years of practice.[27] What appears to be a willing is actually a falling into a mood. Indeed, the beginning philosophy student often needs to learn to bracket off the world in order to see the formal properties of what is being talked about, as opposed to its worldly associations. Many logic students, for example, will get sidetracked when attempting to explicate the formal features of a prose argument if the content of the argument is relevant to their own lives (e.g., it might deal with contemporary politics, religion, and so on).

Stemming from this, it is fair to say that moods, by nature, are *fallen* into (i.e., one does not will them into existence). That said, people may nevertheless will themselves to be in circumstances consistent with getting themselves in such and such a mood. For example, if I want to be deeply depressed, I might close the blinds, put on a Joni Mitchell record, and crack open *The Grapes of Wrath*. This, of course, is not as simple as donning a glove: There is no guarantee the mood will come. To apply this to the discussion of guardianship, there is no act of pure willing and no experience of the beautiful/sublime that will guarantee that one fall into the mood of guardianship.

Young says that nevertheless, the only way forward is to have *faith* that the mood will come. That is, one is more likely to fall into the mood through hopeful expectancy:

> It is, however, plausibly a feature of human action that unless one has faith in the *eventual* achievement of the goal at which it is aimed one will be unable to conduct the pursuit of the goal in, in Heidegger's language, a 'resolute' manner.
>
> …
>
> While being's sublimity is, then, something that can be known, its holiness is a matter of faith (2001, 117-8).

I think Young is on the right track to say that having an expectation that a mood will occur is key to achieving a mood that one sets one's mind upon. However, to this I would add that perhaps an even better tack would be "faith through good works".

The poetic mood; the mood of thinking; and the mood of craft (all forms of thanking/ guardianship) may be cultivated through what one should properly call, after Aristotle, *hexis* ("habit")—with the aim of creating a stable disposition in oneself. In other words, perhaps the best way to become a guardian is to combine faith with simply doing things consistent with getting in that mood. For example, if I *decide* that I want to be in a consistently dour mood, perhaps I should adopt the trappings of a characteristically "goth" lifestyle. Yet I gather from Heidegger's *What is Called Thinking?* that very few philosophers have, indeed, ever gotten into the mood of genuine thinking. It is indeed much more difficult than becoming dour all the time. However, the rarity or difficulty of getting into a mood should not detract from its pursuit. I claim that an important way to cause oneself to fall into the mood of guardianship is in the pursuit of the life of craft.

If one wants to become a happy person, the first step is to start smiling more and doing those things that are likely to make one happy. If one wants to inhabit the mood of guardianship, one ought to try to bring out the dwelling character of the world. One need not rely purely on faith. Instead, by engaging with the world in the mode of dwelling, one is more likely to fall into the mood of guardianship.

For Dreyfus and Kelly, a central path toward the mood of guardianship stems from one's careful interaction with natural materials. For them, one cannot overstate the importance of the fact that no two pieces of wood are identical to the craftsperson, for in this experience lies the granted nature of the world:

> The uniqueness of each situation gives a sacred dimension to the craftmanship. Because each piece of wood is distinct, has its own personality, … the woodworker has an intimate relationship with the wood he is working. Its subtle virtues call out to be cultivated and cared for. This sense of intimacy with the wood initiates in the woodworker a feeling of care and respect for it (2011, 248).

What Dreyfus and Kelly highlight is the phenomenological mood of craft. The mood inherently recognizes the sacred/holy dimension of materials and seeks to guard their disclosure. To treat a material as sacred is to pay attention to the piece at hand and bring it forth in a way that listens to its speaking. The material should properly guide the craftsperson in its use. This mood, as Dreyfus and Kelly indicate, is a careful mood, one that recognizes that in order to be worked on at all, one must be responsive to the individual qualities before oneself.

'Care' here, so defined, amounts to the bringing-forth of materials in the sense of "letting them be". According to Dreyfus and Kelly, care for this or that natural material functions as a steppingstone to a greater intimacy felt towards one's greater lifeworld. That is, the sacred dimension of natural materials naturally leads one to experience sacredness of place (Dreyfus & Kelly 2011, 248). On one level, the "intimate relation" that "the woodworker has … with the wood he is working … call[s] out [for it] to be cultivated and cared for" (248).

On a deeper level, *all* natural materials are part of a place. A piece of wood is part of a tree, which is part of a forest, which is part of a landscape—of which humans call home. The craft mood, as Alex Langlands recognizes, is properly at home in its world in the sense of dwelling:

> [T]he master becomes familiar with the local soil, the terrain, and the sources of water that nourish the trees. He comes to know intimately the weather and the seasons, since they change the way the trees will respond to the saw; and he knows that a timber cut in the wintertime dries differently from that cut late in the spring (2018, 308).

The key, again, comes down to *intimacy*. Crucially, intimacy engenders more than just casual endearment. In being entirely at home in her landscape, the craftsperson forms a connection that "goes beyond a mere sense of responsibility to it" (308). She is intimately familiar with the *terroir*, the *flavour* of her world, the sights, the smells, the recalcitrance, the yielding. The natural surroundings in which the craftsperson lives are so part of her lifeworld (where she eats, where she celebrates, where she raises a family, and so on) so as to be inseparable from the notion that it is *dancing* with the sacred.[28] But the authentic craftsperson already inhabits this mood, and the question now is how to come to adopt this mood oneself.

Dreyfus and Kelly, too, make the point that one cannot *choose* and thereby make it the case that one cares for something: "You cannot choose to care about a domain [such as the woods near one's home], any more than you can make a decision about whom to love" (2011, 245). One, rather, *falls* into love. Yet when one puts oneself in a position where feelings of guardianship might occur, one already makes overtures toward those feelings. Luckily, since the knowledge of how to work with the world is already contained at the intersection of human *techne* and the natural world, all one need to do is begin to work with the world with—as Heidegger says after Parmenides—an open "trembling heart" that is receptive to the speaking of things (*cf*., Heidegger 2008k, 444). This means not coming to the world with preconceptions that would seek to *force* it into shapes it is not amenable to (such as the grinding up of standing trees into engineered and regularized materials). Of course, this takes a humble disposition, subtlety, and tact. In other words, to approach with an open heart is to already be on the path to a craftlike, safeguarded, interaction with the world.

Conclusion

Before closing, I want to first make a clarificatory remark regarding the character of guardianship's mood. To repeat, guardianship is a practical response—at the human level of being-in-the-world—to the recognition that the world is a holy place. Guardianship and the craft response that I associate it with it should be recognized as components of a *thoroughly modern* stance, one that is naturally antagonistic to treating the world as enframative—no matter whether these enframative practices could conceivably have existed in the past. Guardianship should not be associated with a desire for a "return to origins", as was rejected above. There are many practices that have existed in the past that guardianship would seek to avoid. It is for this reason that I have said that I have repeatedly said that such a stance '*could* have existed in the past and might one day exist in the future'.

According to Heidegger, modern technological disclosure has been 'on the way' in human history for quite some time (1993, 327). In an interesting passage, he traces its origins at least to the beginning of the "modern physical sciences" operant from the "seventeenth century" onwards (327). Enframing thinking—thinking that demands that "nature report itself in some way or other that is identifiable through calculation"—runs ahead and makes possible the physical invention of enframative machinery over a century before the arrival of the first steam engine (327).[29] While Heidegger traces the origins of enframing at least to the 17th century, one can conceivably see indications of the will to enframe even earlier.[30]

Most forcefully, perhaps such a will existed within historical slavery practices, for example. One might conceivably argue that such practices provide a window to the way antecedent peoples *really* viewed the world (i.e., as enframative). However, Kevin Anderson finds that Marx "wrote in a draft of" *Capital* that slavery within a modern industrial system is somehow more "hateful" than previous kinds, chiefly because it is possible within such a system to view the slave even more abstractly (2019). Marx must mean that the slave, under such a system, is viewed almost entirely in the most brutal and pure sense of "labour power", purely as unitized, interchangeable, and expendable. (To suggest that enframative slavery is perhaps of a different character than prior kinds is not to say that one is any less an absolute afront to human dignity. Importantly, nor is this to mount an apology for a certain kind of slavery: Marx certainly does not do this. Indeed, Marx argues all slavery must be stamped out, wherever it is encountered [see Foster et al. 2020, for a summary of his opinions].) Industrialized slavery, for Marx, is most hateful precisely because the slave is the *closest* human equivalent to brute enframative capital, seen as merely substitutable for machinery or perhaps even a more *efficient* form of machinery. Unlike the proletariat, whom Marx describes as wage-slaves, the true slave possesses no modicum of freedom—nor even the ideological "sheen" (her own false consciousness) in which she may view herself as "more" than a member of the proletariat. The slave just is disclosed entirely—brutally—as enframative capital, with no luster of false-consciousness to cover up her true reality to herself.

However, one could, arguably, go another direction. Perhaps all slavery is equally enframative. Historically, slaves were certainly tallied and counted for many reasons—and certainly viewed as chattel, mere possessions. Perhaps this indicates that they were viewed as a sort of standing-reserve. However, one should recognize insofar as they were perhaps seen as enframed (or where enframative views existed elsewhere historically), it was assuredly at a *localized* level—as opposed to a *globalized* or *totalized* level. That is, the world *as such* in its ontological character was not disclosed primarily as enframative in character. (I suggest that where the tools and lifeways of craft persisted, the overall character of the world could not help but present itself in terms of that which must be worked with.) Indeed, now enframative revealing comes to range over humanity considered in itself. At this rarified level, the level of world revealing, all humans are leveled down to standing-reserve. (To further clarify, I take up a parallel line of discussion—considered at the level of technological artefacts (tools)—in the next chapter's "Intensity and Scale" section.)

What is crucial to realize is that none of the preceding should cast doubt on the mood of guardianship, which does not fall prey to the desire to unthinkingly adopt historical practices. In other words, as an exercise of historical analysis, it may be interesting to find past traces of enframative practices, but such "discoveries" should have no bearing upon one's estimation of the guardianship mood. I have brought to the forefront this difficult objection to show that it should serve as no objection at all. The sins of past peoples should not reflect upon the thoroughly modern position of guardianship. Just as one would cease to view the river in its poetic unfolding in the process of damming it up, one would cease to view humanity—as the beings who are existentially free in a way that other living beings are not—according to its own poetic sway under such hateful practices as enslavement. Guardianship, in its mood, is simply set against both the exploitation of the natural world as well as people.

To close, this chapter serves to orient the discussion toward appropriate responses to the problem of contemporary technology. Thanking and its active mode of guardianship are alternative disclosive ways of interacting with the world that attempt to shelter a conception of it apart from enframing. They preserve the essence of things in the world in their dwelling character, which is to call a thing forth while allowing it to bring its world along with it. Heidegger locates potential avenues to the problem within poetic language and thinking. While Heidegger's own thought indeed makes room for thinking and action to be united, it is nevertheless an underexplored avenue in his philosophy. In this chapter, I have started on the road toward craftwork, which is thinking combined with *techne*. Action that brings-forth the world in its dwelling character overcomes problems forwarded by Young and Dreyfus/Kelly that ask after how one might come to adopt the overarching mood of guardianship.

My next two chapters unpack what it means to live in a craftlike way. In the next chapter, I look at the nature of modern technological artefacts (tools and equipment) in relation to historical craft artefacts. Using Aristotle's philosophy as my starting point, I explain how the use of the objects of craft can in fact help one get into the mood of guardianship. That is, craft equipment and the traditional lifeways associated with it, already have modes of dwelling inbuilt into their character. In the final chapter, I turn my attention to the phenomenological perspective of craft itself and its relationship to guardianship. I highlight a more robust conception of "world" than has thus far been presented. Heidegger calls this conception the fourfold, consisting of earth, sky, divinities, and mortals. Authentic craft's perspective, as it turns out, is inseparable from treating the world in such a way as to protect and be thankful for each element of the fourfold. In protecting the world as fourfold, the craftsperson safeguards her lifeworld such that it becomes increasingly difficult to treat it enframatively.

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[1] See Klemm (1986) for a discussion of the evolution of Heidegger's thought on language.
[2] Aristotle's genius, according to Heidegger, lies in his ability to provide definitions that "speak" (*cf.*, 16). A live "spoken" definition brings the matter to the reader in a way that invites a conversation with Aristotle; Aristotle is, in a way, "there" to help bring the matter to light for the reader (*cf.*, 16). There is an interesting parallel to be drawn here between Aristotle's mode of inquiry and the warnings Plato offers about writing in the Thamus myth contained in the *Phaedrus* (1997, 274c-276a).
[3] Heidegger does not make a distinction of the "medium" (1962, 56) of speaking: He seems to not distinguish between the written and spoken word in this passage in *Being and Time* and the earlier passage in *Basic Concepts of Aristotelean Philosophy* (2009, 16). This will become of interest to scholars such as Derrida.
[4] This should not be confused with Derrida's use of the term.

[5] A true home is distinct from a place in which one merely resides. Rather, it is intimately familiar, not just in terms of being the actual place that one lives—the brick-and-mortar house—but full of things which live and breath in phenomenological light, largely because they have proper names. Or rather, they have proper names because they are homed. A home is full of things with names that can be given their "proper place". Contrast this with the relentless leveling down and utter sameness of the contemporary technological world in which every-thing is ubiquitously available (perhaps just a "click" away) and inscrutable as to its origin. Almost every-thing in the modern home (and larger world) is this way.
[6] Authentic language founds a new mode of ontological disclosure. One should not underestimate how radical this new mode of ontology is, for it dictates that doing ontology must also be a situated affair and not just a stuffy identification of universal categories. Heidegger associates this latter response derisively with traditional metaphysics. One cannot encompass a river in one's lifeworld as one might encompass "gold" by identifying it as the element with atomic number 79. Neither can one encompass it by identifying its geographical place replete flora and fauna native to it.
[7] *Grundstimmung*, which means "grounding mood" or "grounding attunement". This kind of mood is grounded in an alternative ontological mode of revealing, which is opposed to enframing revealing. For mood/attunement in general, Heidegger usually uses *Befindlichkeit*, "where one finds oneself". One can find themself in a mood of enframing. Indeed, the modern world is primarily disclosed through this mood.
[8] This is well-supported etymologically (see Harper 2018e).
[9] Language itself can be viewed as the memory of a people. Therefore, founding appropriate language or reinvigorating worn-out language lets beings live on—as dif-ference—in the collective memory of a people.
[10] For Heidegger, this means to focus on what gives most "food for thought … that what is most thought-provoking", which is ultimately one's capacity to think: Where it comes from; how to think well; what to think about; and so on (see Heidegger 1968, 45*ff*.). That humans can *think* while other creatures cannot is the deepest form of mystery for Heidegger (45).
[11] It is for this reason that Heidegger rails throughout his career at biological or anthropological conceptions of humankind as having "cracked the code" of humanity's essential nature: e.g., Humans are just a collection of genes and memes (cultural "genes") as Richard Dawkins would have it. This is to miss what is essential to human nature entirely.
[12] The flipside of luck, of course, is misfortune. Throughout *Salut*, Whitman is continuously attuned to moments of luck and misfortune, which bear the mark of the gods. "The rustling pattering locusts", which come in "terrible clouds" is set against the prayers that fall upon the "black" life-giving earth of the river "Nile" (1855). But to live a life of misfortune in which one is "dealt" a rough hand is no less subject to the whims of fate.
[13] See Young 2001, 64, 82, 92, 102-3 for a list of times when Heidegger describes positive versus negative activity. Similar to what I do here, Young also discusses what positive action might look like if one takes Heidegger's description of positive action in a fuller sense of "activity in the world". However, where I depart from Young is my sustained focus on *techne*.
[14] 'World' is how Being first appears to humans. Thus, to safeguard an appropriate phenomenological appearing of world is to safeguard Being.
[15] I discuss the jug explicitly at the end of next chapter.
[16] I take up what an appropriate conception of humanity looks like in the 'Mortals' section in Chapter 6.
[17] Even counterfeit craft and thinking can be associated with such "busywork". Heidegger mentions the pressure to make saleable items in *What is Called Thinking?* (1968, 15). In the same vein, the pressure upon academics to publish inconsequential work in the name of upping one's "Key Performance Indicator" numbers is of the same kind.
[18] Similarly, it would be too strong to say that Heidegger ignores *techne* in his writings, as it is a companion to this thinking as early as the 1924 *Basic Concepts of Aristotelean Philosophy* lecture course (2009, 147*ff*.).

[19] For Heidegger, the task of a complete change of a society's thinking is beyond the task of an individual philosopher. Rather, such a revolution of thought comes about in a world-historical moment that he calls in the *Contributions*, "the event" (2012, 10, 20, 24, 25, 26-7, 56-64, 67, 200, 322, 369). When Heidegger says to await the coming of a god, he means this and nothing mystical. All the thinker can do is prepare the way for this event to come so that both others and oneself are ready to recognize that it has come. It is altogether too easy to miss an event once it has occurred. The task of "waiting" for it to occur is to practice vigilance. A world has to be ready for the event to occur. The true task of the guardian is in the preparation of world-disclosive thought. One can imagine an event occurring at an inopportune time and it falling away to the sands of time, unnoticed. How many prophets have come and gone without their voices heard?

[20] I outline some reasons, both textual and personal, why it may appear as though Heidegger neglects *techne* as craft in his writings. I also add some reasons why Heidegger should be read as implicitly granting a place for craft within his work. If it can be said that Heidegger has a general rule in his writings, he generally shares a prejudice against questions of authorship: the *human* origin of things. I think this provides a first indication of why it seems that Heidegger seems to ignore the human aspects of the life of craft within his writings. For Heidegger, what one can say about Aristotle's life in *Basic Concepts of Aristotelean Philosophy* is as follows: "Regarding the personality of a philosopher, our only interest is that he was born at a certain time, that he worked, and that he died" (2009, 4). With Georg Trakl in "Language", Heidegger remarks similarly: "Who the author is remains unimportant here, as with every other masterful poem. The mastery consists in precisely this, that the poem can deny the poet's person and name" (1986, 146). Nor is authorship of concern in the case of the handmade thing: "The jug is a thing as a vessel—it can hold something. To be sure, this container has to be made. But its being made by the potter in no way constitutes what is peculiar and proper to the jug insofar as it is *qua* jug" (2001b, 166).

Heidegger's authorship rule seems to stem from three reasons, two philosophical and one personal. First, Heidegger is intent on 'letting Being speak' through things and ideas. Language is the 'peal of stillness of being', bidding a thing come forth in its dwelling character. Since language is not a human invention, but *language speaks through humans* as dif-ference, one need not ask an authentically speaking author what she is up to. Rather, language does the speaking for her. In the same way, the clay jug announces itself as part of its lifeworld. In the common way, the jug gives the gift of water after a hard day's work or wine in order to celebrate. The author of the jug no more *makes the jug into that which dispenses a gift* than she *demands that clay itself* be the kind of thing capable of being fashioned into a jug. Rather, the jug is awoken from its slumbering within the clay. And her skill rests only in this "sight" and ability to bring forth jug from clay. Humans were granted the ability to see jug within clay. In no sense can the potter make a jug from something that does not already have within it that shape to give. Indeed, at a different level, while her craft is indeed learned, the fact that humans are capable of craft is, like language, a granting with an origin outside of them.

Second, for Heidegger, thinking has pride and place over other forms of craft: "Every motion of the hand[20] in every one of its works carries itself through the element of thinking, every bearing of the hand bears itself in that element. All the work of the hand is rooted in thinking. Therefore, thinking itself is man's simplest, and for that reason hardest, handiwork" (1968, 17). That is, craft *depends* on thinking for its impetus. In the *Der Spiegel* interview, Heidegger does say that the separation of thought and action is ill-advised. But this does not necessarily seem to preclude the precedence of one over the other. Perhaps, one might even say that thinking is prior to craft because at least one can imagine thought as independent, as pure *cogito*. In contrast, one cannot imagine craft without thought. However, isn't the lesson of *Being and Time*'s (1962) 1.III.18.b., "*A contrast between our analysis of worldhood and Descartes' Interpretation of the world*", precisely that being-in-the-world is existentially *prior* to the formulation of the *cogito* (122)? That is, at base, humanity's existential character can never properly be thought of in terms of pure consciousness. For the same reason, I would suggest that it is ill-advised for Heidegger to begin to think that thought is, therefore, prior to craft. That is, there is no such thing as human being without thought *or* craft, equiprimordially. At its deepest level, the life of authentic craft *combines* the life of thinking with action, in terms of bringing-forth. It is an active approach directed at disclosing the world, in thought and deed, as worthy of protection. In the *Der Spiegel* interview, I can see no other way to fruitfully read what Heidegger means by saying they ought to be united, than this.

[21] In this way, in its essential meaning, craft has nothing whatsoever to do with 'means and ends thinking' and "fabrication" in terms of enframing. In *Between Past and Future* (1961, 215-7), Hannah Arendt argues that the craftsperson can never rise above such matters and can therefore, never be a genuine agent of political change. I expand considerably, however, upon what it means to be a craftsperson.
[22] It is clear by the end of "Building Dwelling Thinking" that Heidegger is writing it with an eye toward how to rebuild the lived spaces of Germany after the war (2008j, 363).
[23] This comes down to the distinction between "working with" the things in the world and doing "violence" to them.
[24] For personal reasons intimated in the letter to the editor, "Why Do I Stay in the Provinces?" (1934), Heidegger appears reticent to despoil the life of the Black Forest people that he holds so dear. By making pastoral life "sexy" to those fashionable "literati", he clearly thinks that eulogizing the life of craft will endanger the livelihoods of those people who already properly dwell within their own lifeworlds:

> "But this goes exactly contrary to the one and only thing that now needs to be done, namely, to keep one's distance from the life of the [farmer], to leave their existence more than ever to its own law, to keep hands off lest it be dragged into the literati's dishonest chatter about "folk-character" and "rootedness in the soil." The [farmer] doesn't need and doesn't want this citified officiousness. What he needs and wants is quiet reserve with regard to his own way of being and its independence. But nowadays many people from the city, the kind who know their way around and not least of all the skiers, often behave in the village or at a farmer's house in the same way they "have fun" at their recreation centers in the city. Such goings-on destroy more in one evening than centuries of scholarly teaching about folk-character and folklore could ever hope to promote" (18).

One might think that the life of the craft farmer is not one of thinking, but it ought to be pointed out that thinking itself need never be an explicit conduct. Instead, craftwork already contains authentic thinking within itself. Paradoxically, Heidegger would chastise those literati who merely "play-act" at the craft lifestyle, who adopt it without thinking.

Heidegger cautions us to leave those who practice the life of craft alone. And this is a fair comment. But the traditional lifeways of the people Heidegger speaks of have now been almost entirely wiped out with the reaching of technology to every corner of the earth. While Heidegger sought to protect and shelter craft from outside influence, there are now very few humans left who are not world-poor (in the sense of only having access to the same technological world everywhere). There is no longer any craft life, outside of a few communities and amateurs, left to preserve. I suggest that a revival of the life of craft is one potential way forward.
[25] So too, the monoculture "planned" forest that is only intelligible to enframing thinking. The logic of "processing" trees for feedstock, pulp—has no place in such a world.
[26] Kant comes closest to seeing the possibility for a holy radiance within the experience of the sublime. Although, he traces it to the astonishment that the human mind could so fathom these experiences and imagine something greater. The sublime mountain's monumental size can be surmounted by the human imagination: An even greater mountain can be conjured. Kant says that this causes one to esteem the human intellect above all else. I would argue that rather than as a source of esteem, what this should properly indicate is how great a gift (since they had no part in its creation or granting) humans have been dealt by fate. I explore the nature of granting and gifthood further in Chapter 6, 'Divinities'.
[27] Yet, one does not merely will themselves into the philosophical mindset. As Heidegger explains, even in the professor's case, she may fail to fall into it for a myriad of other reasons (stress, etc.).
[28] This reader should be aware that this is only a taste of the mood of craftsmanship. I devote a large portion of the next chapter and the entire last chapter to exploring it further.
[29] In this passage, Heidegger forcefully defends the stance that enframing thinking came first (1993, 328). The modern machine is not just "applied science" but, rather, the manifestation of enframing thinking that was on the way for some time (328).

[30] I think it would be reasonable to argue that Heidegger might see certain other “properties-based” metaphysical conceptions of having at least taken steps toward enframative thinking. In a scholastic sense, two things possessing the same properties are surely fungible for one another and, therefore, might possess some aspects of standing-reserve. However, I am unsure as to whether some of these aspects of scholastic (or earlier) thought, therefore, mean that they were ‘on the way’ to enframative thinking. For one, it seems that the religious aspects of their lifeworlds certainly precluded the medievals from seeing humans themselves as fungible. Unfortunately, this interesting line of inquiry is beyond the scope of the current study. But this is surely in need of further inquiry.

Chapter 5: Modern and Antecedent Technology

Introduction

In this chapter and the next, I significantly build upon and clarify the previous chapter. Modern and antecedent technology—roughly the equivalent of post-Industrial technology versus craftwork methods—differ in terms of their disclosive nature (enframing vs. safeguarding). I expand upon this conception by looking toward challenges to this view before considering other ways they might differ. I explore 3 preliminary models, the first 2 of which conflict with my conception.

David Pye, the most prominent anglophone philosopher of craft, divides forms of technological practice into what he terms 'the workmanship of certainty' versus 'the workmanship of risk'. He asserts that philosophers should divide technologies along lines of risk relative to outcome. Therefore, the distinction between antecedent/modern is a false one.

For the second position, I forward an objection that can be found in nascent form in Jared Diamond's popular work. This view, too, argues that modern/antecedent technology are of essentially the same kind. They exist along the same spectrum, with 'big enframing' (modern) on one end and 'little enframing' (antecedent) on the other. In other words, they only differ in intensity and scale.

Once these are dealt with, I turn to a development of Heidegger's conception forwarded by Richard Rojcewicz. He elucidates the distinction, both literally and analogically, in terms of an exploration of two kinds of technological artefact, the gear (antecedent) and the capacitor (modern).

Next, I turn toward a further expansion of the antecedent/modern distinction that builds on both Aristotle's and Heidegger's views. I expand upon the idea that the way antecedent technologies let a thing be is through showing how a thing is *indebted* to its world for its existence. One might customarily think that the craftsperson is the *cause* of a made thing's existence. Yet this is only half (or properly, a quarter) of the story. Here, I make recourse to Heidegger's novel interpretation of Aristotle's four causes, which explain how a thing—any-thing, whether it is produced by humans or comes from the natural world—is indebted to the world for its existence. I argue for the claim that the bringing-forth of *techne* is that which allows a thing to wear its causes on its sleeve, so to speak—whereas modern technology is everywhere a forgetting of a thing's indebtedness.

To ready the discussion for the next chapter, I further introduce another of Heidegger's concepts, the fourfold: earth, sky, divinities, mortals. A fruitful way to describe the fourfold is an expansion of Aristotle's causes in the direction of *world*. This marks the transition between a generic conception of world in the last chapter toward a fleshed-out conception that only the perspective of *techne* can illuminate.

I have already referred to 'world' repeatedly in this dissertation. The fourfold constitutes a radical reconception of Heidegger's unique idea of 'world'. The later Heidegger's introduction of the fourfold goes beyond the human-focused paradigm found in *Being and Time* and moves toward a conception that sees humans as coequal and essential partners in the coming to be of a world that perhaps existed in the past and perhaps could exist in the future. A fourfold world constitutes an alternative ontological disclosure to that of enframing and is protected by the mood of guardianship. I reappropriate Heidegger's account in the direction of craft and argue that craftwork protects and fosters this alternative mode of disclosure. That is, it writes into the fabric of its actions how things in the world are indebted to earth, sky, divinities, and mortals for their existence. But this is already the subject of the next chapter.

The Workmanship of Certainty and Workmanship of Risk

It is instructive to first look at the most influential Anglophone scholar of craft David Pye, in *The Nature and Art of Workmanship* (1968). Inspired by works such as George Orwell's "Politics and the English Language", Pye rejects usage of '*techne*' and 'craft' for their philosophical baggage and speaks instead of 'workmanship'. I will adopt Pye's language for consistency in this section. In its simplest form, Pye's argument claims that technologies are to be distinguished by their degree of risk. Since there can be no difference between the two, modern technologies can share just as much risk in their process as antecedent. (Note that in this section and the next, I take a break from Heideggerian exegesis in order to make a few clarificatory points about the nature of technology itself.)

I begin with some notes about Pye's study. Pye does not talk about the nature of technology as such but instead the nature of workmanship, specifically as it occurs at the level of making or production (whether individual or group-based). Workmanship can be fine or rough, quick or painstaking, or more or less certain with regard to intended outcome.

The workman seeks to carry out a design, whether it was originally conceived by her or not. Designs admit of varying levels of sophistication, from a thought in someone's head to detailed blueprints. Designs might specify a level or kind of workmanship required throughout and evident in the final product, such as rough versus fine workmanship. Building a temporary lean-to during a rainstorm might call for rough and quick workmanship, while building onto a cathedral would call for the opposite. So, the workman and her mode of workmanship are a conduit between the design at one pole and the made thing at the other.

Overall, a certain kind of workmanship is to be prized, according to Pye, insofar as it produces pleasing results. For him, such results should be evaluated along aesthetic lines. Indeed, the aesthetic value of traditional craft workmanship is the subject of much of Pye's work.

For philosophical reasons, Pye does not distinguish between modern and antecedent technology. Nor does he think that a distinction between modern and antecedent *tools* is a tenable one. Rather, he prefers the distinction between "the workmanship of risk" and "the workmanship of certainty":

> If I must ascribe meaning to the word craftsmanship, I shall say as a first approximation that it means simply workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgment, dexterity and care which the maker exercises as he works. The essential idea is that the quality of the result is continually at risk during the process of making; and so I shall call this kind of workmanship 'The workmanship of risk': an uncouth phrase but at least descriptive.
>
> …
>
> [We] contrast the workmanship of certainty, always to be found in quantity production, and found in its pure state in full automation. In workmanship of this sort the quality of

> the result is exactly predetermined before a single saleable thing is made. In less developed forms of it the result of each operation done during production is pre-determined (1968, 4-5).

Generally, with reference to outcomes, work can be made less risky by employing various devices and jigs. Pye gives the example of handwriting on a blank piece of parchment versus lined paper (5). He further contrasts this to using a stencil to carefully draw out each letter (5). Generally, the more time and patience one is willing to put into a particular enterprise, the less risky it becomes in terms of the quality of the end-result: e.g., writing quickly versus monk-like. However, the pen itself, as a hand tool, is always subject to risk with regard to results. The pen can slip in one's grasp or dispense too much ink, spoiling the page. Writing with a pen requires attention and care. Yet the modern pen is already less risky than writing with a quill. In contrast, the printing press was an early improvement upon the writing process in some respects, as it takes the risk out of producing legible characters almost entirely (5).

Take into consideration the evolution of the process of committing print to paper, from handwriting to the printing press to modern printers. It seems that a distinction along a spectrum might be made between modern/antecedent workmanship based solely on the nature of the *tools* used. That is, modern tools, such as the portable document format (PDF) coupled with digital printing, are inherently less risky than antecedent formats in terms of guaranteeing results. The result one is looking for when reproducing a written work is the generation of well-formed characters on a page. Due to the tools being used, and given that everything is in working order, the result, as Pye says, is 'pre-determined'. The printer will spit out a page with the intended characters. The same kinds of improvements can be seen in many contemporary tools that had antecedent counterparts: Compare modern usage of the diesel/hydraulic-powered excavator with using a shovel and pickaxe to dig up rocky ground. Rocky ground protests the hand tool user. In contrast, the excavator all but guarantees the ground will be dug by its hardened bucket-teeth. These examples suggest that the difference between the workmanship of risk and certainty might come down to efficacy of the tools being used, with modern tools being more certain with respect to results.

However, given the presence of what Pye takes to be convincing counterexamples, he disagrees (1968, 9-11). He points to the fact that people have always used jigs and other devices in order to secure the regularity and certainty of their work. The ancient person knapping a piece of flint into an arrowhead may lean the stone against a piece of wood at the correct angle. If she then strikes straight down, the flint will shear along the correct plane. Since jigs and other forms of work- and tool- holding have been used for millennia, Pye claims that the distinction between risk and certainty cannot come down to power tools versus hand tools. That is, the tool in question cannot be what reduces the risk in regard to outcome.

On a piece of square and true oak, a master woodworker can make a nice, freehand, 90-degree cut. Further, if a true hardwood piece is clamped to the workpiece to act as a guide, then the results may be even more certain. Lee Valley, a Canadian hand-tool manufacturer, even makes a sophisticated handsaw guide manufactured from aluminum, high-tech plastics, and magnets. It holds the handsaw in place while making the strokes. The first needs the skills of a proper woodworker, while the last two may be accomplished by amateurs of varying degrees of skill.

Contrast this to a thoroughly modern tool: A bandsaw is a machine with a toothed, circular, band-like blade, powered by an electric motor. Though the bandsaw is powered, Pye argues that it does not guarantee results. Even a skilled woodworker can guide the work through the blade in a haphazard fashion, ruining the squareness of the cut. In other words, there is nothing inherent in the bandsaw that lends itself to guaranteeing the result of a square cut. Rather, as before, if the woodworker wants to make her results more certain, she ought to employ things such as a guide fence and other forms of workholding to help in that endeavor. Even then, a bandsaw equipped with a guide fence might be used poorly if one neglects to hold the wood squarely against it. Thus, Pye concludes that there can be nothing within the nature of power-driven machinery or hand tools that distinguishes them along the lines of risk with regard to outcome. Power tools can admit of much risk and hand tools can admit of little risk.

The result ultimately depends on the care and attention as well as the work- and tool- holding the woodworker might employ.

One might argue that "craftwork" means work done entirely by hand, and that when one speaks of antecedent workmanship, one means only to indicate these kinds of craft. Its more difficult to argue that something done entirely by hand is not riskier with regard to outcome than modes of workmanship employing tools and jigs. Here, Pye makes a further qualification: When it comes to craftwork, almost nothing has been done entirely by hand historically, save crafts such as basket weaving and pottery (Pye 1968, 9-11). By this, he means that tool-use is coextensive with almost all craftwork. He adds that the distinction cannot come down a spectrum with "more done by hand" on one end and "less done by hand" on the other. So, the two main things to glean from this discussion are (a) that what distinguishes craft (or kind of workmanship) *x* from *y* is its relationship to the end product in regard to riskiness of outcome; and (b) that there is nothing inherent in hand equipment or power equipment that dictates the certainty or riskiness of the outcome, since in principle, the former or the latter can be used in more or less risky ways.

There are two potential problems in the preceding discussion. (1) First, more precise distinctions need to be made with respect to the ends of tools. (2) Second, Pye conceives of technology at the level of means and ends thinking, Heidegger's perfunctory level.

(1) First, a power bandsaw's end—*qua* bandsaw—is not to make a box or indeed to cut straight without the use of guide fences. Rather it is to cut *simpliciter*. With reference to the proper end, it can be seen that what the bandsaw does is make it all the more effortless to engage in cutting. That is, the *certainty* of the bandsaw is in relation to the cutting, not the cutting straight. What is essential to the bandsaw's essence is that the wood itself puts up little resistance to its spinning teeth. The bandsaw is, therefore, largely indifferent to what wood is put before it: All wood is the same to its blade. It does not much care if the wood is hard or soft, close or open grained, knotty or clear. It cuts.

As any fine woodworker knows, the proficient use of a handsaw requires a number of tacit skills that only come with experience. Contrary to what one may think, wood resists the hand saw in a way that it does not under the power tool. People have long-known to fashion saw teeth to work *with* the wood. Rip teeth, for example, are meant for cutting wood along the grain. They are set nearly in line with each other and act as miniature chisels, carefully peeling out the wood fibers in long strands as one saws. Using a rip saw when cutting wood across the grain is a difficult exercise as the teeth are wont to bind.

Historically, there are handsaws for each task: Not only ripping and crosscutting but for different varieties of work as well, from small fret saws for musical instruments to panel saws meant for rough timbers. It would do no good, for example, to use a large and flexible panel saw on something fine such as a drawer's dovetail. Dovetails, which are meant to join drawer-sides together in a way that does not require mechanical fasteners, must be true along their faces in order for the "pins" and "tails" (the mating joints) to fit together well and not come apart after decades of pulling. A large flexible saw isn't fit for this purpose.

The bandsaw is entirely the opposite. Modern laser-cut "universal" blades leave a fine cut regardless of whether one is ripping or crosscutting. The powered motor and the spinning teeth take the risk out of situations which would be dangerous to do without careful consideration for the hand-tool workman. Knots and fine dovetails in pieces of brittle maple may be sawn through with ease. The power and speed of the bandsaw motor takes the "fight" out of the wood entirely.

With hand-tool woodwork, there's more to the cutting process than just selecting the right saw: Since saw teeth have a forward angle to them, a western saw will only cut on the push stroke. Saws must be sharpened with a file and each tooth must be set subtly opposed to one another. Teeth should also be sharpened and set according to the kind of wood being dealt with. All of this bears on cutting efficacy. It takes finesse and a properly prepared saw to not have the saw—even the *right* saw—bind up in the kerf. Even the correct handsaw is liable to tear out a dovetail entirely, especially on a hard and brittle wood such as big leaf maple (as I know all too well). Additionally, one has to be careful not to let the saw bind on a knot, lest it tear it out altogether. This can ruin a workpiece if knot occurs in a critical area.

In contrast to a traditional handsaw, modern bandsaw blades generally have magnetically induction hardened teeth, which cannot be sharpened. If such a blade dulls, it must be thrown out and replaced with a fresh one.[1] When one tunes a handsaw blade so that it cooperates together with the wood, one is thinking about the wood one is working with, tuning it differently according to its unique aspects. This responsive relationship between the tool, the workman, and the natural material is absent in the process in which one goes to a hardware store to buy a universal blade.

The body, too, is an element that runs throughout traditional woodwork. While sawing a small piece of wood may not be tiresome, the handsaw takes considerable stamina to use for any period of time, such as when one is ripping a lengthy piece of wood. Going too fast and rushing a cut will only cause the saw to go cattywampus. Indeed, wood fights and bucks the wood butcher just as it fights and bucks the workman who would bring the wrong tool to bear against it. This is precisely why when one brings the right tool to the job, the tool is properly said to "sing". When one is *working with* the wood, the workman, the tool, and the wood itself form a chorus. The proper workman indeed listens first to how the wood wants to be worked, so that each element mentioned sings in harmony.

Work which is tiring can also be rewarding—when tool, workman, and work sing together. With a modern industrial bandsaw set up with infeed and outfeed tables, the workman's body is much less involved. The machine's power, which it receives invisibly through a power grid, negates the need for the workman to employ her corporeality, both her power and finesse in working with the wood. Indeed, the modern woodworker's body, which is generally less aware, less capable, and altogether stiffer than her forbearers, reflects the shifting poles of power in the woodworking process, from workman to power tool.

With reference to the proper end—which is firstly to cut—a difference between the antecedent handsaw and modern powered bandsaw is one of risk with regard to outcome. I do not think, therefore, that Pye's assertion that there is no difference between modern and antecedent technology with regard to risk holds. The bandsaw "eats" materials, not paying attention to things such as grain direction, knots, or other elements of recalcitrance. That is, it cuts. Indeed, Hubert Dreyfus and Sean Kelly say that the bandsaw takes responsiveness out of the equation altogether: "Because the band saw never met a knot it couldn't tackle, for example, there is no need anymore for one to see the distinction between the knot that is an obstacle to be deftly avoided and the knot that can be turned to advantage, to strengthen a piece" (2011, 252). In contrast, the traditional handsaw user must listen to the wood first and foremost and fit the tool in a responsive way to the unique character of the wood before her. Only then do results come.

If the bandsaw was first employed to take the listening out of the woodworking process in order to secure results, then the use of engineered materials with known properties completes this process. The modern woodshop seldom uses non-engineered wood products anymore. Engineered goods such as medium density fiberboard (MDF) are synthetic "wood" products that have been pulped and re-amalgamated together using heat, pressure, and sophisticated resins. These products, monolithic in composition throughout, have no grain direction or defects such as knots or reversing grain. As such, they present themselves to the machine every time as the "same" product whose properties are known ahead of time. This is why they lend themselves toward being utilized in industrialized furniture operations such as IKEA's, which is less a large-scale traditional woodshop and more of an enframative engineering, manufacturing, and logistics operation. Natural wood materials were simply not regular enough to be "understood" by machination, so wood itself was required to be broken down to its constituent parts and reassembled according to the logic of regularized manipulability and easy exploitation of materials.[2] The use of engineered materials such as MDF, were, in a way, destined to come onto the scene as part of a system that demands such regularity.[3] In contrast, since traditional tools do not—and cannot—sing with such materials (using a rip saw on an engineered material with no grain direction is an exercise in frustration), the question becomes why anyone would want to use traditional methods in the first place? With the elimination of natural materials, soon comes the elimination of the need to listen to the natural world.

To sum the first point, in terms of natural timber, the bandsaw uncaringly does violence to the wood and is indifferent to the unique nature of the piece before the tool. The handsaw must be responsive to the nature of the piece in order to get it to agree to being worked with at all. Further, the entire march of modern "wood"-working technology has been an effort to secure results and eliminate the recalcitrant nature of natural materials by substituting them with engineered ones. Even if one regards the proper end of sawing tools as "cutting squarely", the entire modern process of "wood"-working, which relies on materials whose dimensions are engineered and manufactured to be square, makes it such that the results are pre-determined in a way that traditional woodworking could never fathom.[4]

(2) Second, as many other philosophers of craft, Pye sees technology at Heidegger's perfunctory level: the level indicated by means and ends thinking. Pye reasons backwards from the kind of end he wants more of, which is the aesthetically pleasing made thing. He then asks what kind of workmanship will produce it.

Generally, Pye argues that workmanship employing more risk is more likely to produce the aesthetically pleasing thing. He reasons that the more risk involved in a process, the greater the skill and mastery required on the part of the workman. He calls this "free workmanship" (1968, 19). Pye also reasons that aesthetically speaking, a sophisticated manufactured thing exhibits too much regularity in its form and finish, and this detracts from its aesthetic quality (19). Things produced via complex manufacturing process with certain outcomes are "incapable of freedom" and therefore, incapable of generating the same aesthetic qualities in the finished thing. He contrasts this with

> free workmanship [in which] the flat surface is not quite flat but, when seen from close by, shows a faint pattern of tool marks: and the straight edge is not quite straight, but, seen close, shows slight divagations. The effect of such approximations is to contribute very much to the aesthetic quality in workmanship which I shall call *diversity* … . The natural figure of materials such as wood, the play of light in translucent materials, and the effects of wear, weathering and age, all contribute to diversity as well, but controlled freedom in workmanship has perhaps contributed more to the quality of our environment by way of diversification than any of them (19).

The aesthetically pleasing thing is a balance between carrying out a "good" given design and such elements of diversity which naturally occur in the process of skilled workmanship. This is 'controlled freedom'.[5]

To clarify Pye's view, one can look at how he contrasts his own view with that of John Ruskin, which is found in Ruskin's third chapter on "The Nature of Gothic" in volume II of *The Stones of Venice* (Pye 1968, 59*ff*.; Ruskin 1851-3). He argues that Ruskin confuses excessive ornamentation and rough work with freedom on behalf of the workman (Pye 1968, 63).

According to Ruskin, a workman operating under her own designs and of her own direction will naturally conceive of and carry out work which is altogether more freeform in design and rougher around the edges (63). I think Pye correctly explains, largely through performing his own phenomenology of traditional workmanship, that this is not the case. As he says, "there is great pleasure in doing highly regulated workmanship" and indeed, many workmen choose it if left to their own devices (63). Furthermore, regularity showcased in the made thing should not be confused with the certainty of outcome. Pye claims that Ruskin confuses the two (63).

A skilled stone carver (or carvers) may reproduce a design continuously over a great area, such as the Gothic lierne roof vaulting of Barbastro Cathedral or the fan vaulting of King's College chapel. However, the outcome is far from certain. Instead, the skilled carver must rely on deftness with the chisel and hammer to achieve such regularity. What is more, even a highly regulated architectural design, when it is carried out by the workmanship of risk, will showcase the controlled freedom that Pye talks about—the slight divagations on the surface of the stone made from the rake chisel—that contributes to the aesthetic quality of the made thing.[6] An overt example of this is the rake (tooth) chisel marks on the temple stones of Antiquity. In the end, for Pye, Ruskin draws a disanalogy between highly regulated work, such as that of the cathedral vault carver, and the *certain* and regulated work of industrial process, which Ruskin rightly criticizes for how it transforms people into Smithian dullish brutes (Pye 1968, 66). People in the former case are proper workmen (i.e., skilled craftspeople), in the latter case, mere "labour power".

Through Ruskin, Pye clarifies his own aesthetic distinction: the skilled workman creates highly regulated and free work; machine processes, regulated and certain work. Writing in 1968, Pye prizes the workmanship of risk insofar as it generally produces more aesthetically pleasing results, chiefly in relation to the diversity of the finished quality of the end product—even the highly regulated end products of the master. He reasons that these pleasing qualities can only be achieved through interaction with the workman's hands. Machine processes, on the other hand, are not able to achieve diversity in this way given the rigidity of manufacturing systems.

Pye's work is an achievement, and his rigour and attention to the first-person process of craft making are unmatched. I question, however, if Pye can maintain the distinction between the workmanship of risk and certainty in practice. That is, can Pye maintain a difference between materially *identical* things produced via craft process versus the process of machine-driven certainty? Recall that Pye makes the point that what is to be prized is the aesthetic value of the made thing, which is to be found in the end product and not the process of making it: e.g., knowing that a skilled workman made something should not contribute to the *aesthetic* value of a thing. (Perhaps it contributes to other forms of value, but Pye does not make note of this.)

The example of Antoni Gaudí's *Sagrada Familia* basilica in Catalonia, which has been under continuous construction since the late 1800's, brings the distinction to light. Because of its long construction history, the *Sagrada Familia* has outlived those craftspeople who once cut its stones by hand. These skillsets, in a little more than a century, have now almost been lost entirely. Pye would argue that there will be a distinction between the gargoyle hewn and carved by a stone-sculptor's hand and those modern ones shaped by the carbide mill of a CNC (computer numerically controlled) machine. Chiefly, the machine-produced gargoyle will not display those tell-tale elements of diversity (the tools marks, the slight deviations across a surface, etc.) that are hallmarks of aesthetic quality.

However, if modern manufacture could produce things, in a purely material sense, indistinguishable from things produced via craftwork, it seems as though Pye could not argue. In principle, if a machine could produce such diversity in a piece, then Pye would surely agree that it is similarly aesthetically pleasing. The creator's identity, machine or human, makes no difference to aesthetic quality. The machine might do so via a randomized algorithm or via a complex study of what pleasing aesthetic diversity looks like and how to reproduce it, as can surely be accomplished by modern artificial intelligence software. Analogously, I have heard tell that a pair of fashionable torn jeans can now be ripped via a machine through using such a randomized algorithm. While it might be argued that a "true" pair of well-worn torn jeans cannot be produced today given current levels of technological sophistication, it is surely the case that a manufacturing process is in principle capable of making such a pair of jeans. The same goes for the gargoyles in Gaudi's cathedral.

Pye undoubtably sees his work as a defense of traditional craftwork. It is meant to point out those aspects of the world that would be lost should the world become subject to pure machination. His concern, much like that of Ruskin's disciple, William Morris, is that the lived human environment will become all the more dull and spiritless. He remarks how the modern home, for example, is slipshod knocked together by wood butchers compared to the careful joiners of old. I would add that modern "prefab" homes that are manufactured on an assembly line are a further step. The "even unevenness" of a "gloss paint[ed]" and hand-plastered wall is an example of "an uneven polished surface with a pleasant character" (Pye 1968, 56). This gives way to the uniformity of modern drywall, everywhere the same (56).[7]

Pye is concerned for the end product and the aesthetic pleasure it produces. One can still want to preserve a world made by skilled workmen (craftspeople) given that the world will be more liveable and humane. However, if the end product can be made aesthetically pleasing through machine processes, then it is unclear that Pye can object. Since the skilled workman has no role other than contributing to the aesthetic dimensions of the end product, she may be replaced when a machine can produce similar results: e.g., when "prefab" homes are produced with freeform algorithms; when CNC machine "workmen" produce the "right" kind of gargoyle. That there is no distinction between the machine-process's aesthetically pleasing world and the workmen created aesthetically pleasing world is of course absurd.

If this point is combined with the earlier point, that Pye *cannot* say that antecedent forms of technology are just as risky as modern machine tool processes, this suggests that one should doubt the foundations of Pye's distinction. Simply, if one attempts to use a traditional handsaw violently, the wood protests. From the sharpening and setting, down to the cutting itself, the handsaw must engage with both *risk* and *listening* throughout its task.

The solution to these problems is to be reminded of that which is co-responsible for a made thing's coming to be, which all have a part to play in determining the essence of a thing. Customarily, these are Aristotle's efficient, material, formal, and final causes. There is so much more to the making of a thing than the end product, whether that be measured by aesthetic quality or other lines. So too, while the craftsperson is indispensable and co-responsible for a thing's coming to be, she is not *solely* responsible. The quality that her hands lend to the eventual product cannot be all that matters. For now, I leave these possibilities aside but devote considerable attention to them below.

Intensity and Scale

A second reason that might be offered for denying the difference between antecedent/modern technology is that both are enframative. This stance improves upon Pye's because it views antecedent/modern technology through a phenomenological-ontological lens yet states that their manner of revealing is the same. If they are to be distinguished, they simply differ in terms of the *intensity* and *scale* with which they exploit the world. A version of this theory can be teased out of Jared Diamond's popular book, *Collapse: How Societies Choose to Fail or Succeed* (2005; see also Diamond 1994). Diamond showcases several past societies that have collapsed due to ecological problems that they created such as deforestation, aridification, or soil degradation. Given that they used primitive forms of technology, this seems to lend credence to the idea that antecedent technology enframes the world in the same way as modern technology. Diamond's arguments are pop-anthropological in nature. I will re-adapt and strengthen them through an ontological lens. This approach attempts to see each of antecedent and modern technology's disclosive natures as enframative.

Suppose that the general thrust of Diamond's argument were right: modern technology only differs from antecedent in terms of *intensity* and *scale*. To say that modern technology is more *intense* than antecedent technologies must mean that it allows for the application of greater "penetration" or "force" to a given problem. The electron microscope is comparatively more *penetrating* than the ancient magnifying glass ("burning-glass") that Aristophanes describes in *The Clouds* (2006, 38). Humans can "see" into almost every substance now, break it down to its molecular level, and reassemble its parts into new compounds: the corn feedstock becomes hydrocarbons becomes fuel.

In terms of *force* application, the gargantuan power shovel or 1000-ton Caterpillar excavator that sits atop a mountain, dismantling it, scoop by 100-ton scoop, is of essentially the same kind as the hand shovel. Both are shovels, differing only in sophistication and the amount of *force* that each can generate. One could say, then, that the former enframes the earth pound by pound while the latter enframes ton by ton. This might prove a difficulty for the present study: If in truth humans have always enframed the world but have simply done it less forcefully in the past, what makes modern enframing more questionworthy than prior forms?

At the same time, one can say that modern technology operates on a *scale* that would have been unimaginable to ancient peoples. Although spying in general was already commonplace in antiquity, all the scribes and spies in the world would not have been able to effect the massive surveillance and data collection of a billion people that China has been able to accomplish in just a few short years (with its country-spanning network of surveillance equipment). Or consider the magnificent scale to produce such a commonplace item as an IKEA tea towel. As discussed in Chapter 3, such a simple artefact is dependent on a globe-spanning network of resource extraction and refinement. The totalizing nature of technology, in principle, sees no limit to what might be possible to exploit in the future: asteroid mining is perhaps only the beginning. Nevertheless, so the current argument goes, conventional mining, practiced even by ancient peoples, is essentially of the same *kind* as modern mining; it differs only in the enlarged capacity through which human's are now capable of engaging in the activity.[8]

Geologic scholars have recently began talking about the 'Anthropocene': the fact that this geologic time scale will be marked by human activities such as the burning of fossil fuels and the pumping of other pollutants into the terrestrial, aquatic, and atmospheric environments.[9] Nevertheless, given the above view that can be gleaned from Diamond's work, one could surmise that it is not as if there is anything markedly different about the current era. The human capacity to pollute, deforest, use up, and so on has recently changed, but not the human *will* to exploit. Population declines caused by exploitation in places such as Easter Island would have occurred sooner with the "right" technology (I take up the case of Easter Island in a moment). That is, the difference between the post-Industrial Anthropocene and other eras is simply that the enframing enabled by technology is now so sophisticated and expansive that pollution and destruction of the Earth enabled by technology now threaten the future of the planet. Again, the sophistication of the technology has changed—but the original impetus of enframing has not. In this way, one could argue that the exploitation of nature is inbuilt into human activity. Humans would have brought the world into the Anthropocene sooner, had they only had the technology.

One way to state this is that now the world puts up so much less *resistance* than it ever did.[10] The world now *yields before* modern technology, whereas before, the earth's recalcitrance was more directly felt. Whereas the world once was a source of friction, because humans simply did not have the right tools, modern technology allows for a more frictionless exploitation of the things around them.

But this does not solve the problem. 'Had humans only had the technology' must mean that whatever the character of modern technology, it now has the capacity to, for example, destroy the Earth as we know it. It seems entirely the case that many past cultures could have gone on practicing their ownmost craft lifeways in perpetuity, without causing ecological collapse—even cultures who historically *interceded* rather forcefully upon their world in the name of protection and guardianship. Here, I am thinking of cultures such as the Kootenai, Interior Salish, and Peigan, who practiced controlled burning of valley forests for a variety of reasons. The two most salient were to protect their own home from the capricious nature of wildfire and to encourage the meadowing of areas that would attract new plants, animals, and consequently, food: "deer, elk, moose" and "berries, medicinal plants, [and] mushrooms" (Parminter 1995, 2-4).

The craft of controlled burning grants *welcome* and *stay* in a landscape for a people and reveals the world as that which is granted not only to them—but also the plants and animals that spring-forth in such a locale—as a dwelling place. A destructive era such as the Anthropocene seems impossible under the craft lifeways of such people. An abandoned clearcut, with "unusable" tree carcases piled up to the sky like cairns, heavily sprayed with deciduous herbicides, makes movement and life nearly impossible. The clearcut is an unhomely a place, a place that grants neither humans nor plants nor animals stay.

I think the idea of homeliness/unhomeliness is co-extensive with an idea intimated earlier: that a difference between modern and antecedent technologies is the difference between working with the world and doing violence to it—indeed, doing so much violence to it that the human capacity (and nature's own poetic capacity as *physis*) to make the world a home is destroyed in the process. If anything, I think the fact that one might still make the mistake of identifying modern technology as "big enframing" and antecedent technology as "little enframing" perhaps shows that one needs to come at the problem at the right level and from the right framework.

What I mean is that it does no good to only think of modern technological and craft artefacts narrowly, divorced from their respective lifeways and elements of technological practice that make them possible. The original claim teased from Diamond was this: that one can enframe the world shovel-full by shovel-full. The response to this is twofold.

First, if the shovel is viewed as a mere tool, which itself can be an element in any technological paradigm, then of course the shovel may be seen as enframative. One can imagine a fictional universe where vast legions of people dismantle mountains with (pickaxe and) shovel. But this is already to divorce the shovel from the craft lifeway of which it was originally part. The shovel's ultimate purpose is not to dig, but to grant humans a home: perhaps to uproot, perhaps to plant, perhaps to make a channel. The shovel used to uproot a sapling, plant it near one's home, and direct water towards it is part of a craft process that—along with the tree that will one day bear fruit—*thinks*, not just about providing a home in the here and now, but perhaps generations into the future. I suggest that the shovel not only should properly be homed in an overall mood of guardianship, but the shovel lends itself to operating within this mood.

Imagine treating the shovel as a purely isolated tool. Perhaps, as part of an enframing paradigm, the shovel so too can enframe. However, this is to ignore the fact that what separates the excavator and the shovel by an 'abyss of essence' is that the former almost entirely ignores any resistance that the earth may raise against it (*cf*., Heidegger 1968, 16). The excavator treats nearly all things under its boom as 'that which may be torn asunder'. The wooden-handled shovel, in contrast, is likely to break under protest of stone or root. The *violence* inherent in the excavator is that it levels down all ground as essentially the same: debris which must be cleared … or resources which must be piled up. While a shovel might *attempt* to enframe, it may only do so badly. Can one use an excavator gently? Perched in an operator's cab with powerful hydraulic cylinders that care not what they come up against, one cannot. The essence of the shovel is predisposed to working with the world, while the essence of the excavator is not just predisposed, but of the mode of doing violence to the world. The world *yields* to the excavator. The shovel *yields* to the world.

If there is wisdom in Diamond's account of past people's exploiting their world and it leading to their ruin, it is that the world will buck and fight back against such exploitation. When humans attempt to use antecedent technologies that do not pay careful attention to the requests of the land, the land will "kick them out", as it were. Any animal, in principle, can destroy its regional food sources and other essentials and be required to move to a new region. Any animal, so too, can be ill-prepared to inhabit a particular region it moves to and will similarly have to move on. (There is a reason why people historically have stuck to fertile valleys and waterways rather than mountaintops).

The rather notable case of the Rapa Nui, inhabitants of Easter Island, does not so cleanly fit this template, however. It can nonetheless be made clearer considering the above. According to Diamond, it is likely the culture of the Rapa Nui was quite sophisticated (Diamond, 2005, 91). This claim is supported by the famous *moai* statues that erupt like promontories out of the sparse landscape (91). Such carvings indicate a likely great capacity for art and leisure on the part of its people (91-2). However, the decline of the Rapa Nui population is just as famous as the *moai* figures—with many statues standing in their original quarry "in all stages of completion" (90). According to Diamond, this lends a "ghostly" character to the island, as if the inhabitants were abducted while in the middle of things (89).

What Diamond suggests occurred is that many simultaneous factors led to deforestation and aridification of the landscape (2005, 114). Most notably, the introduction of non-native rats onto the island devastated both crops and the native forests to such an extent that, according to journals written by colonizers, timber, so rare, became treasured perhaps above all else (114). The destruction of forests limited food sources for inhabitants. Forests also created microclimates, ensuring rain for crops. Consequently, the island became increasingly desertified. At the same time, the “rugged coastline” combined with a lack of timber impoverished the ability to make both tools and seafaring vessels. This in turn contributed to an inability of the Rapa Nui to feed themselves from the ocean (115). The island’s power to sustain a large population simply collapsed.

To put all this together, it seems that the Rapa Nui culture might have succumbed to a simple case of bad fortune, a confluence of unlucky factors contributing to their decline. The concept of fortune is an important one that craft incorporates deeply into its lifeways. I have briefly covered it in the last chapter and will return to a sustained study of it in the next. For now, rather than bad luck, I assume an even worse scenario as a thought experiment. Assume the Rapa Nui simply possessed a *will to enframe* their island using the craft tools and skillsets available to them. It would be absurd to claim that this is an impossibility. As I said earlier, it is entirely imaginable that a culture could decide to dismantle a mountain using only shovel and pickaxe.

As intimated in the conclusion from last chapter, it is probably likely that, at a given time in the past, humans may have possessed the will to enframe. However, I propose that is comparatively more difficult to enframe utilizing craft tools and lifeways. The world fights and bucks at every turn, such that perhaps only the most unthinking people would pursue this course of action. In other words, I suggest that given craft conditions, the world produces *friction* against that which would seek to exploit it. If the conditions of the Easter Islanders under the thought experiment hold, it seems that their landscape very much forced them to listen to it, one way or the other. Under craft conditions, a landscape can fight back against the will to enframe. I think the same circumstances apply to a parallel thought experiment where the Easter Islanders simply succumbed to a series of bad decisions on their part. Craft lifeways, crucially, should not be though to insulate people from blunders or boneheadedness. (But it is all the more easy to identify blunders when the natural world has more freedom to speak.)

An important difference between modern and antecedent technologies is that the former can *silence* the speaking of the natural world in a way that the latter cannot.[11] If past peoples had to move from a region due to poor farming practices that encouraged deforestation, technology today enables humans to ignore the severe protests from the natural world. Advanced farming techniques pump vast quantities of mined and engineered materials (fertilizers, insecticides, herbicides, pesticides, fungicides) to make fertile what would otherwise be barren in short order due to enframative exploitation. In the case of the Rapa Nui, it is likely that these techniques could have perhaps "kept the eco-system running", despite protests. For example, even seawater can be desalinated to water crops, as already occurs in some arid countries such as Israel. Since things continue to function in line with what is needed by enframative practice, methods such as these can remain deaf to what nature calls for.[12]

I think it is reasonable to argue that a craft tool, *qua* tool, is of a different kind than post-Industrial tools. But if this is not convincing, I think it is more effective to be reminded that tools are part of technologi cal paradigms and lifeways. If there is a problem distinguishing between modern and antecedent technology, it becomes more tractable when considering both kinds of technology against this more robust backdrop.

Before closing this section, I make one further clarification. The words 'antecedent' and 'modern' with regard to technology are imperfect terms. Antecedent technologies are meant to recall exactly that, antecedent technological artefacts and the customary practices that have historically went along with their use. I have said that one is altogether less likely to be able to silence the natural world given such practices. In this sense, technologies could be discovered (be granted) in the future that very much qualify as "antecedent" in nature. More precisely, when attempting to talk about technologies that possess such a character, antecedent technologies are those that fit with the guardianship mode of disclosure (listening to the world) that I aim to describe. For this reason, it is perhaps better to speak of craft or guardianship lifeways (which are inclusive of tools) and their respective modes of disclosure versus modern technological practice's mode of disclosure. Indeed, as this chapter leads to the next, the discussion more closely mirrors this revised distinction.

The present discussion should further serve to intensify the characterization of the guardianship mood. As I hope will become clear, antecedent technologies are those that are more likely to allow one to fall into this mood. It is not just that the mood itself is set against enframative practices. It is that this mood, by employing craft tools and lifeways, serves as a continual reminder that the world is *other* than that which can be torn asunder and reshaped to meet the needs of technology. Moreover, where this mood is not yet present, I argue that craft tools and lifeways—through their own mode of phenomenological revealing—have the capacity to give birth to such feelings in oneself.

The Gear and the Capacitor

Writing in *The Gods and Technology: A Reading of Heidegger*, Richard Rojcewicz likens the difference between antecedent and modern technologies to be synonymous with the difference between the *gear* and the *capacitor*, respectively (2006, 71-4). He means to draw the distinction both literally and *analogically*. The difference, for him, comes down to the directional transference of nature's energies versus their storage.

I first take his distinction in the literal sense. Rojcewicz, expanding on Heidegger's example from "The Question Concerning Technology" (1993, 320), draws a parallel between the gear and the capacitor and the windmill versus the wind turbine. The gear changes the direction of energy that the natural world already has within itself to give. As the wind blows by, the windmill's sails turn the windshaft. The reciprocal motion of the horizontal windshaft is changed to vertical motion through the wallower gear, which spins the upright shaft. At the bottom of the upright shaft is the millstone, which grinds the grain between another millstone. The mill only works when the wind is blowing. On a calm day, no grain may be milled. The use of the mill is therefore tied, in a very palpable way, to the wind's whims. The essence of the gear is that it merely transmits motion and does not locomote in and of itself. Crucially, the gear does not *transform* the winds energy into a different kind of thing, but instead, let's the wind be wind.

Rojcewicz argues that the wind turbine, in contrast, ignores the nature of wind: e.g., its capacity to sometimes blow, sometimes not, sometimes gust, sometimes carry on tranquilly. Even on a tranquil day, a modern wind turbine is so finely balanced that even a light breeze will get it going (Rojcewicz 2006, 74). If there is not enough wind, it will employ internal generators to begin rotation, so that any small current will do (74). It does not much care if there is a good breeze, for "to a modern wind [turbine], every day is a windy day, since the air is always in motion and always contains some exploitable energy" (73). The wind turbine, in this way, ignores the wind's whims.

At the same time, the wind turbine changes the wind's whims into something that is securable and transferable. That is, the turbine ultimately *transforms* with wind's blowing into pure *energy*, which can then be stored in a capacitor of some sort. The wind's energy may be stored as electrons inside a battery; it may be stored pneumatically as compressed air (which is then in used to spin a turbine "on demand" when electricity is needed); or, using the same principle, it may be used to pump water behind a dam. Here, Rojcewicz understands a capacitor as any energy storage device, whether it be fluid or electrical in nature.[13]

Because the capacitor stores energy for later use, one can count on the energy exploited from the wind even on a calm day: "The capacitor, finally, does not use or use up that new form of energy but instead *hoards* it, so that it may be discharged when and where humans see fit" (Rojcewicz 2006, 74). This example displays the crucial ontological difference between modern and antecedent technologies, as one of enframing versus letting be. It is only because modern energy storage systems exist that humans can ever begin to imagine the wind as a resource, something that can be captured and stored up. The wind's power becomes available, or as Heidegger says, on call at a moment's notice.

The historic windmill, in contrast, operates at the *pleasure* of the wind. The nature of the wind, as a fickle element of nature, is continually recalled throughout the grain milling process. Too high a speed and the wheels will scorch the grain, for example. The wind directly effects the speed of the milling wheels, so the miller needs to be continually aware of the wind while milling, either adding more grain to the wheels or adjusting the sailcloth (a large endeavor) to slow the wheels down. All this is to say that it *matters* to the miller the character of the wind that it is blowing at any given time. The nature of wind is incorporated into the entire milling process, while the turbine unlocks wind as something *always* exploitable, even the faintest eddy. This levels all kinds of wind down to the same sort of thing, energy.

The windmill/wind turbine is a concrete example of what Heidegger is pointing towards when he says that

> [s]uch challenging happens in that the energy concealed in nature is unlocked, what is unlocked is transformed, what is transformed is stored up, what is stored up is distributed, and what is distributed is switched about ever anew. Unlocking, transforming, storing, distributing, and switching about are ways of revealing. … This regulating itself is, for its part, everywhere secured. Regulating and securing even become the chief characteristics of the revealing that challenges (1993, 322).

I do not think many would, at least initially, think of "green" energy sources as elements of enframing, but what Heidegger and Rojcewicz see in sources such as hydroelectric dams, wind turbines, and solar panel arrays is the transforming of the natural world into something that is secure and therefore ready to be called upon as energy.

Another way that technological processes regulate wind is to apply a cost to it. Wind, one says, is "cheaper" than coal or natural gas. It therefore makes "economic sense" to utilize wind as energy. In doing so, one stacks up wind as essentially of the same *kind* of thing as coal or natural gas—just one among many resources, all electrons, all interchangeable. Indeed, when talking about the total energy available on demand, the grid does not care to distinguish whence the energy is available, only that is available. To pre-determine and totalize wind as energy and turn it into something that can be bought and sold in the same units as other sources of energy is to forget what wind is in its essential character.

Heidegger already draws this distinction in the passages following the crucial hammer example in *Being and Time* (1962, I, §3, 100). Here, he picks up on the difference between seeing the wind as purely an object of manipulability (i.e., wind as wind-*power*) and the wind as seen in more authentic everyday dealings. This comes down to the difference between the pure present-at-hand object of study versus the readiness-to-hand of things that people once experienced as a matter of course:

> If its kind of being as ready-to-hand is disregarded, this 'Nature itself can be discovered and defined simply in its pure presence-at-hand. But when this happens, the Nature which 'stirs and strives', which assails us and enthralls us as landscape, remains hidden. The botanist's plants are not the flowers in the hedgerow; the 'source' which the geographer establishes for a river is not the 'springhead in the dale' (100).

Experiencing these elements in their ready-to-hand nature in a visceral way allows one to in turn see them as something more than objects of technological manipulation. It is important, here, to pick up on the notion of granting and thankfulness from the last chapter. To let the wind be wind is to realize that wind, by nature, is both fickle and at the same time, giftlike.

The wind that turns the windmill's sails does not just grant humans the ability to mill their grain, but it also grants them reprieve on a warm day. The same wind grants flowers their pollination, through which in turn humans may nourish themselves on nature's fruits. Wind also comes up against humans, harrying them and becoming a danger to them in the form of waves, hurricanes, squalls, gusts, gales, tempests, tornadoes, and typhoons. The blowing of the wind, as a fickle element of nature, is not subject to securing or capturing in its ownmost essence. It is no coincidence that the Greek wind-gods, such as Boreas in the *Phaedrus*, are pictured as wild, untameable, stallions. To not just interpret or describe but disclose the wind as a stallion is to radically experience the wind as unbridled, as something volatile. The fact that there are so many sometimes lovely, sometimes terrifying, proper names for wind (the Seminole, the Sirocco, the Chinook, the Williwaw, the Tuaoloa) is an indication that wind was once so much more intimately experienced by humans.

Tapping into the wind—any wind—as secured energy source is to forget what is essential to wind. Since wind can sometimes be experienced as destructive, this is to cover up the *good fortune* required to have something such as flour to make bread in the first place, which first requires the *gift* of wind throughout the process in which it comes to be: from the grain's pollination, to its drying, to its milling.

I think it would be a mistake (which Rojcewicz does not commit) to take the analogy of the gear and capacitor too far. That is, someone might object that the natural world is full of capacitors. The tree, for example, might become a capacitor in the sense that it is a store of energy in the form of firewood for the future. This would be to go too far. The burning of wood in an open fire or hearth does not transform the nature of wood itself into pure energy, which is then secured and transferred when needed. Instead, firewood directly produces heat, which is of a different essence entirely than stored-up energy. Using traditional craft tools such as axes, a tree must be felled, bucked, split, and then seasoned, which can take as much as two to three years for some woods. Freshly split wet wood does not burn well, if one can get it to burn at all. All of this takes considerable physical effort such that it is impossible to forget that the gift of heat and cookery is hard won and precious. From an indigenous perspective using traditional tools, this is all the more so. Nuu-chah-nulth peoples historically used pieces of dried standing dead wood which they prized from the tree using wedges. The gift of dried wood in the forest on a rainy day comes as a blessing.[14]

Notice how each of these approaches differs from using wood as "biomass" to produce energy for a city. Here, wood "debris" (wood chips, dust, and off-cuts from industrial milling) is compressed into bricks and burnt to release its "energy potential". It is consequently stored via several mechanisms such as the fluid or battery-based methods discussed above. The difference between the tree *standing* in the forest and pure energy, which *stands by*, is the difference between modern technology and antecedent technology. The one can be experienced properly as *gift*, while the other is an element in a chain of exploitation, which would see every component secured.

To deepen the discussion, I turn to Aristotle's four causes, which show how a thing is indebted to the world for its existence. The elements of craft, I ultimately claim, do not cover up what is responsible for a thing's existence but instead let the thing wear its causes, so to speak, on its sleeve.

The Four Causes

Aristotle's four causes show how a thing is indebted to its world for its existence. In the last chapter, I attempted to show that authentic poetry, thinking, and craft (as *techne*) all properly aim at bringing a thing forth in its dwelling character. I now turn to Heidegger's unique interpretation of Aristotle's four causes to supplement this view. That is, the four causes establish something important about how a thing dwells within its lifeworld. This is with respect to that which is responsible for, as Aristotle says, its arrival onto the scene, its "coming to be", as well as its "passing away" (Aristotle 2001, *Physics*, II.3, 194b23). In other words, the causes showcase how a thing is *indebted* to its world for its existence or non-existence: e.g., The doctor may positively cure someone by bringing her into health or negatively cure her by causing symptoms to pass away.

Heidegger's contribution to Aristotle scholarship in "The Question Concerning Technology" is a rescuing and unification of Aristotle's notion of *aitia*, which is customarily translated as "cause" after the Latin *causa* (1993, 313-4). Aristotle treats of the four causes in *Physics* II.3 and *Metaphysics* V.2, as well as the *Posterior Analytics* II.11. While there are a great many interesting issues surrounding interpretation of the four causes, here, I largely limit my discussion to definitional matters. Heidegger sums up the received definition of the four causes, handed down from the Latins, succinctly:

> For centuries philosophy has taught that there are four causes: (1) the *causa materialis*, the material, the matter out of which, for example, a silver chalice is made; (2) the *causa formalis*, the form, the shape into which the material enters; (3) the *causa finalis*, the end, for example, the sacrificial rite in relation to which the required chalice is determined as to its form and matter; (4) the *causa efficiens*, which brings about the

> effect that is the finished, actual chalice, in this instance, the silversmith (Heidegger 1993, 313-4).

Aristotle's causes range over *motion* as such. This includes the entire universe and everything in it, save the *ho ou kinoumenos kinei*, "that which is in motion without being in motion", the prime mover. Aristotle's idea of motion is a phenomenological description of the way the world occurs as a constantly unfolding place in which things both come to presence and recede from view. Aristotle's word for all that is moving—the universe—is *physis*, which is generally translated as "nature". This is also where we receive the word "physics", the study of motion. Scientists today do indeed think of the entire universe as being in motion through expansion and acceleration. At the same time, it is also common think that the causality inherent in the motion of things is purely mechanistic: e.g., billiard balls impacting one another and scuttling away. But this is to prize the efficient cause over the others. Each cause is necessary and co-responsible for a thing's existence. A thing does not exist by efficient cause alone.

It is telling that Aristotle does not think that one needs two different causal stories to explain the made thing and the natural thing. The four causes range over each just the same. Insofar as humans are fully natural beings it is unclear that human making is in any sense unnatural: While honeybees are the unique animals who make honey, humans are the unique animals who posses *techne*. After all, to bring up a point from the last chapter, *techne* comes to humans as granted and is thus native to their essential character.

Heidegger is critical of using "cause" to describe what is at work in Aristotle's customary use of *aitia*: "The Aristotelian doctrine neither knows the cause that is named by this term, nor uses a Greek word that would correspond to it" (1993, 316-8). The scholarly tradition stemming from two important essays written by Gregory Vlastos (1969) and Max Hocutt (1974) agrees with Heidegger's estimation—that translating *aitia* as "cause" leads one down the garden path into thinking that the efficient cause has pride of place over the others: "[T]o translate the term as 'cause' is to make nonsense of Aristotle's talk about any but efficient *aitia*, since the English word 'cause' means productive agent or event, and nothing else" (Horcutt 1974, 386).[15]

Heidegger forcefully maintains in the beginning of the "The Question Concerning Technology" that taking 'cause' primarily in the agential/productive sense is deceptive, because this might lead one to think that humans have complete control over technology. At the same time, it confuses one into thinking that the other senses of *aitia* should, too, be translated in terms of agential/evential production (i.e., as species of efficient cause):

> Thus, Aristotle has been made to say that (a) that the material 'cause' of the statue's weight is its bronze, (b) that the formal 'cause' of the angle at a semi-circle being a right angle is its equality to the half of two right angles, and (c) that the final 'cause' of walking after dinner is its health. … [T]hese statements have the grotesque implications (a') that the bronze *produces* the statue's weight as the sculptor produces the statue, (b') that the abstract entity 'equality to half of two right angles' *produces* the rectangularity of the right angle, and thus produces itself, and (c') that the health which does not yet exist *produces* the walking which does exist in order that the health eventually will. These are the very sorts of absurdities for which Aristotle chastises his predecessors (Horcutt 1974, 386).

Here, Hocutt thinks about a similar case to the one above in the paragraph discussing physics. Instead of confusing all causes as a kind of physical-efficient cause (*à la* pure deterministic metaphysics), one now mistakenly understands all cause under the rubric of production (especially agential production). To this end, Heidegger picks up on three better translations of *aitia* ([A]"owing thanks" / "indebtedness", [B] "being responsible", and [C] "occassioning") that go beyond the customary sense of "cause" (1993, 314*ff*.). Importantly, he isn't doing anything novel with the translations here. Each of these meanings is commonplace in the Greek. I now briefly take each in turn.

(A) [*Owing thanks*/*indebtedness*] As Hocutt points out, if *aitia* is translated purely in terms of "cause", one gets some odd grammatical construction. Take the example of wood-framed house and material cause. In English, one does not generally think of the wood frame, the material cause, as somehow *causing* the house. One is perhaps more comfortable with saying that the carpenter, the efficient cause, brings about the house through her skill, her *techne*. Customary thought may stretch so far to as to say that the wood frame causes the house to remain standing. But this still does not get at what Aristotle means. Instead, it might be proper to say that the house owes thanks or is indebted to the trees and their timber for its formation—not just as those elements which cause it to remain upright. The house would not exist as the same house without the timber in which it is built. In this way, the house is indebted to the timber for the way it exists. Can one also not say, in terms of a natural thing, the same? The maple owes thanks to the samara. It induces the growth process to go forward while also holding within itself its eventual form. It owes thanks to the rich humus and nourishing rains, which provide it with the material fabric needed from which to become itself. Each element is required for the maple's coming to be. A lack in any respect would mean that the maple would fail to appear.

(B) [*Responsibility*] *Aitia* can also mean "responsibility". As Heidegger says, responsibility, here, has nothing at all to do with praise and blame (1993, 315). Instead, to be responsible for something is to induce it to come forward into presence. For example, in *Laws 1*, the Athenian opens by saying, "Tell me, gentleman, to whom do you give the credit for [*aitian*] establishing your codes of law? Is it a god, or a man?" (Plato 1997, Bk. 1, 624a). This fits with Aristotle's use of *aition*, which he uses just as much as he uses *aitia*, the former being more customarily used in a legal setting. The definition might be amended, then: The wood in the example above in part *shares responsibility* for the bringing about of the house. As Heidegger puts it, the wood is "co-responsible" for the coming to be of the house (1993, 315). The house would not be possible without it. In the same way, the samara, the rich humus, and the nourishing rains share co-responsibility for the coming to be of the maple.

(C) [*Occasioning*] Another sense Heidegger identifies is related to an understanding of "occasioning". English's sense of 'occasioning' ultimately comes from the Latin *occidere*, which means to "fall down" or "fall together": i.e., Two circumstances naturally fall together when considering them, such as the right angle and the square (see Harper 2018d). Pindar, in *Nemean Odes* 7.11 (1990), describes the deeds of Sogenes in the pentathlon: "If someone is successful in his deeds [such as Sogones], he grants occasion [*aitian*] for sweet thoughts in the streams of the muses" (*cf*., Svarlien 1990). Sogones, by winning the pentathlon, occasions the muses to add his deeds to their influence over mortal poets and songwriters, and they will, in turn, be occasioned to sing of him. The two circumstances naturally fall together, the deed and the sweet thoughts. Importantly, this further separates *aitia* from the sole sense of efficient cause, as mortal poets do not sing of deeds of their own accord. Rather, they await an artistic impulse which comes from the gods.

Another example: Lucien, born later, writes in *The Tyrannicide* of a character who makes an interesting point to a jury (1905, 178). A person who occasions another's death through indirect means is just as responsible as the person who draws the sword. A man kills the tyrant's son. In discovering this, the tyrant slays himself. However, the killer asks for the reward offered for the slaying of the tyrant, though he did not do so with his own hand. The killer argues that "it [is] the intention of the law that the [*aitia*, occassioning (of someone's death)] should rank with the act itself" (1905, 179). According to the killer, the received reward—the "blood-debt"—should be the same (178). The killer is not directly responsible for the tyrant's death, but he brings into being the occasion for the tyrant to react in such a way. In the tyrant slayer's estimation, each of the two seemingly different occassionings should be treated as *equal* with respect to the reward. This further separates *aitia* from efficient cause, as in this case, the killer asks to be marked a cause, as that which occasioned or induced something to go forward: In this case, the tyrant's anguish and his subsequent suicide. This suggests (and this is Heidegger's contention) that no one form of cause should take precedence over the others.

A further thing to take from the notion of 'occasioning' is an idea that has been repeatedly returned to. That is, while indeed humans occasion a house to be built, in no sense did they brutely invent the idea of a house as a home for humans. Rather, humans—as creatures without sharp teeth and fur—are the creatures who are granted the ability to shelter themselves both from those with teeth as well as the "teeth" of inclement weather. This is part of human character and by no means do humans make shelter except out of that which is already within their nature to do so. So, to say that humans occasion a house to be built is to say that they, in a sense, already have its possibility within them. This is the same as saying that the clay has the possibility within itself to become a jug. When the clay becomes part of the occasioning that brings-forth the jug, in no sense does it *make* (or is the *author* of) its own innermost possibility of becoming a jug. In the same way, humans do not *make* clay into a thing that may become jug. What human *techne* does is see the possibility that clay may become jug and then occasion the jug forth into actuality. The efficient cause, which in the case of *techne* is always humans, is also in this way *not human*, but comes from beyond them in the sense of granting.

Recall that Aristotle thinks the each *aitia* acts as an explanatory device that ranges over all that there is and includes not only human productive activity, *techne*, but all natural activity such as the growth of the tree and the movement of the planets. Where one might read three senses and see owing thanks/indebtedness, responsibility, and occassioning, Aristotle sees all senses unified under one principle term, *aitia*. Indeed, where one might see four distinct causes, Aristotle saw manifest *one and the same cause*, fourfold. More forcefully than this, Heidegger suggests shuttling 'cause', not only in the sense of efficient cause, from the understanding of *aitia* altogether: Each of the four, he says, "have simply nothing at all to do with bringing about and effecting" (Heidegger 1993, 314). The "author" of the jug does not *bring about the* fact that the clay is of a character such that jugs can be made from it.

In order to clarify the preceding discussion, I now turn to an example of the carving craft. I do this to highlight the fact that *techne*, as the kind of bringing-forth that it is, allows the occasioned thing to hold forth the three senses of *aitia* just discussed. This builds upon a realization from the previous chapter: What craft does is show how the made thing is indebted to its world for its coming to be. I use this practical craft example to bring these different understandings of *aitia* together, which is where they belong.

I was struck by the late Beau Dick's description of his process of creating a thunderbird from a log of old-growth red cedar (Woodend 2018). Dick was a sculptor, a Kwakwa̱ka̱'wakw member, and one of Canada's greatest indigenous activists. The circumstances under which Dick found the cedar are interesting. Some number of years before the piece ended up outside of Dick's shop, the great log washed ashore (2018). When a friend of Dick's bucked a piece off and split it for firewood, he froze—awed by the display of its grain (2018). He called Dick immediately, who took it to his workshop, where it was largely forgotten:

> "I stopped and looked at it one day, and I said in my playful manner, asked it, what do you want to be? I touched it, and I closed my eyes and whoof! This image of a crooked beak appeared in my corneal cortex so clear… I said 'Hey, I know what to make out of this piece of wood!' I grabbed it and went at it…I nailed it, but wait a minute how did that happen? Hey, wow! Something else was making this all happen, it wasn't me, I was only a part of it" (Dick, quoted in Woodend 2018).

Heidegger uses the example of the silversmith making the chalice to explain the four causes. I mirror Heidegger's discussion when discussing Dick's use of the cedar (*cf.*, 1993, 313-315).

It is important that Dick's words already combine all three senses of *aitia*. One sense of *aitia* discussed was 'responsibility'—who or what the object owes thanks to for its coming-to-be: Dick grasps immediately that he does not effect *creatio ex nihilo*, but is instead co-responsible, along with the cedar and his ancestry, for the form it will take. Heidegger further describes owing thanks as an 'indebtedness': i.e., how an object is indebted to the causes for its coming to be. Among other things, the carving is indebted to its thunderbird form, which speaks through Dick's *techne*. Another sense is 'occasioning', which highlights the idea that the bringing-forth inherent in nature and *techne* comes from within the nature of *physis* and human being. And Dick's point here is that his *techne* did all the speaking, while he receded into the background of the process of occasioning. I highlight how the (A) formal, (B) material, (C) telic, and (D) efficient causes coexist together in Dick's creative process.

(A) [*Formal cause*] The cedar grew for hundreds of years before showing within itself the "aspect (*eidos*)" of ancestral thunderbirdness (*cf*., 1993, 315). That is, the shape was always already there. It only needed Dick's *techne* to discern it. To others, it may just be firewood. But even then, it is curious that Dick's friend saw within it something unique and special. He knew that someone with the *techne* could discern what that "special" was. *Techne* is therefore the ability to see within a thing what it could become and what is more, bring it forth into existence.

Importantly, the natural material a thing is made from properly dictates what forms it can take. In the case of Dick, the cedar itself lays down a pathway for use. Notice how practicing *techne* is different from what the mere technician does—the one whose job it is to plot all cedars on a map, direct others at the helm of gargantuan machines to cut them down, and level all the trees down to, as Heidegger says, “the orderability of cellulose” (1993, 323). This latter case in no sense listens to what the individual tree has to say.

I have seen Tla-o-qui-aht carvers, for example, take the speaking of the cedar to heart: The crotch between two yellow cedars that have grown together become an eagle’s wings; the figured burl becomes the whorls on a sea turtle’s back. These sculptors recognize that though the natural world is silent, it yet speaks—speaks as to what *form* it may become. The cedar becomes just as essential to the process of occasioning as the carver. The cedar continues to speak once carved, since its form (the crotch, the whorl) is not muted in the process. The technician, on the other hand, *silences* nature everywhere through pressuring material to conform to technical sameness. For the technician, the form of cedar, as cellulose, is pre-determined as something that can be understood through technological process, a feedstock.

(B) [*Material cause*] The thunderbird owes thanks to the life of the cedar, who died, and found new life as a reminder of kinship with the Kwakwa̱ka̱’wakw’s animal ancestors. The unique thing about Dick’s process is that there was no prior planning: The cedar had already, as the distinctive kind of thing that it is, “planned” out what it wanted to become. The cedar is much more than pure material, such as plastic, which can take on nearly any shape. There’s a limit and boundary to what cedar can become. Cedar, being prone to separate along the grain, cannot take fine detail. As such, it needs to be carved boldly, with sharp tools. Tight, fine carving—as seen in the filigreed basa carvings of English cathedrals—would be impossible here. The aspect of the thunderbird only revealed itself as capable of existing within the boundaries of *this* log of cedar. As such, both the cedar, as material, and the aspect are "co-responsible" for the thunderbird's coming-into-being (*cf*., Heidegger 1993, 315).

At the same time, owing to its age, the cedar deserves honor and thankfulness. Dick lets the cedar be by stewarding its form into that which it lends itself to becoming: "[W]hat do you want to be?" (Woodend 2018). In asking after the form it wants to become, Dick shows respect to the material. And the cedar, which stood sentinel in the forest for hundreds of years, eventually floating in the ocean to Dick's threshold, will again stand sentinel in a new form, looking after the Kwakwa̱ka̱'wakw for hundreds more.

In *What is Called Thinking?*, Heidegger briefly turns to craftwork (which he rarely explicitly addresses) and gives the example of the cabinetmaker's apprentice to demonstrate the difference between the ancient *technites* and the modern technician with respect to *working with* natural materials:

> His learning is not mere practice, to gain facility in the use of tools. Nor does he merely gather knowledge about the customary forms of the things he is to build. If he is to become a true cabinetmaker, he makes himself answer and respond above all to the different kinds of wood and to the shapes slumbering within the wood—to wood as it enters into man's dwelling with all the hidden riches of nature. In fact, relatedness to wood is what maintains the whole craft. Without relatedness, the craft will never be anything but empty busywork, any occupation with it will be determined exclusively by business concerns. Every handicraft, all human dealings are constantly in that danger (1968, 15).

In the last chapter, I briefly referred to this passage, but now it should come into fullness. The authentic craftsperson, above all else, *responds* to the material she has before her. While cedar can make fine furniture, paying attention to the qualities of cedar itself act as a guide in the making. Red and yellow cedar naturally have preservatives—thujones, from *thuia*, "cedar"—that resist rot and insects. Indeed, an ancient cedar, once fallen, will persist on the forest floor for a century or more. In terms of furniture, if one lines a chest with cedar, it will help drive moths away from one's linens. Beyond this, cedars naturally lend themselves to a sculpture such as Dick's, which is meant to stand the test of time—perhaps, for example, to show the enduring connection between one and one's animal ancestors. A sculpture or totem (Haida:

gyáa'aang) made of maple would rot quickly, in contrast—and would therefore not be fit to act as a symbol of endurance. The *relatedness* to cedar and the unique characteristics of not just cedar as such, but the individual character of the cedar before him, is what maintains Dick's craft.

(C) [*Telic cause*] The thunderbird is indebted for its existence to its telic boundary, "that which in advance confines" the sculpture "within the realm" of sanctity, as a reminder and safekeeping of the spirit of his Kwakwa̱ka̱'wakw animal ancestor (*cf*., Heidegger 1993, 315). Heidegger calls this process "circumscription", that which "gives bounds to the thing": "With the bounds the thing does not stop; rather, from within them it begins to be what after production it will be" (315). Certain possibilities are off limits. It should no longer, for example, be used as firewood. At the same time, the thunderbird is, once Dick has unveiled it, free to show itself, within its bounds, as the longstanding memory of Dick's ancestors. Again, analogous to the example of a young child, by putting bounds on a thing (or person), one paradoxically *frees* it to become the thing it will be.

A thing's story is not done when it becomes itself (when the cedar becomes the thunderbird). This is different from the customary understanding of *telos*, which sees *telos* as something stationary: the completed house or the fully-fledged maple. When a thing reaches its goal, it does not remain motionless—for all of *physis* is constantly under poetic motion. This would be to misunderstand *telos*: "That which gives bounds, that which completes, in this sense is called in Greek *telos*, which is all too often translated as 'aim' or 'purpose', and so misinterpreted" (Heidegger 1993, 315).

The proper understanding is apparent in Aristotle's use of *entelecheia* to describe the state where a thing is *en-teles*, finished, complete (i.e., a fully-built home), yet is still at work (housing a family, resisting the forces of nature, etc.). Thus, the word *entelecheia* can be rendered as "to-be-at-work-in-completeness". Heidegger argues that the telic dimension of *aitia* sets boundaries around—and *sets to work*—both the aspect (*eidos*) and the matter (*hyle*) of the thunderbird (*cf*., Heidegger 1993, 315).

Aristotle gives the parallel example that health is the "for the sake of which" of walking for exercise. 'Health' is not a stationary concept but is a continual process. Therefore, the "end" that is health unfolds continually over a person's life. Similarly, the adult form of the maple is not properly its own end in a *final* sense, since the life of a maple is cyclical. Further, the maple itself is but a nested element within a larger process that involves the entire forest. Indeed, in the *Physics*, Aristotle highlights the difficulty of attributing an end, in a final and completed sense, to the natural world—which is in cyclic motion. Because even human *techne* is ultimately part of the *physis* that is native to human being, one should not think that it is any easier to draw bounds around human bringing-forth or determine when a made thing is "at rest".

On a related note, Aristotle highlights the difficulty of separating the formal and telic *aitia* in the natural world (2001, *Physics*, II.3 198a23-6). For example, the way the maple unfolds from its beginning as a samara into a fully-fledged maple combines the formal and telic modes of *aitia*. The form that the maple will eventually become is also its *telos*, what it will become when it fully shows itself: "[F]or the 'what' and 'that for the sake of which' are one" in these cases (198a23-6). Similarly, I would argue, while one can view the formal and telic modes of indebtedness as distinct within *techne*, one need not to. For example, the form of the house (its shape) can be viewed as distinct from the for sake of which it is built (as a place for dwelling). But it would do just as well to see written in its formal shape as having everywhere within it its purpose, which is human dwelling.

(D) [*Efficient cause*] While Dick himself brings the thing forward into existence, he recognizes that it was not all his doing. Aristotle makes it clear that craft, *techne*, is the knowledge that one possesses that shows one how to bring entities to light. Craft is not reducible to a set of actions: e.g., the summation of the carving strokes required to make the thunderbird. Craft is the seeing of the slumbering shape as well as the knowledge of how to reveal the thunderbird from within the cedar. At the same time, it is having the embodied capability and the right tools to carry out the design (put bounds around the thing). This revealing is always at the same time a process of judgment: knowing what to leave hidden. The thunderbird owes thanks to Dick's *techne* in this dual way.

Crucially, Dick is not the author of carving from without. At a broader level, the kind of occasioning that Dick practices is already primordially granted within human character as such: Humans are the creatures who create lasting reminders of their ancestors. The image of a Randian John Galt-type creator, who *sui generis* invents from out of nothing, is pure fiction. To be the *technites*, the efficient cause of a made thing, is to operate within the sway of granting that is primordially human.

Beyond this, to what does Dick owe thanks for receiving this knowledge? … partly himself and partly 'something else': The spirits of his ancestors that first came to the coastal Pacific Northwest as animals. Authentic craft, as will be seen in the next chapter, is always knowledge relative to a particular region: chthonic knowledge. Dick's own knowledge, the knowledge of how to bring-forth the thunderbird from concealment, is "tacit" rather than codifiable. 'Tacit knowledge' is knowledge that cannot be put into words and formalized, only ultimately performed and learned through action. As Matthew Crawford (2014) argues, if it possible to put into words, these words always admit of much metaphor and poetry. As such, tacit knowledge—if it can be communicated—only "shows up" for one who is already familiar with the lifeways related to a particular craft. It is a kind of knowledge that's difficult, perhaps impossible, to speak of in plain terms. As Dick says, "Sometimes better not to think, just feel, when being creative" (Boll 2014). In other words, one learns how to *feel* what the materials before one want to become.

Heidegger ties the four forms of causing with a word that he hopes will have significance to the modern reader while at the same time hearkening back to the Greek word. The word he uses to signify what Aristotle meant by *aitia* is *Ver-anlassen*, "an occasioning or an inducing to go forward" (1993, 316). What induces an entity to come to be are the fourfold occassionings. But to identify the occassioning of a thing, one must tell a story about how it comes to be. That story is the story of its indebtedness to the world from whence it came. Put another way, that which a thing owes thanks for its coming to be is each of the fourfold occassionings. *All things*, no matter their heritage, come to be and pass away by sway of the fourfold occassionings. Importantly, there is nothing prescriptive in Aristotle's forwarding of the four causes. They are merely taken to be the four ways of explaining every-thing.

I argue that what craftwork does is allow a thing to shine forth in its indebtedness to its world. Enframing technology, as has been seen, everywhere covers up a thing's indebtedness. Plastic is the perfect example of this, a thing that can take on the form of nearly any-thing, from a tea towel to a counterfeit facsimile house plant. Because plastic is a ubiquitous feedstock, it can come from anywhere and be nearly any-thing. Plastic things, as products of enframing, are properly *homeless*.

Dick's carving, on the other hand, is very much occasioned by its *home*, from the *aitia* that come together to induce its coming to be. Cedar, as a material, is part of Dick's lifeworld. Its longstanding nature ensures that the reminder of his ancestors will endure. When it fell and washed up on his shores, it had already begun its journey toward becoming, in its aspect, the thunderbird. The wisdom in Dick's hands induces to go forward the cedar's shape and the memory of his ancestors within the thunderbird itself. None of these lonely causes would create the thunderbird. All are co-equal in its coming to be.

The Fourfold

Heidegger expands upon Aristotle's understanding of the four *aitia* by forwarding his own parallel conception of that which a thing is indebted to for its occasioning. He calls this the 'fourfold' (earth, sky, divinities, mortals) and he returns to it repeatedly in his later writings. In the next chapter, I take the fourfold and its relationship to the disclosure of craft as my primary topic. Now, I make some preparatory remarks about the fourfold before discussing Heidegger's forwarding of it in "The Thing" (2001b).

The appropriate alternative disclosive stance to enframing (which sees the world as resources) is guardianship (which instead sees the world as holy and worthy of safeguarding). While guardianship is a practical stance, Heidegger's fourfold occassionings are explanatory: in this way they are peers to—but not co-extensive with—Aristotle's four causes.[16] However, they also together form a new phenomenological conception of "world" for Heidegger. Heidegger's conception of a fourfold world is a recapitulation of a world that perhaps existed in the past and could exist again in the future, yet in a new form. (Again, anachronism is impossible: The modern world is no longer alive with divinities—nymphs, dryads, and gods of other small things—as it once was for Heidegger's [reconstructed version] of the Greeks.)

At one level, as Julian Young says, the practices of authentic guardianship constitute a *faith*—that a world such as this could exist (again). Just as for Luther salvation is not achieved through good works, there is no guarantee that such a world will come—even through right action. Nevertheless, the outward expression of faith is always said through what one does, *opera bona*. Furthermore, the more one operates in the mode of guardianship, which is the realm of *techne*, the more likely one is to become a guardian. Indeed, craft just is guardianship.

If what guardians do is protect an appropriate ontological conception of the world, then *the fourfold gives content to that ontological conception*. To treat the world as if it were fourfold is treat it as if it were composed of earth, sky, divinities and mortals. The fourfold is usually explained by Heidegger scholars as a rethinking of a traditional metaphysical view of propertied objects. In *The Fourfold: Reading the Late Heidegger*, Andrew Mitchell argues that the "fourfold is … a thinking of things" (2015, 307*ff*.). A new thinking of things brings out things in a certain way—under a certain light. In this vein, authentic thinking, according to Heidegger, is a form of *poiesis* (1986, 15*ff*.). *Poiesis* is bringing-forth—specifically a bringing-forth into the light of the fourfold. *Poiesis* is, in this way, a revealing (uncovering: *aletheia*) of things in their fourfold essence.

Not all revealing is *poiesis*. For example, the revealing of enframing thinking discloses objects in terms of an 'as-structure': as resources, as able to be piled up, counted, fracked, or cracked. Authentic revealing *lets things be*: "What is true lets a being be a being", rather than *as* something that has been predetermined before the thing even comes onto the scene (Heidegger 2012, §221, 272). Things are able to *be* in the sense that they set themselves back into a world that shelters them, a world that exists in light of the fourfold. A world that shelters them does not exploit them via technological machination: the incessant drive to mechanically understand everything, to make everything into data, materials, resources, and so on. The wisdom of *poiesis* is a knowing of what to uncover, what to leave covered—whether that be within thought or practice. This wisdom already leads to the next chapter, which is an expansion of craftwork practical orientation directed at the fourfold. The bringing-forth inherent in authentic craft is a knowledge of *how to reveal the world in the proper way*—in a way consistent with the fourfold. The entire process of craft down to the tools it uses lives within this way of revealing.

In "The Thing", Heidegger considers how the fourfold might be brought to light within an ordinary craft object, the clay jug (2001b, 166*ff*). Building on *Being and Time*'s discussion of objecthood, Heidegger argues that the essential character of the jug does not consist in its properties, nor does it consist of something such as a dictionary definition: 'a jug is a vessel of a certain size for the containment of a liquid' (169). He claims to do this would be to go astray already, for descriptions such as these do not make reference to the *lifeworld* from which the jug is a part.[17] The thing—in this case the jug—is a reflection of its world. And its world is, in turn, a reflection of the thing.

This is why Heidegger is fond of saying, "[t]hings bear world. World grants things" (1986, 149). In the former case, he claims that it does not make sense to think of a thing without the fabric of meaning (the world) from which it is part. A rich set of historical determinants coalesces to make a thing "make sense" within its world. In regard to the latter, it is very much the case that world does not exist without things. For things make up world (although, like Being, the world is not reducible to things in a materialist sense or otherwise). The fourfold, however, is a new conception of world in which not all things are part. Specifically, an object of enframing circumscribed as resources, inputs and outputs, can never be homed within the fourfold: The plastic thing, as I said, is properly homeless.

Things bear world. One must be able to see its fourfold world within a craft thing's essential character. It is much better to ask, then, 'How does the jug bear the world?' in the strict sense of, 'How does the jug phenomenologically *light up* the world?'. The jug's character does not lie in its holding of liquid (Heidegger 2001b, 169). A jug holds in order to pour, to give out (169). Indeed, the jug exists to give the gift of the pour: "[E]ven the empty jug retains its nature by virtue of the poured gift, even though the jug does not admit of a giving out (170). Why is it a gift and not a mere dispensation, say, as one pours a solution from one beaker to another?

Characteristically, Heidegger turns to language for the connection: The sacramental 'gush' of wine is derived from the probable PIE root **gheu-*, which is found in words such as the "Greek *khein* …, to pour a libation" and the Old English *guttas*, which refers to "guts, entrails" offered in sacrifice (see Tickner 2020, 72; Harper 2018a; Heidegger 2001b, 170). David Tickner further connects **gheu*- with 'god', through the Old English "*guthan* … [,] the spirit immanent in a burial mound" (72). The gush of wine, poured out in front of the barrow or tumulus, is a commemoration of the ancestor's spirit. The ceremonial gush and the sacred gift are therefore closely connected.

I briefly highlight how each of the fourfold—(a) mortals, (b) divinities, (c) earth and sky—come to be at work together in the jug. A fuller account in relation to craft processes is presented in the following chapter.

(a) [*Mortals*] The mere act of giving itself is sufficient enough to indicate that the outpouring is a gift. To paraphrase Jacques Derrida, the ideal gift is one that is given freely with the intention to make the recipient better off—while expecting nothing in return. The jug is meant to give. It authentically gives: "The gift of the pouring out is a drink for mortals. It quenches their thirst. It refreshes their leisure. It enlivens their conviviality" (Heidegger 2001b, 170). The jug awaits their return from the field. The gift of the water is rejuvenating, just what is needed to revive and refreshen the spirit. The outpouring expects nothing in return. It exists to rejuvenate. The essential nature of the jug is, therefore, the outpouring of the gift.

Mortals are those capable of giving thanks for the gift that is given. At the same time, mortals in no way made it so that they are the unique animal capable of giving a gift or receiving a gift. The jug is a gift for mortals, after a weary day's work, letting them rest. At other times, the jug gives the gift of wine, the gift of merriment and conversation and being together with friends. Properly speaking, then, the jug that my partner bought from a local artisan that sits on a shelf for periodic dusting—is not a jug. Rather, its nature is concealed. It is not a use-object but an object of decoration.

(b) [*Divinities*] When given in "consecration … the outpouring as libation is [the most] authentic gift" (Heidegger 2001b, 170). What Heidegger means is that the libation poured out to the gods is the most essential form of gift giving that the jug can perform (170). The gods are those who mortals give thanks to when things that they have no control over go their way. They give a gift to the gods to say 'thank you' for that good fortune, thanks for things having gone well for mortals: a good harvest, a good rain, a good death, a good birth. In the libation, the gush exists purely as a gift, a gift to the gods in thanks. Further, the worthiness of giving thanks belongs to the essential nature of the gods themselves, for mortals are not the arbiters of their fortune.

(c) [*Earth, Sky*] Within the earth and sky lie the entire fourfold. I treat them together, as Heidegger does in "The Thing", saying that

> [e]arth and sky dwell in the gift of the outpouring. In the gift of the outpouring earth and sky, divinities and mortals dwell *together all at once*. These four, at one because of what they themselves are, belong together (2001b, 171).

Water, hidden away in its recesses, rises up from the earth. It flows over earth's surface and it pours down from the heavens. Water itself is a gift, a gift for mortals and plants and animals. The grape vine's roots rest in the earth. The vine stretches towards the heavens, always climbing, climbing. The grapes now grow to bursting, receiving their own gift of rain from the sky and nourishment from the rich humus of the earth. The gods watch over, providing a good rain, a good amount of sun, and a good harvest. All this ensures that mortals have something to drink, something with which to enjoy themselves. Each element of the fourfold recalls the others. Each is contained in the gift of drink that the jug offers: "In the gift of the outpouring dwells the simple singlefoldness of the four" (171).

The clay the jug is made from is granted by earth. Mortals do not make it such that clay is suitable for crafting. That clay may become jug is granted from within the nature of clay itself. In a precise Aristotelean sense, the craftsman only brings-forth what they clay already has in itself to give. When worked on by human hands, the clay comes into being for the first time, as something not only capable of being molded—but as something useful for the making of vessels so that mortals may have the gift drink. A thing recedes into the fourfold when it finds a home, a dwelling place, in its surroundings. The clay jug is *of* a certain area and locality. That is, a clay jug is *appropriate* to a place with clay soil. And it *propriates*, too; it brings the earth into itself, recalling the earth when one touches its smooth, yet course, surface.

A thing that sets itself back into the fourfold will always be appropriate to that place. Other places will have their own appropriate things: Some Coast Salish peoples made watertight jugs from the beaten bark of cedar trees. Likewise, a wine's *terroir* is the flavor of its surroundings: the soils in which the grapes were nourished, the skies under which they grew, and the winds that carried over them (ocean, mountain, or meadow). Craft artefacts, too, have such a terroir—not just the terroir of their surroundings, but the character of the unique fourfold (the unique divinities, unique people, unique earth, and unique sky) that surrounds them and cares for them.

One's experience—and therefore, one's phenomenological description of the fourfold as it appears to oneself, must always be of a situated or "regional" character. Heidegger rejects forms of regional ontology in *Being and Time* and his earlier lectures for not being of the character of "fundamental ontology" … i.e., as asking after the being of entities instead of Being as such (1962, 31-4). However, when in the right disclosive mood, one's ownmost experience of Being—disclosed as a fourfold world—will always be regional in a modified sense, possessing the character of a rooted local ontology, an ontology possessing *terroir*. That said, while the fourfold presences itself differently according to region, the fourfold *qua* fourfold, comes to bear over all authentic world-revealing, since all regions of earth are equally subject to its sway.[18] To clarify with an example, I contrast the winter skies of the Canadian prairies, which most days appear almost limitless, with the winter skies of my home in the Pacific Northwest, grey, quilted, hemmed in everywhere by mountains and fir. While sky presents itself differently according to region, each are disclosures of sky.

A pertinent question arises. Can a bottle of Coca-Cola be found within an intensely regional fourfold ontology? No. Coca-Cola is only possible as the biproduct of enframing. What is a bottle of Coca-Cola as an object? It is the industrial processing of corn into high-fructose corn syrup. It is the cracking of petroleum into its constituent parts to create a feedstock and then subsequent reassembly into a plastic bottle. It is the endless ubiquitousness of the "product" that is the same everywhere and shuttled around the world over through distribution networks (*cf*., Heidegger 1971, 163). A bottle of Coca-Cola cannot properly have a home, since its parts are everywhere the same. Engineered materials are produced via a regularized process that makes them unidentifiable as to lifeworld, yet consistent with regard to properties. PET plastic is PET plastic. High-fructose corn syrup, the same. All of this belongs to enframing.

The jug, in contrast, is intensely regional, with each area having local materials that lend themselves to jug making, now cedar bark from the forest, now clay from the bank. In the end, each element of the fourfold—earth, sky, divinities, mortals—resides within the essence of the jug. Beyond this, the essential nature of the fourfold world itself is given along with the nature of the jug. When Heidegger tells us that "[t]hings bear world", but also, "[w]orld grants things", one should now begin to know what he means (1986, 199).

Conclusion

This chapter began as an exploration of the differences between modern and antecedent technologies considered by themselves. However, it soon became evident that craft tools and artefacts cannot be considered apart from the world in which they are part. This is where other positions such as that of Pye and Diamond perhaps fall short. Just as it is difficult to discover the essence of modern technology by looking solely at modern technological artefacts, it is difficult to discover the essence of craft in an isolated way—apart from its lifeworld. The authentic jug not only dispenses liquid as a gift, but it is part of a fourfold world. There is an abyss of meaning between it and the handmade ornament that sits atop my mantle—merely shaped like a jug. A properly situated ontology, what I have reclaimed from Heidegger's customary use and called a "regional" ontology, is one that unites things with their lifeworld, which is disclosed as fourfold in nature. The lesson Heidegger takes from Aristotle's four *aitia* is precisely this: that ontologies always ought to be of a situated character. The ontology of Dick's carving is inseparable from his lifeworld.

Humans today are homeless in a way that past peoples were not. The Greek lifeworld was implicit in their philosophy. That is, their lifeworld was already alive with the fourfold. Like the example of big fish and little fish in Chapter 3, the fourfold was the "water" in which they swam. Contemporary people do not have this luxury. The guardian is tasked with a restoration of a memory of a world that is once again dancing with the fourfold.

Craft is the practical stance of guardianship over the world, the content of which is fourfold in nature. In the next chapter, I look toward the ways in which elements of craft lifeways (the tools they use, their circumspective mood, the things they bring-forth), taken in their fullness, all contribute to a disclosure of the world as fourfold. What will be found is that to disclose the world as fourfold is to already have placed it under safeguarding.

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[1] The modern handsaw found in the home centre, too, uses such impossible to sharpen induction-hardened teeth. With its plastic handle, it must be thrown out when its teeth have dulled. The blade is fashioned to be universal so that it can take on any role at the jobsite, from the cutting of PVC pipe, to drywall, to dimensional lumber. It excels at none of these and makes butcher-jobs of them all, yet its hardened teeth admit of rough work in all of these materials. It is already a world away from the traditional handsaw. Indeed, in contrast, the traditional panel saw is ill-suited to cutting aforementioned "universal" materials: It skates across PVC and dulls quickly against the gypsum of drywall. The traditional handsaw takes planning and listening to the wood in order for it to cooperate. Moreover, historically each region of the world had saws uniquely their own, which were developed according to the different demands of the local woods and techniques. The modern handsaw is all wood butchery, meant to hack wood apart for quick cuts on a modern production jobsite. Even modern handsaws are seldom seen today on jobsites, with the use of modern power tools such as the circular saw ("Skilsaw") and reciprocating saw ("Sawzall": … a telling name) overtaking them almost entirely.

[2] In fact, in the modern woodshop, one often forgets the nature of the wood itself, even natural woods: Wood comes "ready made". If not, it is brought to heel quickly through machinery processes.

[3] This is further co-extensive with the Heideggerian point that modern technology demands the "securing" and "regulating" of the world (1993, 322).

[4] Simple, natural materials, which are riven or squared up with an axe are never square. Especially in timber framing, the process of making joints takes into account the "inner-trueness" inside the irregular shape of the

wood's surface. By imagining a smaller, square timber inside every irregularly shaped timber, one could build a square structure out of rough-hewn timbers. In traditional timber frames, too, members such as "knee braces" will be cut from crooked timbers whose inherent shape and grain direction naturally support the load being placed upon them. Modern timber framing, in contrast, relies on laser-cut CNC (computer numerically controlled) machined timbers (usually composite materials made out of structurally laminated wood), which can then be manipulated and have their joints cut by CNC routers. The entire structure, in this way, is pre-conceived inside a computer automated design (CAD) program and the results, the cut joints, are pre-determined. The true timber framer knows that she must adapt to the materials at hand, not by demanding that they present themselves as square and true but being responsive to the nature of the wood before her.

[5] What Pye says here should not be confused to be at odds with historical aesthetic trends that prized regularity and uniformity in the finished creation.

[6] Indeed, this is still the case even if the made thing is to be viewed from a distance—such that those qualities are seldom noticed explicitly, as in the vaulted ceiling. According to Pye, a perfectly polished stone element will never reflect the light in the same way as the one finished by hand, miniscule surface edges exposing the grain of the stone to light now this way, now that. Shinier elements, such as quartz, that have been deposited in limestone over millennia glisten like gemstones.

[7] Defects in drywall as opposed to plaster, give way to an unpleasant "equivocality", according to Pye (1968, 45*ff*). That which the eye expects to be uniform exhibits an aberration, which is unsettling in a way that a plaster wall is not, given to the consistent "unevenness" of its surface finish (56).

[8] And the same goes for conventional spying.

[9] Being, however, that I have argued that there is reduced human agency at work in the face of totalizing technology, perhaps it is better to call this age the 'Technocene'.

[10] Today, even if a thing puts up a fight, humans tend to think the thing's coming up against them is, in principle, surmountable: e.g., Humans, through technology, can now entirely mute a mountain's gargantuan presence and transmute it into something surmountable. That is, the mountain's standing against one can be brought low in the name of something such as coal reserves. Indeed, the mountain no long *stands against* humans as something sublime: a phenomenon so unique that Burke, Kant, Schopenhauer, and Hegel all spent considerable time with sublimity as a muse. Technology has made it so that many other formerly untouchable or unfathomable things can be brought under the control of machination: Science-fiction writers even imagine future scenarios where the Sun itself no longer comes up against humanity. Instead, it is something to be dealt with—e.g., as the troublemaker behind global warming its effects may be "mitigated" through the building of a "sunshade" in space. Furthermore, things such as the weather, once the provenance of gods, coming to humans as a blessing or a curse, are now increasingly able to be controlled through technological processes such "cloud seeding".

[11] The speaking of the world is always, of course, silence. Yet in listening to the silent requests of the natural world, one can hear its speaking. Modern technology does not listen to these silent requests, as the speaking of the world is always subsumed, ignored, or overruled in the name of enframing practices, which is characterized as the "need" to treat the world as resource.

[12] Silence is somewhat of a theme in enframative agriculture. In a disturbingly literal form of silence, modern cornfields are now eerily devoid of sound—no birds and no insects disturb the rustling of corn on the wind. Even where the planet's protests are particularly loud today, as is the case with climate chaos, technological futurists suppose humans can "out-engineer" the planet through carbon capture, climate engineering, global dimming, etc.

[13] This is distinct from the traditional definition of a capacitor, which accumulates energy in a field. Batteries, though different in that they store energy through their chemistries, must also count as capacitors for Rojcewicz.

[14] The Piegan people, who hail from the Rocky Mountains and the Great Plains, often designated someone to be a fire carrier when ranging past camp (Smith 2017). She was charged with maintaining the ember on cold winter days inside an animal horn or other suitable vessel (2017). That fire is so precious that it must be constantly attended to further preserves its giftlike nature.

[15] Hocutt's essay is a development of discoveries made by Vlastos (1969) related to Plato's work.

[16] It is unfruitful to attempt to map Aristotle's four causes onto Heidegger's fourfold.

[17] Recall Heidegger's earlier hammer example in *Being and Time*. The primordial metaphysical nature of the hammer is that it recedes into the background of "getting things done" in one's own world: e.g., in the process of building a cabinet. In utilizing the hammer, to put it crudely, one lights up and separates out the things in the world into things that can possibly be hammered. But the hammer itself can only ever recede into the background of a lifeworld in which it is thoroughly at home. A hammer sticks out like a sore thumb in areas where it is unaccustomed. It would perhaps be odd to find a framing hammer in a fine china cabinet. The idea of the fourfold builds upon a question that occupied Heidegger from the beginning of his career, which is the pursuit of the proper ontological description of a thing. With the intimation of the fourfold, Heidegger explains how ontologies can only properly be situated. One can only relate a thing to the lifeworld from which it is part. A thing divorced from a lifeworld becomes a collection of mere properties.

[18] As Inwood traces, Heidegger's use of the term 'ontology' falls out of favour in his later career, to be supplanted by the "history of being" (1999, 149). The fourfold, as world-disclosure, is a moment in the history of being that perhaps existed in the past and could perhaps exist (again) in the future. The world, largely, no longer presents itself as of a fourfold character.

Chapter 6: Craft and the Fourfold

Introduction

One way to interpret the theme that occupied Heidegger all his life is the combatting of the philosophically inherited Cartesian worldview. Theories associated with this view see mind and world, mind and body, and object and world as able to be split from each other and studied independently. Objects are seen as bearing abstract collections of properties; humans are seen this way, too. These views in turn make it all the more seamless to study the world, objects, and humans mechanistically. Heidegger derisively categorizes these tenets under the catchall, “traditional metaphysics”. Enframing thinking takes advantage of these conceptual frameworks. For example, separating things abstractly from their world renders it easier to view them as discrete elements, dissect them, exploit them, manipulate them, transport them the world over, and use them up.

The Cartesian worldview is in lockstep with an impoverished rendering of the world and humans through the abstract concepts of space, matter, time, and agency. The earth, once a *home* for humans, becomes abstract space and manipulable matter. The sky, once the rhythm and tempo one lived one’s life by, gets ignored in favour of abstract time, where the world “carries on” no matter the time of day, weather, or seasons. The divinities, once acknowledged as the source of all things granted, including human fate, are lost entirely. Due to the dual positions of technological neutrality and optimism, humans are now seen as able to manipulate fate via machination—with nothing being in-principle insurmountable given enough technological sophistication. In other words, technology allows for the freedom of human agency, which poses increasing dominion over the world. The nature of humans themselves, as those tasked with responsibility over world disclosure, has now been reduced to an unthinking and dull trudging along, “a stultified compulsion to push on blindly with technology” (Heidegger 1993, 330).[1]

The fourfold is an attempt on the one hand to render all these elements as inseparable—indeed, *unthinkable*—without one another. Mind and world, mind and body, object and world, which generate abstract space, matter, time, and agency, are all rejected and cast as united elements of a fourfold world. They are 'united', because the elements are mutually dependent upon one another. To be human is to live "on the earth, under the sky, before divinities", in one's essential nature as mortal (Heidegger 2008j, 352).

In this chapter, I creatively appropriate the fourfold in the direction of craft. For reasons I have intimated, there is a lacuna in Heidegger's thought in that he perhaps thinks too little about the concrete ways world disclosure may be won back from enframing thinking. As he indicates in his final published interview, he intends for thinking to lead to action. But the fact that so many, including the *Der Spiegel* interviewer, miss his intentions, makes it seem that there is a deficiency here. I agree with Heidegger in that one cannot express the precise steps that might lead to a change in the human relationship with technology. Where I supplement his thought is to move beyond thinking—especially the thinking of things—toward a response that seeks to actively change the disclosure of the world. The path of craft actively safeguards fourfold world disclosure. Here, I move beyond Heidegger's interrogation of the ontological status of things. I interrogate how the entire craft-process brings-forth the world in its fourfold character. This includes not only the making of things, but the tools it uses, the circumspection of the craft mood itself, and the rituals and lifeways it establishes.

The earth shows itself as a neighborhood and landscape, a mortal dwelling place. Natural materials show themselves in their granted nature, springing forth of their own accord. The sky, through the seasons and the weather, shows itself as a locus of timeliness and appropriateness. The divinities reveal themselves as the arbiters of fate, worthy of thanking. Humans, who are mortal, reveal themselves as those whose responsibility is the continued protection of the disclosure of the world as worthy of safeguarding. It is mortals' burden, as the site of world disclosure, to safeguard the world and themselves against the advances of enframing.

Earth

The life of craft's disclosive mood shelters the world and serves as a bulwark against the encroachment of enframing upon that which is perhaps most dear to humans, their dwelling places. Enframing thinking more easily captures and subsumes the earth under abstract concepts such as "space" and "matter". Craft recognizes that it is upon the earth that people dwell. It first reappropriates the earth as a landscape and a neighborhood. It does this through the safeguarding of natural materials that surround the craftsperson in her home. Becoming intimately familiar to her, they become so much more than brute matter to able to be shaped according to the needs of technological manipulation. Instead, they show themselves to the craft lifeway according to their granted nature. That is, they tell the one who would listen how they should be worked. This is the beginning of a process constituting a virtuous circle. The more the craftsperson cares for the bringing-forth of natural materials, the more her lived environment becomes a well-tended place, the more her site of dwelling in turn comes to look after her.

I now turn to the differing ways the life of craft and enframing thinking disclose earth as landscape versus space. In "Building Dwelling Thinking", Heidegger discusses how earth speaks through the everyday craft-made structures of the countryside (2008j). What distinguishes my approach from Heidegger's is that he primarily asks after the disclosive nature of *completed* structures. I concern myself with the entire craft process that culminates in the structure's coming to be. In the essay, Heidegger compares the "old stone bridge", which crosses the waters near the Black Forest village of Todtnauberg, to the "highway [overpass] bridge" (2008j, 354).[2] The highway overpass, as a product of regularized engineering enabled by the plasticity of concrete, is everywhere the same it is placed. Its form does not integrate itself in the landscape and as such, does not recognize the uniqueness of earth. It does not ask of earth what it wants to become, but rather demands that earth conform to its demands. As is especially apparent in flat prairie regions, the highway overpass erupts out of the ground. One can see it for miles. The earth surrounding it is moved by bulldozers and excavators into whatever shape is called for by the engineer's plans. Landscapes have specific features:

hillocks, ponds, different flora and fauna. Instead, specific features of the "site" are seen as only obstacles for implementing the structure: If a pond gets in the way, it might be filled—perhaps with standardized "structural fill" from a far distance.

The overpass is part of a "highway network" (Heidegger 2008j, 354), in which even mountains are seen as obstacles to be overcome, or indeed, bored and blasted through. The highway system is subject to the laws of vast distances—the logic of "long distance traffic"—which is always "calculated for maximum yield" (354). That is, the aim of the highway is to efficiently shuttle goods and people. They are, too, subject to the logic of enframing: both seen as calculable units such that so many units can be transferred per hour, per day, or per month, from geographic point to geographic point. Further, the "in between" is merely an obstacle in which these units get "there". The highway network transforms a local landscape into a place of no account.

This approach reflects a desire to view the surface of the earth through the lens of pure abstraction—as a kind of Euclidean space. Desirable features, such as the overpass, may be dropped on a plane with no regard to specific characteristics of the area, merely according to the dictates of a preconceived technological "need": e.g., the movement of units. Units need to move from point A to point B as efficiently as possible. A straight line is always preferable. The earth presents itself as pure matter to such a view.

In contrast, the old stone bridge does not manipulate the countryside around it, bending it to the efficient orderliness of the movement of stocks across vast distances. The country bridge, Heidegger says, does two things (2008j, 353-4). First, it brings the earth forward as a place of dwelling for humans. Second, it allows the earth to come forward as landscape and neighborhood for the first time:

> [The bridge] does not just connect banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge expressly causes them to lie across from each other. One side is set off against the other by the bridge. Nor do the banks stretch along the stream as indifferent border strips of the dry land. With the banks, the bridge brings to the stream the one and the other expanse of the landscape lying behind them. It brings stream and bank and land into each other's neighborhood. The bridge *gathers* the earth as landscape around the stream. Thus, it guides and attends the stream through the meadows (354).

Without the bridge, the steam is a geographic feature of planet Earth, but it is not part of the earth in which mortals dwell. Geographic features are not homely, but objects of abstract study—like spots on the surface of Mars. With the bridge, mortals find “stay” (351). What is beyond the stream is not homely without the bridge, for the simple matter that the waters must be forded: “The old stone bridge’s humble brook crossing gives to the harvest wagon its passage from the fields into the village and carries the lumber cart from the field path to the road” (354). The meadow, the forest, the homestead, and the mountain lie to the one side of the bridge, the village to the other. In joining them together, the bridge creates a neighborhood for them to dwell together, as part of a landscape which mortals call a home.

The bridge makes the fields and meadows accessible to those from the village, and vice-versa. On a sunny day, children might cross the bridge to play near the cool liminal space between the forest and the meadow. The bridge connects the farmer’s field to the grain mill, located on the opposite bank. Fish may be caught from atop its gentle arc. When Heidegger says that the bridge ‘causes’ them to lie across from one another, he surely means this in an Aristotelean sense. The emergence of these features is indebted to the existence of the bridge. This is to say that the bridge brings the fields, the meadows, the stream, and the village together and is co-responsible for bringing this relationship into existence. This relationship makes a region into a landscape, which is a place of mortal dwelling on the earth.

What is underexamined in Heidegger’s passages here (and carries on as a theme in his work), is the nature of the process that *brings-forth* the creation of the thing in the first place. This process is the work of craft. In what follows, I look at a craft structure built from the same material at the stone bridge, the drystone wall. I pay special attention both to the natural material it is constructed from, stone, and the unique way that the craftwork that goes into its construction brings-forth the earth though listening to stone’s silent speaking. The drystone wall, as with the old stone bridge, is built with the stone one finds in the countryside. But not any old stone, stone from the immediate area. Stone is, at once, not modern concrete—a building material that attempts to imitate pure matter. It is not everywhere the same, able to be manipulated according to formulae, trucked vast distances, and poured plastically into forms. Since stone is heavy and cumbersome, its journey from unearthing to building site should be short. It is for this reason that stonecrafts utilize the stones native to a region.

Beyond just being heavy, a region's stone makes requests upon the craft-builder that she must listen to in order to convince the stone to *work with* her.[3] "[A]rguably the best stone to work with", Langlands says, is "Carboniferous Limestone", due to its natural endowments: "It splits well, and in both directions; hence agreeable rectilinear blocks can be achieved with little effort" (2017, 120). These stones make for a well-ordered wall and are as easy as stacking bricks. In contrast, granite is as likely to break your hands before it yields to the tool (120).

An observation of Julian Young's is pertinent when thinking of how to work with stone: "The *Sakutei-ki*, the classic, eleventh-century manual of Japanese gardening tells us that when constructing a garden we are to 'listen to the request made by the land' (2001, 107). This is advice that will be followed by the authentic gardener" (107). The authentic gardener pays attention to what her soils may need to thrive, or what the landscape calls for (a pond is Young's example) [107]. The walling craft, similarly, listens to the requests made by the stone and the landscape. For example, a wall should not *exclude* the landscape and the wildlife beyond one's home. It is therefore customary to include "rabbit smoots" in its length, little areas that provide shelter and passage for ground-dwelling creatures. In a similar vein, in building the wall, one does not exclude granite from the building considerations by demanding that it yield to power tools. Instead, one enters a dialog with granite by listening to what it will lend itself to becoming. The fact that granite will yield to no craftwork tool tells the craftsperson a story about how granite should be used. Granite, as a material, is unyielding. As such, granite drystone walls are necessarily more freeform and follow the patterns of the stones as the waller found them. Indeed, when undergirding a foundation, one *scribes* the post/lintels to the granite, for it is within the nature of wood to yield to chisel.[4]

In contrast, the path of domination is always open in modern technological society. Granite will yield to gas- or electric- powered tools with blades made of tungsten carbide (a synthetic sintered alloy that amalgamates together under great heat and pressure). Alternatively, today, granite is pulverized into a fine dust, and this is combined together with resins/cements to yield regularized building blocks. Just as the overpass site can be dug up and filled in with formless matter, so too can granite itself become part of a slurry, yielding any shape the logic of enframing desires. This is to transform the nature of granite—with its own unique characteristics, including hailing from a particular region—into something abstract that can be standardized and calculated.

To compare, craftwork lets earth rise up through natural materials (*cf*., Heidegger 2001a, 180). For earth to rise up in natural materials is for it to reveal itself in a way that does not do violence but lets the material instruct one in its use. Taken in this way, granite is so much more, as Heidegger says, than a "mass of matter deposited somewhere" (168). To build a sturdy drystone wall is to let granite rest in its nature and *safeguard* the disclosure of granite as granite. That is, that the wall stands at all is a testament to the fact that the craftsperson paid attention to the unique aspects of the stones before her. Each stone has its place. Larger, flatter stones are placed at the bottom to form a raft against the soggy English ground. Smaller stones fill in the gaps. In this way, the stones themselves dictate the shape of the wall. Their freeform shape owes to the unyielding nature of granite. All of these things let granite be itself in the wall and serve as a concrete memory—a tribute—of granite's character.

Likewise, the life of craft shows that earth itself is so much more than "the merely astronomical idea of a planet" (*cf.*, Heidegger 2001a, 168.). *Earth*, as earth, isn't a region in the Solar System which the species *homo sapiens* inhabit. Nor is it a body floating through space with a crust composed of 5% iron. When viewed as a planet with an exploitable crust and other topographical features that are capable of extraction, the earth becomes no different than asteroids or any other celestial body. But earth is home, our home. But neither is the entire globe our home, but rather the corner of it upon which we live. To make earth into a planet is already to make it distant. As mentioned, Heidegger speaks of the "distanceless" of the modern technological world, in which everything is simultaneously close and yet nothing is near (*cf*., 2008j, 357). Things are immediately available through the distanceless global supply chain, which trawls the earth for resources. Yet doing so robs humans of a home—of the capacity to gently beckon things in one's own world to come forth while allowing them their mystery. This was the nearness that once permeated the human world. Today, even what is in "one's own backyard", what one is intimately familiar with, such as the forest that surrounds one's home, can be made readily available to the logic of the supply chain. What the supply chain does is make all regions distanceless in this way.

The life of craft transforms a corner of the earth into a place humans may shelter themselves and ultimately dwell. In sheltering themselves appropriately (and one way is through using natural materials appropriately), they simultaneously let features of the earth reveal themselves as they really are for the first time. In working with natural materials in a craftlike way, the waller begins to recognize the earth as a site that makes possible her dwelling. When one views the provisions of earth a gift, one recognizes that the landscape offers up materials which may be worked, rendering the place one chooses to lay down roots truly a site that is granted for living and living well.

Just as one is careful to build one's home near a water source, one is also careful to build near a source of building materials, such as a stony outcrop. This way, the gifts of earth come all the more readily. What is more, by using the granite from the rocky outcrop near her home, the craftsperson brings the landscape, the foot of the mountain, the hillside, or the stony outcrop into her neighborhood. A landscape that lends itself to birthing granite stones, which burble up to the surface in seams over ages, lends itself to building granite drystone walls and other structures. A granite wall, low slung, sturdy, *fit* for purpose, fits into the landscape.[5] The granite, which has been part of the landscape for countless millennia will now rest, if maintained, for countless more millennia. The sturdiness and solidness of the earth is found within the granite, heavy and unmoving. The granite was all of these things while nestled in its outcrop, yet they remained "dormant". In *homing* the granite within the wall, she provides a place for the solidness of granite to show itself. When the craftsperson uses granite in this way, she incorporates the essence of the things the earth provides her into her home. She wraps herself, like a cloak, in the earth around her. In doing so, she creates not only a home for herself, but for the earth to show itself.[6]

It is the regional differences of one's corner of the earth that render a place home. "Limestone" is native to "North Wales" and granite is native to the "south-west of England" (Langlands 2017, 120). The homeliness of these regions is partly due to the distinctive local character of their building styles. This is owing to the local materials available to them. What the *terroir* of a cheese or a wine speaks of is the story of a region, a story so rich one can taste it. The building-style of a region similarly forms a material *terroir*, imprinted all over the region.

Beyond this, Langlands argues that for older generations it would have been absurd to build a granite wall in North Wales (2017, 120). Even building a small-scale farm fence is a large undertaking in terms of materials and peoplepower. Using granite in the North would involve, at minimum, the quarrying of it in another region and transporting it *en masse* by cart or rail—adding even more toil to an already difficult task. This is not to mention that this process would require a re-adaptation of local skills, already known to local farmers and wallers for generations.

That is, the *tools* and *skills* native to a particular region disclose the materials peculiar to it as things able to be worked on: In this case, limestone or granite. The tools and skills do not easily translate across regions, making places that are not home, unhomely, and making materials that are not one's own, unwieldy. Limestone tools will dull and break against granite. But this is not a defect. The wallers Langlands speaks of are *proud* of the difficulty of working with and unyielding nature of their granite, for in listening to its stubborn nature, wallers can see the way that granite wants to be worked. Indeed, despite the admitted ease of working with limestone, "you won't ever hear a waller bemoan [her] local stone. It would be like denying your own birthright" (Langlands 2017, 120). These regional differences are ultimately what render a place home. That is, one is familiar with the lifeways, the narratives, and the natural world that surround one in one's place of dwelling. And it is this particularity that transforms the world from a place in which one merely inhabits to a place in which one has a home, a place that one can come to love, and ultimately, a place worthy of protecting: The waller will never bemoan her local stone but fiercely protect it.

In working appropriately with natural materials, craft lets one's corner of the earth shine forth as both landscape and a site of dwelling. Living in one's world in such a way serves as a challenge to enframative revealing, for it is unclear how someone who has such a relationship with her landscape could ever turn against it and do violence to it. For earth to become a landscape is to bring the countryside—the streams, the meadows, the rocky outcroppings—as Heidegger says, into one's 'neighborhood'. Without mortal dwelling, these things exist as abstract geographical features of planet Earth. Natural materials, such as granite, exist as mere objects buried in the earth, indifferent to their extraction and manipulation. Enframing thinking all the more easily plays together with the surface of the earth seen as matter, as resources, and the globe itself seen as a blank space, a featureless plane in which obstacles must be leveled down to conform to technological plans.

Mortal dwelling holds an intimate relationship toward one's corner of the world. It is a relationship that *responds* to the requests of the land rather than makes demands upon it. And it is the anchor through which an expanse of land reveals itself as a site of dwelling and materials reveal themselves as gifts that provide welcome. That is, it serves as a bulwark against enframing thinking, whose corrosive logic seeps over the earth. Natural materials are instructive. They, through their silent speaking, tell mortals how they should be worked. At the same time, in working with them in craftlike ways, they provide mortals a home.[7] When mortals home themselves in natural materials (building their bridges, homes, and walls from granite, for example), they wrap themselves in their landscape, bringing the entire countryside into communion with their dwelling. Doing so changes the ontological cast of the entire world. The geographic region becomes a landscape. Natural materials become gifts. And the world becomes a place for dwelling.

Sky

If one is lucky, some day one will pass through a "sleepy village" and note how people quietly withdraw to their homes well before dusk—or chance upon a region that runs on "island time" or "village time". Similarly, one might find a small village entirely closed down—yet curiously, opened up—to make way for the celebration of a festival. Far from being indications that such people are lazy or that they have forgotten that "things need to be done", it is a signal that they still possess some semblance of "time" as timeliness and appropriateness, as it once existed.

Such understandings of time are already a world away from abstract concepts of time that would see it through the lens of relativity or metaphysically, as a line or arrow.[8] Viewing time abstractly allows humans to understand time as inherently featureless, which makes it all the more amenable to enframing thinking. That the shuttling of materials around the globe runs 24 hours a day, calm or storm, rain or shine, day or night, sacred time of the year or no, is an indication of a featureless understanding of time. Through this logic, the sky itself becomes featureless, an annoyance rather than something to govern one's life by. People are expected to be "on call", with no care paid to night or times of rest. No matter the weather, the storm's buffeting, "work" must carry on. In contrast, much of craft is governed by sky's requests.

Sky's requests come to humans in myriad ways, the clearest of which show themselves through the "clemency and inclemency of the weather" and the "year's seasons and their changes" (Heidegger 2008j, 351). The craftsperson lives her life by the seasons, the timeliness of sky made manifest. The life of craft opens an ontological space for *time*, manifested as sky, to play a central role in human dealings. This serves as a challenge to enframative featureless time. To a craft understanding, the sky, through its *gift* of rain and the times of year, is suffused with timeliness and appropriateness. That is, *there is a time for things*. This understanding of sky is the foundation for the wisdom contained in *Ecclesiastes 3*:

> 1 There is a time for everything,
> and a season for every activity under the heavens:
>
> 2 a time to be born and a time to die,
> a time to plant and a time to uproot,
> 3 a time to kill and a time to heal,
> a time to tear down and a time to build,
> 4 a time to weep and a time to laugh,
> a time to mourn and a time to dance,
> 5 a time to scatter stones and a time to gather them,
> a time to embrace and a time to refrain from embracing,
> 6 a time to search and a time to give up,
> a time to keep and a time to throw away,
> 7 a time to tear and a time to mend,
> a time to be silent and a time to speak,
> 8 a time to love and a time to hate,
> a time for war and a time for peace (*Tanakh/Old Testament*, 2011).

The process of making, bringing-forth, of all traditional craftwork properly begins with the seasons, which are suffused with timeliness. For example, the entire village of Vallabrègues, France was known to come out to gather reeds for basketmaking during the ideal time near the end of summer. Likewise, Swedish timber framers have known for millennia to harvest trees in the dead of winter during the time the moon is closest to Earth, because the tree will be drawn up fullest with its rot-resistant sap. This makes for a long-standing home. Within their essence, both baskets and homes are sites of gathering. Yet the surest gathering place is the site of the meal. Alex Langlands supports this: "I often like to say that all traditional craft ways lead to the farmhouse table" (2017, 339). Indeed, the basket's destination is the table, while the timber-framed house wraps it in shelter.

Within the spread of food on the table lies the timeliness of the seasons: fresh fruits and vegetables in mid-to-late summer; dark leafy greens, cabbage, squash, potatoes, pickles, and preserves in the winter. And always bread. The seasons govern the table: The reason the first taste of berries in the early summer is divine is that they are experienced as a *gift* of the new season. Berries unfold and are revealed only when the sky is ready, after the sun warms the earth and the winter weather recedes. The sky is the ultimate arbiter of such revealing and concealing. To provide for the table's bounty, the life of craft sets its pace by the seasons.[9] There is work to do in the early spring: digging, sewing, and planting. There is work to do in the summer: tending, harvesting, preserving, and pickling. There is work to do in the fall: collecting squash, planting winter crops, mulching over beds. And there is work to do in the winter: those projects that one does not have time for during the busy summertime, such as building and fixing. Probably the most important work is rest, the work that preserves oneself through giving time to contemplate and plan for the new season. In granting the seasons, the sky actually *grants* the time to do these different things, which in the end, is the time to make the world one's home.

(I make a brief aside: The examples I use throughout this chapter have and will be taken from regions I am familiar with. While the fourfold applies to all regions of earth, the way it appears to humans is a regional affair. There is no way to get at the fourfold without first experiencing it through a lifeworld. The sky and seasons I describe here, therefore, are relative to the northern climes that I call home, specifically regions of Western Canada. The occurrence of seasons during the year and even the number and character of seasons will differ according to where one lives. Those who live near the equator will have a decidedly different regional ontology, for example. Some things, such as the diurnal cycle, “the drifting clouds[,] and blue depth of the ether”, will remain the same (Heidegger, 2001b, 176). However, according to the character of sky in a given region, the food on one’s plate will assuredly be different. So too, the traditions, paces, and tempos that govern one’s lifeworld will be of a distinct character. None of this changes the fact that people from vastly different regions still must ask for sky’s blessings and govern their life according to sky’s whims. While sky presents itself differently according to region, mortals live under its expanse.)

To resume, the bringing-forth of food is one-way mortals make a home for themselves. But importantly, in making a home for themselves through responsiveness to sky, they shelter a concept of time away from enframing thinking. Food production in the craft-garden or orchard begins with digging. Langlands recognizes digging as the original human craft (2017, 339). And the seasons, and therefore the sky, run all through it. I live in the Pacific-Northwest in an area with dense clay soil. Trying to plant a tree in the dead of summer, one would be hard-pressed to break the ground with a pickaxe, let alone a shovel. It is much better to plant in the fall, when the rain makes the soil easy to dig, yet not waterlogged as it would be in the winter, making it impossibly mucky. The tool of digging, the shovel, *only does work when sky agrees*. And the earth itself needs sky to make it soft so that planting may occur. All this is to say that the sky itself dictates when one picks up the shovel and puts it down. The sky both provides the time and takes it away. One says, “now is the time to dig” and may put all other tasks aside to make way for sky’s requests. Contrast this with the industrial excavator, which does not ask sky to grant softness to the earth, but cuts into earth, willing or no. The excavator cares not to listen to the signs of the seasons. The logic of the excavator simply pays no heed to the seasons, and therefore pays no heed to time. All time is leveled down to abstract time. Working 24 hours a day with the help of high-powered lights, the excavator continues its task. But given the tools of craftwork, the earth and sky conspire together to indicate when it is appropriate to dig and plant. One need only listen to this speaking.

Craft-things (such as bridges, homes, walls, gardens, and orchards) are brought-forth in such a way as to be mindful of sky. That is, they are responsive to the requests of sky in their design. In being mindful of sky, they recall its nature. To recall sky by integrating it into the things one makes is a recognition that there are some things that are beyond human control.[10] Heidegger, again attends to the old stone bridge:

> Resting upright in the stream's bed, the bridge-piers bear the swing of the arches that leave the stream's waters to run their course. The waters may wander on quiet and gay, the sky's floods from storm or thaw may shoot past the piers in torrential waves—the bridge is ready for the sky's weather and its fickle nature (2008j, 354).

While modern technological society seeks to manipulate sky through practices such as cloud seeding and global dimming, historically, sky is the source of much clemency and inclemency for humans. Humans cannot predict the fortune that stems from sky. Rain can be the blessing a fruit harvest needs in a dry season, or it can be a curse, causing the fruit to burst on the branch. Sky is perhaps the first indication that some things in human life are elements of fate. These signals from sky are intimately related to notions of timeliness, for, as said, it is the weather that decides when it is appropriate to pick up a shovel and not humans. This is already to speak against the logic of enframing, which seeks to bring all things under its control. The life of craft acknowledges that what humans can do is prepare for these turns of fate as best they can in the things they bring-forth. The bridge is designed in such a way as to let the stream carry on, in all its caprice. Since the sky is the ultimate source for the stream's mercurial nature, in building for these possibilities, the craft-builder builds for the fortune that falls from the heavens. One way to care for sky is to be mindful of it, to *notice* it, and to plan for its eventualities. That the bridge stands the test of time—carrying people in an arc over its waters for hundreds of years—is a testament to its caring for sky.

In speaking of the Black Forest farmhouse, Heidegger shows that the craftsperson's responsive planning can take what is viewed by many in northern climes as a great misfortune—deep snow—and incorporate it into one's life such that it is viewed as a gift. Heidegger lets sky itself do the speaking:

> It placed the farm on the wind-sheltered mountain slope, looking south, among the meadows close to the spring. It gave it the wide overhanging shingle roof whose proper slope bears up under the burden of snow, and that, reaching deep down, shields the chambers against the storms of the long winter nights (2001b, 362).

Heidegger speaks as if the sky[11] built the house according to *its* ownmost logic, its ownmost speaking. Indeed, it as if there was never any other way for the house to be built. In contrast, Young comments on the modern "New Zealand farmhouse[; p]laced on [the hill's] crest, it destroys the contour of the hill on which it is built" (2001, 109). What is more, the apex of the hill is a windy place, such that the house is constantly buffeted and beset by winds, rains, and sleet. So too, the modern Canadian suburban home is, if anything, a defiance of sky. Thinly insulated, it requires a steady stream of fossil fuels, supplied by a snaking underground network of pipes, in order to make it fit for living.

Instead, the Black Forest farmhouse reposes back into its mountain slope, closely guarded by trees from wind. Young specifically comments on Heidegger's own little "hut", a "miniature version of the farmhouse", which itself is nestled into the hillside (2001, 109, ft. 6). The strong roof does not only plan for the inevitability of heavy ladenness with snow. The roof is built into the hillside, so that when the winter snow wells up (109, ft. 6), it acts like a blanket, insulating the house in the cold winter months. The logic derived from sky transmutes the snow, perhaps seen as a frigid burden, into a warm mantle enveloping the little hut. Importantly, this in no way changes the nature of sky or snow. Other creatures—such as bears and queen bumblebees—use snow to insulate their winter refuges in the same way. Technological society scrapes up vast amounts of snow off roadways, loading it up, and trucking it vast distances. In contrast, the life of craft works with that which comes from the sky, not against it. Warmth is already within snow to give.[12] Sky, experienced as warmth, and properly as gift, is thus built into the sensibility of the hut's design. By ontologically opening up a space for warmth and welcome within the depths of winter, the snow provides welcome for mortals to dwell. In the little hut's case, it provided welcome on those long winter nights illuminated by candlelight for Heidegger to feel most at home—to perform his life's work.

The life of craft has no need for watches. Instead, it sets its "watch" by the weather and the seasons. In doing so, it preserves and protects and understanding of timeliness away from enframing thinking, which would see all time leveled down to sameness. This craft logic is plainest in the spread of the farmhouse table. The rhythm and tempo of this life can be contrasted with the untimeliness of the modern supermarket, in which exotic fruits and vegetables are available year-round. Weather might be an inconvenience, but this does not stop one from enjoying mangoes in the dead of winter. There is a greater push in technological society to see not just one's table but one's lifestyle through the lens of featureless time. In such a society, *the watch is set*, and sky is forgotten.

That one would live their life by the chronology of sky is a sign to the craftsperson that certain things in life are out of her control. The unpredictability of sky's weather and the predictability of the seasons are something that the craftsperson expectantly plans for. This can turn curses into blessings, as with the warm snow cloak over Heidegger's little hut. But to be cognisant of sky is to also recognize that sky, through the constantly changing weather and seasons, provides mortals with a clearing—enough space—to do what needs to be done. Spring is for planting, summer for growing, autumn for harvesting, and winter for rest and gathering oneself. The life of craft, through incorporating sky into its planning and building and doing, does not forget sky but constantly recalls it and places it pride of place at the center of its dealings. This shifts the nature of sky ontologically as an annoyance or hindrance, into something that is properly seen as giftlike—as that which nourishes the earth with rain and gives mortals time to do what needs to be done.

Divinities

Under conditions of technological neutrality, humans are the arbiters of technology and control its uses. Human *agency* over technology is absolute. This goes hand in glove with the diminishment of the causes of a thing's coming to be in favour of the efficient cause, the human mode of causality. Closely associated with this is technological optimism, which is the faith that technology will rise to the occasion to meet the most serious of human problems, many of which were caused by technological manipulation in the first place. It should be clear by now that humans do not hold absolute mastery over technology, but to a large extent, contemporary technology holds sway over them. At the same time, humans do not hold sway over many elements of fate that have increasingly come to affect them in recent years.

Canada's West, for example, has been hit by devastating wildfires in the last decade. The logic of enframing demands that forests be made into regularized resources. Turning trees into pulp and engineered building materials is an attempt to render them closer to pure matter. This same logic has now sprung back and made it more likely that fire will spread through mono-cropped and clearcut areas. The unpredictability and increasing frequency of forest fires should serve as a reminder of two things.

First, contrary to what neutrality might argue, humanity lacks control over a great many natural and unnatural occurrences that come up increasingly against them. These can be said to be "granted" as opposed to matters of choice or willing. Second, there is a great difference between those elements of fortune or chance that can be said to be purely "natural" versus those elements that are the result of technological manipulation or at the intersection of manipulation and the natural world. Listening to the way fate differently presents itself sheds light on who the divinities are and provides a clue to combatting enframing.

The divinities reveal who they are in a myriad of ways. But their presence largely goes unnoticed today. One may catch glimpses of them, as mentioned in earlier, inside revelatory experiences of sublimity or beauty—or in the ontological wonder one expresses when contemplating why there is something at all rather than nothing. Most importantly, the divinities show themselves as the arbiters of all granting. Humans are not responsible for a great number—indeed, a staggering number—of the circumstances they find themselves in and the turns of fate that occur to them on a daily basis. Humans did not choose to be the beings who speak, the beings who think, or those who use *techne*.

Human fate, too, is granted. Odysseus in no way makes it so that the volley of suitors' spears thrown his way are off the mark. Any one of them could have killed him or his compatriots.[13] No amount of cunning will turn a well-aimed spear off its course. One can "do all the right things": eat healthy, get enough exercise, and so on—and still develop a terminal illness altogether "too early". The tree grower may care for her trees wisely, perhaps for a decade or more, only to find her harvest ruined by a hailstorm. All of these are examples of "naturally occurring" fortune.

This should be distinguished between kinds of fortune that occur yet in principle could be planned for so as to increase or decrease their chance of happening.[14] A rampant alcoholic should not count it as luck that she is diagnosed with liver disease after years of heavy drinking. Similarly, many disasters brought on by technological manipulation of the natural world, such as climate catastrophe, could be mitigated via the transitioning of the world away from various forms of enframative technology. (Not that this would be easy.) The important distinction to be made is between those elements of fortune that humans can influence and those that they cannot. The disastrous version of the first would be to blindly go headlong toward impending technological calamity because there is "nothing to be done". This is synonymous with Heidegger's "stultified compulsion to push on blindly with technology" (1993, 330). This is only a *counterfeit form of fate*, for it is within humans to change this "destiny" of technology. In contrast, it was not within Odysseus' power to turn the spears away from his body:

> Re-forming,
> the suitors threw again with all their strength,
> but Athena turned their shots (Homer 1998, Bk. 22, l. 301-3).

The authentic form of fate stems from those elements of one's own *wyrd* that cannot be changed. One's *wyrd*, meaning one's "destiny", stems from the old English *weorþan*, "to become". What will become of one ultimately belongs to one's *wyrd*. And this was traditionally the provenance of the divinities. In Odysseus' case, this was Athena.

Within the life of craft, one is continually reminded of those aspects of one's life and the natural world that one has no or little control over. This is a challenge to traditional metaphysical views of human agency, specifically within ethics. Although there has been some progress made in recent years, it is still common to see the "ethical agent" abstractly, as the center of a featureless thought experiment.[15] Such thinking is easily subsumed by the coping mechanisms of enframing thinking—optimism coupled with neutrality. Since the world does not impinge upon the abstract agent, the agent chooses a course of action and technology rises to the demand. This state of affairs makes the increasing dominion of modern technology more palatable to people today. In other words, the illusion of choice in today's technological society covers up the lack thereof.

The things humans are granted (e.g., language, thinking, *techne*) and one's own *wyrd* should be coupled with the character of the natural world as, too, granted. Humans do not make it such that clay can be used to fashion a jug or that granite can be used to fashion sturdy walls. Rather, these elements are essential to the nature of clay and granite. These are all authentic elements of granting—out of one's control. Heidegger gives a name to those facets of life that are beyond human willing: They are the provenance of the "divinities". I deal with the granted nature of natural materials first.

The first glimpse of the divinities, as those arbiters of things beyond human control, comes to the craftsperson within the clemency and inclemency of the sky. The sky is an important source of human fortune. Now there is a second. It appears within the nature of granted materials. The phenomenological sight of *techne* simply must pay special attention to the unique aspects of natural materials that are granted—those aspects of materials which are beyond one's control. Quite simply, natural materials will buck and fight against the uncouth craftsperson. If the craftsperson takes natural materials, furnished by earth, as pure matter—able to be dealt with without responsiveness to the individual qualities of the material before her—she will find herself continually frustrated. She must respect and work with those unique elements in order to bring forth anything at all. This is essential to getting along within a craft lifeworld.

The experiences of George Sturt, a 19th- and early 20th- century wheelwright, are instructive here. Wheelwrighting, the making of the wagon wheel, the craft that Sturt cut his teeth on, demands an understanding of the local woods and the materials therein. The spokes must be made from straight grain. A wood such as oak, ash, or hickory would do. And the pieces should be riven, not sawn. Riving happens with a froe (a handled splitting wedge) and a maul. A sawn spoke, even if sawn along the grain, would invariably have some of its grain run out, leading to weakness along its length. Many traditional crafts use riving instead of sawing for various reasons.[16] Sawn wood shingles are liable to decay, for example, because the exposed pores of the wood will absorb water. In a riven shingle, with no exposed pores, the water runs smoothly over the length of the grain. A wood such as oak with linear grain takes to the froe easily, producing a strong spoke.

A spoked carriage wheel also needs a central hub, which the spokes radiate from. This is where a use for twisted grain presents itself. A hub is subject to considerable jarring and impact. A wood with gnarled and reversing grain—such as elm—is less likely to come apart under these conditions.[17] The elm's whorl teaches something to the wheelwright who would listen. Since it is difficult to rive through a whorl, if one instead rives *around* it, this will produce a strong central core from which the hub may be made. The material tells the craftsperson how to work with it.

The recalcitrance of materials opens an avenue for the craftsperson to notice that she played no part in the creation of the thing's unique aspects. Since these aspects are beyond her control, she must adapt to them. This already implicitly points in the direction of the divinities, those who are responsible for the granted nature of things. This realization shows her the limit of her agency, for no act of willing will make the material otherwise. The lie of enframing thinking is to imagine that the entire world can be manipulable.

At a practical level, as a matter of course, the tools and practice of craft bring-forth things in a way that *works with* the nature of the materials at hand. Crucially, it is not that authentic craft ways could have *chosen otherwise* and somehow *forced* the natural materials into submission. One cannot make elm straight grained or the oak gnarled. Natural things lay down a fitting pathway for use. A spoke made from elm or a hub made from oak would break, would not be fit for purpose. When Heidegger says that nature speaks yet is silent, this is one way he means it. Sturt echoes the idea that materials speak to one who has developed the ear to listen, but he adds a further experiential dimension:

> I have known old-fashioned workmen refuse to use likely-looking timber because they held it to be unfit for the job. And they knew. The skilled workman was the final judge.
>
> Under the plane (it is little used now) or under the axe (it is all but obsolete) timber disclosed qualities hardly to be found otherwise. My own eyes know because my own hands have felt, but I cannot teach an outsider, the difference between ash that is 'tough as a whipcord', and ash that is 'frow as a carrot', or 'doaty', or 'biscuity'. In oak,

> in beech, these differences are equally plain, yet only to those who have been initiated by practical work (Sturt 1923, 24 in Dreyfus & Kelly 2011, 246).

Sturt realizes that the *tools* of craft—such as the plane and the axe—are gateways to the kind of phenomenological sight the woodworker has. They are more amenable to certain kinds of uncovering rather than others. Materials will yield to hand tools in certain ways while being recalcitrant to other modes of revealing. This gives the craftsperson a clue to how the materials should be worked. These features become covered up when working with the wood via power equipment—and become all the more so hidden when materials themselves become regularized.

With the assistance of his tools and experience, the woodworker comes to possess a certain kind of *sight* (what would probably be called today "tacit knowledge"), which uncovers how a given piece of wood wants to be worked. Sturt uses the word 'discloses' to explain the process by which what was covered up is revealed to the attentive woodworker using appropriate tools.[18] Phenomenologically speaking, the craftsperson can see things in the wood that others cannot. That is, the attentive craftsperson can see the subtle variations in the wood that call for it to be worked in certain ways. In particular, he sees those materials that are 'fit for purpose': That can be worked with to do the job well. It would not do to make shingles from a decay-prone wood such as poplar, just as it would not do to make a strong spoke from wood that is brittle ('frow') as a carrot (*cf*., Dreyfus & Kelly 2011, 247). The wheelwright reveals the oaken spoke as *strong* and *resilient* along its grain, as the oak was when it stood. And when he uses it appropriately, he likewise covers up its weaknesses. It would be unwise to make an oaken hub.

Natural materials, through their own poetic unfolding, are disposed to certain kinds of human *poiesis*, bringing forth. Craftwork is listening work. It is essential to it that it *comports* itself to the natural world. And it is only through this comportment that the sacred dimension of materials ever begins to show itself. According to Dreyfus and Kelly, "[t]he task of the craftsman is not to *generate* the meaning, but rather to *cultivate* in himself the skill for *discerning* the meanings that are *already there*" (2011, 247). These meanings are not contained within materials forever and for all times—or even for beings that are not human.[19] Rather, these meanings occur at the *intersection* of human *poiesis* and the unique elements of the natural material at hand. The phenomenological mood of craft lives at this intersection.

Craft paves the way for a recognition of the ontological dimension of materials as more than just brute objects—but something that comes to humans as granted and beyond their control. The craftsperson does not and cannot demand—as one can with an artificial material—that a doaty or biscuity timber rise to unreasonable demands. Nor can he, as Dreyfus and Kelly note, *make* a material into something that it is not just by imagining it so—for it is not within the *power* of the craftsperson to control such things. This power properly comes from beyond him. Rather, the craftsperson, as Dreyfus and Kelly say, finds 'meaningful distinctions' in the wood. Those who are responsible for the furnishing of these distinctions are the divinities. This is the name Heidegger gives for those arbiters over aspects of life that are beyond human—and indeed, technological—control.

When the craftsperson notices things in their ontological nature, she is already on the way to disclosing them in their dual granted nature—both in terms of granting (as coming from outside of human willing) but also as a gift for dwelling. It is a miracle that natural materials—which are at once both recalcitrant *and* yielding—should grant humans the ability to work with them at all in order that they may build the things they need to live. This mode of disclosure speaks against that of enframing, where materials are either made to yield or engineered and pre-determined to yield in ways that are everywhere the same.[20]

The mood of craft moves beyond a mere faith-based recognition of the world as granted (the moods of the poet and thinker) toward an intimate understanding of those aspects of natural materials that are properly the providence *not* of humans or of technology, but the divinities. While what was just discussed occurs implicitly in the workings of craft, there are times when the life of craft explicitly recognizes the presence of the divinities. This is the time of the *festival* and other celebratory occasions.[21] Heidegger returns to the festival over a more than 20-year timespan from 1936-1959 (2001b, 16). It is within such occasions of active thanking that the divinities appear as divinities most purely—as those who provide the gifts necessary so that mortals may dwell and live well. The Todtnauberg villagers Heidegger speaks of in the epilogue to "The Thing", for example, do not *announce* their connection to the land

and write tracts about it: Instead, "all of this moves and flows through and penetrates daily existence up there [in the Black Forest]" (2001b, 16). One thing they do is celebrate. An important part of daily existence is the creation of space for things to hang momentarily as they really are in their essential nature.

The festival—I take up the harvest festival—is the explicit occasion where the limits of human agency and its interrelation to fate are on display. In other words, the limits of human agency hang in its essential character. Heidegger calls the festival time "the while" in "Hölderlin's Hymn 'Rememberance'" (Heidegger 2018, 80-81; and see Mitchell 2015, 279*ff*.). What occurs during the festival while is a temporary suspension of fate. Mitchell renders it: "[F]ate is balanced for the while" (279), while McNeill translates, "fate is equalized for a while" (Heidegger 2018, 81).

During the festival, the fickleness of luck is deferred for mortals. Temporarily, and only for the day, things have gone well for them. One's daily tasks and worries are suspended. In the case of the apple festival, an early frost did not come. There was not an inopportune rain, and thus, the fruit did not burst on the tree. There were enough hands to pick the fruit—and preserve it. The festival is the commemoration of this series of events—of things having gone well.

This recognition is a simultaneous noticing of the limits of human agency. For example, that fruit should or should not burst on the tree is outside mortal control. The festival is the opportunity to gather and be thankful for the harvest, which is outside of human willing and therefore never a guarantee. In a festival year, the divinities—the arbiters of fate—have seen fit to bless. Fate is balanced for the while, since the community does not have to *hope* that things have gone well. Instead, good fortune can be experienced truly as a gift without worry, without the bittersweet threat of it being taken away. This belongs to the essence of the celebratory mood of the festival.

Contrast this with the modern amusement park, fixed in location: a sort of permanent sham-festival, awash in always available high-fructose-corn-syrup "food" products. The fantasy that sustains a place such as Disney World is that once one enters its gates, all cares and worries are suspended. A place like this, cast in a fake permanent revelry, is entirely ignorant of the notion of fate, assuming fate's suspension is a matter of merely "buying tickets".

In the harvest festival, things hang as *gift*. First, during this special time, things "shine forth", in the words of Dreyfus and Kelly (2011, 129-6). At the dinner table, the apple is both food and blessing. But during the festival held in honour of the apple, it takes its form purely as gift. What is especially important for Heidegger is that

> the festival is the time-space and the essential configuration of the most intimate equalization, when each thing 'is as it is' … in its essence (2018, 81).

That Heidegger should use 'time-space' here is appropriate. The 'while' that the festival occupies has been carved out of the time and space of everyday human concerns. The earth, experienced as one's neighborhood and landscape, is nonetheless a site of everyday worries and concerns. It is the site of the granted nature of materials, which are not *secured* in ways that the objects of enframing are. One's oak may be doaty. The apple one pulls off the tree may be full of worms. The festival creates a safe space where the thing (the apple) is experienced apart from these concerns—as something that has turned out well. The apple *is* delicious. It *is* a blessing. It *is* a gift.

Regarding sky, the festival is a reprieve from its impulsive nature. But there is also here a carving out of an appropriate time to celebrate. It is no mistake that the vast majority of holidays in northern climes occur after planting and harvest. The nature of sky in these climes makes it such that there is little time in the spring and summer to do things other than planting, tending, and harvesting. Paradoxically, with the turning of the seasons, with things receding back into the earth and the cessation of productive growing—things perhaps associated with death—humans instead get the chance for the most merry occurrences of life to occur. The sky—by granting growth a reprieve—grants humans the opportunity to celebrate growth's occurrence. It is the sky itself which creates this time.

The divinities also are revealed in their essence, as arbiters of the granted nature of the world and overseers of fate. When one directs a toast, a prayer, a poem, or an ode to the good harvest, it is the divinities who receive those thanks. They are responsible for the granted nature of the world. The apple tree is toasted as a thing of wonder. Humans in no way made it so that some trees are the kinds of things that productively spring-forth fruit of their own accord—or that bees should make love to blossoms in a complex ritual that gives birth to both apples and honey. This occurs naturally within the poetic back-and-forth of the apple tree and the natural world. All of these things did not have to be so. Humans could survive, if need be, on unpalatable and unwelcoming fruits of the earth. That delicious fruits spring forth comes as a fortunate gift from the divinities. They are also responsible for overseeing human fate. Everything subject to caprice is under their purview. When one gives thanks to them, one recognizes that there are many elements of the world that are beyond mortal (or technological) willing. During the festival, the divinities most purely show themselves in their essential nature. This nature exists entirely in the receiving of thanks for that which is granted. One may stylize the divinities in a myriad of ways—by giving them names, flowing robes, or certain properties—but none of this belongs to their essential nature.

By now, the reader should be able to see that there is simply no need at all to give a metaphysical interpretation of the divinities. They are neither "supreme beings", neither Spinozistic, nor Leibnizian, nor medieval disembodied minds, nor dancing atop Mount Olympus—nor atop the head of a pin, for that matter. They are not incompatible with a religious view of the world, nor incompatible with a secular view of it. Indeed, Dreyfus and Kelly spend the bulk of their greatest work, *All Things Shining*, explaining how the world might again come to shine with a secularized form of the sacred (*cf*., 2011, 226*ff*.). This 'secular sacred' fully fits Young's interpretation of what Heidegger is doing in his later philosophy, in which the divinities heavily figure (2001, 90-2). The divinities are simply the name Heidegger gives for the manifestation of all that is granted. They are to serve as a reminder to humans of what they do not control—and at the same time, reveal those aspects of the world that will always be preserved from machination.

The divinities do not exist apart from humans, just the same as the fourfold itself or an ontological understanding of the world also does not. Therefore, one must not imagine divinities as sitting in an aether, as beings that would continue to exist were the human race to disappear. To say that the divinities have properties in a scholastic metaphysical sense is to already run afoul of Heidegger's contention that they are inseparable from human dwelling. The proper "function" of authentic thinking is to establish in memory the dwelling character of the world. The same goes for *techne*, which deals with the establishment of a concrete memory of dwelling in the things it brings-forth.[22] Similarly, that humans ever did place something such as a small "altar corner behind the community table" (Heidegger 2008j, 362) was only to *preserve* the memory of the nature of much of the world as granted. The function of the altar, as a site of remembrance, is to open up the ontological space required to view the world as granted in the first place. It is the site—in view of the table—where one recalls the nature of what is on their plate and the nature of all the other gifts around them. The function of the festival is entirely the same: a reminder of that which is granted. And granting is precisely the providence of the divinities.

The reason why providing a clearing for the divinities to announce themselves is essential to combatting enframing is that their presence provides the ontological space in one's life to recognize those elements that they have no control over. The notion of the divinities is pugilistic and antithetical toward the modern technological world, which is at once both enframed yet concealed in such a way as to hide that it is so. The true nature of enframing is veiled by ideas of technological neutrality and optimism and the false idea that humans both control technology and that, moreover, the world itself can optimistically be controlled through technological means. The space the divinities open is one of safeguarding certain elements of life. They serve as a continual reminder of those elements of the world that are out of one's control. They highlight the difference between those things that are authentically granted and those which are counterfeit. Athena only helps turn Odysseus's fate because he has the wit to know what he can change and the determination to continue to find his way home, even after twenty years. Paying deference to the distinction in one's own life is a matter of wisdom. Craft provides an inroad toward this insight.

Heidegger repeatedly says in his writings that the default character of the divinities is receding. Our age is one in which their "weal … has been withdrawn" (2008j, 352). Seldom today do people ever witness their weals, their marks, upon human affairs. Divinities cannot reveal themselves in places that are not first present as holy. In other words, it is vital to recognize that the divinities only ever appear in a place that is *already* sacred: As Mitchell argues, “For Heidegger, the medium is ‘the holy’ (*das Heilige*). Any conception of … the gods … can only appear within the medium of the holy” (Mitchell 2015, 163-4). To this end, he argues that if humans experience the world as a sacred medium, then the divinities have already arrived (163-4). One way, I have argued, to change the ontological cast to the world—to make it sacred again—is to begin by treating the world in a craftlike way. Mortals can do this through recognizing and bringing-forth natural materials in their granted nature and in explicit occasions, such as the festival, in which things most clearly arrive as gift. Both reinforce the giftlike nature of the world. The burden for the coming to be of this disclosive mood falls squarely on the shoulders of mortals.

Mortals

Mortals dwell. Their responsibility is in dwelling. To dwell is at once not to merely exist. Nor is dwelling unthinking stultified compulsion, whether it be in the mode of technology or craftwork. It is, rather, to take one’s existence seriously, as something at stake. What is at stake for humans is the disclosure of themselves and the world. Humans are the site of the occurrence of the fourfold. The fourfold does not exist without them. Humans, however, do not “make up” the fourfold. It emerges from the intersection of human dwelling and the granted nature of the world. Each element of the fourfold speaks to one who should care to listen. But such speaking is soft—while modern technology speaks loudly. The first task of humans is uncovering this quiet speaking once again.

To be mortal is to be predisposed in one’s essential being to uncover this quiet speaking. The poetic bringing-forth of *techne* is the gift that enables this latent possibility with humans. Craft knowledge is, to a large extent, tacit in nature and not easily codifiable, so it can only be learned through doing—either under the wing of a master or through much trial and error. Trial and error need not be all-encompassing, for it is the case that the texture of the natural world can be read. In this way, crafts (and their revealing) are not lost forever. It is always within human revealing to recover the lost texture of the natural world. Even crafts that have almost entirely been lost, such as traditional sea navigation and woodworking are not gone without a trace. The surface of the ocean changes in the direction of land and can be “read” just as one can “read” the surface of the grain when planing a wood surface or hewing with an axe. Human *being* has this capacity within itself. That is, the would-be craftsperson already has this latent knowledge contained within her body, her hands, her eyes, her ears, and her “bones”. The things that craft produces are very much the realization of this “bodily knowledge” … or indeed, *hand*-icraft. The gift of *techne*, the mortal mode of *poiesis*, is that it is *already* suited to bringing-forth things from the natural world in this way.

To one whose ears are stopped up, this speaking remains silent.[23] There is always the possibility that one can become a wood *butcher* rather than a wood *worker*. The wood’s protests may fall on deaf ears. There are no rules that say that one cannot make a spoke from gnarled grain; or saw instead of rive cedar shingles. But then naturally one’s cart will upset; one’s roof will leak earlier than expected. It is all the more difficult to ignore the natural world when one uses the tools and practices of craft. The tools of craft allow the natural world to guide the craftsperson’s body in revealing. Attempting to split granite with a mallet and chisel is exhausting and jarring—just as riving through a knot elm is. One need not have any prior craft knowledge to run up against the recalcitrance of the natural world and conclude that there must be a way forward that works with the thing at hand. The careful neophyte will discover these possibilities herself. Since the knowledge of how to work with natural materials is already implicitly contained in doing, all one need to do is approach them with—again, as Heidegger says after Parmenides—an “open heart” (*cf*., 1969, 444). This means not coming to the world with preconceptions that would seek to force it into shapes it is not amenable to (such as transforming granite into regularized building blocks or demolishing the pond to build the overpass). This takes subtlety and tact. In other words, to have an open heart is to already be on the path to a craftlike interaction with the world. To follow along this path is the path of fourfold world disclosure. This is the first task of humans.

The second task is the uncovering of their mortal nature. To own up to one’s mortal essence is to recognize that mortals are the only beings capable of death as death and to live one’s life within this realization. For a mortal to incorporate the knowledge of death into her life is not to focus on her demise. It is not to fall under a continually morbid mood, constantly ruminating upon her expiration. Heidegger says that

> [m]ortals dwell in that they initiate their own essential being—their being capable of death as death—into the use and practice of this capacity, so that there may be a good death. To initiate mortals into the essence of death in no way means to make death, as the empty nothing, the goal. Nor does it mean to darken dwelling by blindly staring toward the end (2008k, 353).

To be mortal is to confront death. Because humans are mortal, they can die a true death (Heidegger 2001b, 76). While other creatures pass away, only humans know death as death: "The animal perishes. It has death neither ahead of itself nor behind it" (76). In contrast, humans can come to plan for death, dread it, or welcome it (76). A person makes a good death for herself when she lives up to her essential nature as the being capable of death. To 'initiate her essence' is to take responsibility for her existence, which is twofold. Humans are the site of world disclosure. Humans are capable of death. Taken together, this means that humans are tasked with the responsibility for preserving a recovered world disclosure for those to come. If humans lived forever, they could find the mood of guardianship for themselves and hold onto it. But since they cannot, they must seek to *continually* safeguard the fourfold disclosure of the world.

In contrast, one can die in vain. Safeguarding may be a solitary effort, as in the figure of the hermit of the woods. But this is vanity, for the hermit keeps the "secret" to himself, like a buried treasure with no map. The secret dies with him. The hermit perhaps takes *his own* existence as at stake. But he does not take seriously that the fact that world disclosure is a *human affair*, that it must go beyond him. World disclosure must be preserved beyond death. The confrontation with global technology is too great for any one mortal to bring about, so what one is left with as an appropriate response is to prepare pathways for others to practice guardianship in turn. This ensures that reclaiming these forms of disclosure goes beyond oneself and endures. The process of preparing pathways is the building of a home for mortals. The two are inextricably linked and support one another.

There are myriad pathways within the life of craft that serve to build a longstanding home for mortals. The first way incorporates the nature of mortal finitude into the fabric of the things that are built. In "Building Dwelling Thinking", Heidegger notes that within the rural Black Forest home (or homestead), there is a plan for the cyclical nature of life and death and a welcoming for those to come (1971, 362). The little altar "behind the community table" provides a place for the family to give thanks to the divinities but also serves as a reminder of those who have passed (362). The "childbed" prepares expectantly for those to come (362). The coffin in the corner, as was tradition, makes a place for the acceptance of death within the household. Heidegger notes that the farmhouse "[i]n this way designed for the different generations under one roof the character of their journey through time" (362).[24] Many of these elements may seem like thoughtless traditions and superstitions. But they are anything but. The farmhouse, the home, expresses concretely the mortal journey through life. While mortals die, the mortals to come take their place and carry on their practices and traditions. So much more than the morbid preparation for death, these practices preserve a sense of *continued* mortal dwelling on this earth.

The greater homestead incorporates the character of mortals and the entire fourfold within its logic. Next to the farmhouse is an orchard. The orchard expresses the mortal responsibility to build and secure a dwelling place for those mortals to come. When a mortal plants a fruit or nut tree, she makes that piece of earth her home. A home is place where mortals find continued welcome. The gift of fruit provides this welcome. As she cares for her world—through planting, through tending to the health of its soils, and so on—her caring becomes solid and tangible, an element of the world itself.[25]

Each element of the fourfold arises through this caring. Earth, through its own motive unfolding, provides her with the materials she needs to make herself her a home. A seed, once planted, rises up from earth of its own accord. The tended landscape in turn grows up around her and provides shelter—a safe space—from the inclemencies of sky. The sky is not covered up, however, as when someone watches a lightning storm passively from the safety of a high rise. It is the source of the calendar she lives her life by, giving her the *time* to get things done, the time to rest, and the time to celebrate. She says a quiet little prayer at the first sight of an opportune rain. She exclaims in wonder that she could be so lucky to be alive *right now*, tasting the delicious, bursting fruit right off the tree. In doing so, she acknowledges and knows enough that these gifts come from beyond her human *agency*. The harvest festival, a longstanding tradition, is the time of year set aside to pay tribute to this interplay of divinities upon human life.

Caring for her world both preserves the fourfold and a home for mortals to come. The two modes of dwelling are the same. In caring for the fourfold, she does not "sacrifice" her life so that it may be protected. Instead, this process secures herself a home for the first time. The orchard is a microcosm of this relationship that operates in her life. It is a concrete manifestation of the dual mode of revealing the world as fourfold and as homely. A fruit tree takes years to grow and produces fruit for decades or centuries after it has reached maturity. Because of its long lifespan, it serves as a site of continued welcome, like an oasis in the desert. It also serves as an ontological anchor through the generations—as it is a site that requires continues care and tending (pruning, watering, harvesting, etc.) for it to continually yield up its gifts. By necessitating continual care, it makes safeguarding a live issue for those to come and helps preserve care over the world as a disclosive mood.

Ultimately, it is the *rituals* and other deep ingrained lifeways that will sustain these disclosive moods into the future—so that they run deeper than any one mortal. While mortals cannot live on, the traditions and rituals they establish can. It is common in fantasy literature to put a glowing orbish-looking protective aura around something worth protecting. In the same way, traditions are concrete ontological modes of disclosure that shelter a kind of revealing that is in need of preserving. They form a protective aura around the kinds of behaviours and practices that encourage craft lifeways and feelings of protection over the world. Traditions surrounding food were surely the first and easily are the most important traditions. The harvest festival, discussed earlier, is an example of an occasion which continues to preserve lifeways into the future. These are especially important cases because festival occasions almost always include a role for children and younger folk to play, which instills guardianship practices early. Rituals, therefore, serve the dual purpose of casting a protective aura over the world in the here and now, while also keeping the disclosive recognition alive for those to come.

Rituals can be formal or informal in nature. Ruth Kirk details how both kinds of ritual were passed onto children in Pacific Northwest First Nations' salmon harvesting ceremonies (1982, 83). Children were taught at an early age that salmon were another race of people who lived alongside humans. They would give up their bodies as a gift for humans to eat. If their remains were returned to water, they would rejuvenate their flesh and come again the following year. Children learned to let the first salmon rest in a place of honour by covering them in "[f]luffy white down, a symbol of peace" between the salmon people and the band (83). They spoke the "words of welcome", which made their spirits amenable: "We are glad you came to visit us. … We had waited a long time. We hope you will come again soon" (83).

For coastal First Nations,

> [a]ll such ritual won favour and virtually guaranteed humans the help of Animal People [in the harvest]. Men and women went about even routine tasks 'all prayed up and ready', as Indian elders today express it. Luck played no part in success: care with ritual was what counted (Kirk 1982, 84).

Here, Kirk indicates two things. First, there is nothing magical about these ceremonies (84). They do not explicitly cause a good salmon harvest by casting a spell upon the world. Second, mortals who are guardians combine formal ceremonies of thanking with a general sense of thankfulness that permeates and flows through all of their interactions with the natural world. Rituals create a lifeworld in which mortals—especially children—are constantly reminded that the good fortune they enjoy or wish for is a gift.

Not all rituals need be explicit or grand ceremonies. For the life of craft, rather, subtle modes of thanking pervade the mundane.[26] Children watch and take these simple elements and learn to incorporate them into their own lives. They can be as simple as a little thanks given after a happy turn of fate, the careful deference one pays to the subtle differences between natural materials, or the pride one takes in one's local woods and mountainsides, which sees their exploitation as something wicked. They can be learned from one's elders, learned at the hands of a master, or simply learned simply through experience. These rituals, big and small, infuse one's lifeworld with sense of respect and outward thankfulness such that the exploitation of it becomes unthinkable. The craft mood is simply set against such things. While not magic, this continually casts a protective aura over the world.

Each element of the fourfold places a limit upon mortals. Natural materials speak to mortals, suggesting how they should be worked. The sky provides one with the time to do things. It also provides the first indication of the divinities, who are the arbiters of all things granted: the speaking of natural materials, the sky's caprice, and the mystery of one's fate. For mortals to dwell is to realize the limits placed upon them by the fourfold but also to realize that rather than caging them, this allows them to go forward clear-eyed on their journey in life, which is finite. Since they are mortal, they cannot preserve the disclosive mood of safeguarding by holding onto it tightly. They must pass the torch onto others. Ultimately, they are given a task, the task of preserving the disclosure of the world as fourfold. But this is not hardship. This process at the same time creates themselves and those to come a home.

Conclusion

The fourfold gives content to an appropriate ontological picture of the world. As mortals, humans are the site of the fourfold disclosure of the world. Without humans, there is no world to be witnessed and revealed. The responsibility to safeguard world disclosure, therefore, falls upon human shoulders. Human *being* lies in this responsibility. Mortals live *with each other* on the earth, below the sky, in the presence of the divinities. Importantly, in living within the fourfold, they snatch back and protect the earth, the sky, and the divinities from enframing thinking, which would see them rendered abstractly as space, time, and agency. And they snatch back a conception of themselves as controllers of machination and reorient their task toward continued responsibility over safeguarding. If these elements of the world are to be brought out in their more essential character, it is only mortals who can shoulder this burden.

[1] In the concept of the fourfold, Heidegger clearly draws on the impetus that arises from Aristotle's four causes, which is an attempt to indelibly unite things and world through explanation. But the four causes are not co-extensive with the fourfold. The Greek world was properly dancing with fourfold such that it would never have occurred to Aristotle to make it a matter of study. Aristotle would have not needed to explain to a layperson that the gods were responsible for many elements of their fate, for example. In the same way, should Aristotle be alive today, one would need to explain to him all of the aspects of life humans take for granted (that simultaneously render us homeless): that complex manufactured objects are ubiquitous and available the world over; that streets are reserved for cars; that humans talk to each other primarily through short-form text using pocket devices, and so on. For modern people who are world poor, the fourfold serves as a winning back of a world that perhaps once existed and could exist again in the future.

[2] When discussing Heidegger's example, Young connects the bridge to Heidelberg's Karl Theodor Bridge, colloquially known as the "Old Bridge" (2001, 110), which fits Heidegger's description of the "city bridge" (2008j, 354). However, he mentions this only in a single line. It is clear that that Heidegger primarily has the bridge over the "humble brook" (354) in mind as his main object of interrogation. And indeed, this is overall more consistent with the rural outlook these passages.

[3] The purpose of a wall is either to shore up a ditch, form part of a culvert, or as is most common, as a sheep fence. Sheep cannot jump very high. The most the waller has to watch out for, according to Langlands, is that the wall be constructed in such a way that if a sheep were to try to jump it, it would not fall over. It is better, therefore, to make the wall steep on the non-sheep side and as sheer as possible on the sheep side, forming almost a lean-to.

[4] That granite is heavy and the English ground often waterlogged also tells the builder something. In order to stand the test of time, the waller will need to undergird the wall with a stable footing of flat stones to spread out its weight and keep it from sinking.

[5] Heidegger makes the point repeatedly that the fourfold should be viewed as topographic features of one-and-the-same onefold world. That there is a is "a simple oneness of the four" continues as a theme in many of his writings, but especially in "Building, Dwelling, Thinking" (2008j, 352). The wall properly recalls the entire fourfold: As stone, the fence resists the whims of the sky and the seasons. Yet in resisting the gusts and paying respect to them, it recalls sky. It is good for mortals that stone should be there in order that they might build from it. Stone is something to be thankful for, as it is a gift that mortals did not create. It is as if the divinities saw fit to put stone in the earth so that they may use it to craft their fences and undergird their homes. Humans are mortal in a way that the earth is not. They must sacrifice their bodies so that they may work with the earth. Building fence is hard, difficult work. But it is work in silence: the dry stacking of stone, the cling, cling, cling of hammers. And in the end, the gift of dwelling.

[6] When discussing the Greek temple in "The Origin of the Work of Art", Heidegger says: "Standing there, the building rests on the rocky ground. This resting of the work draws up out of the rock the obscurity of that rock's bulky yet spontaneous support. Standing there, the building holds its ground against the storm raging above it" (2001a, 167). The temple is both made of stone and rests on a solid foundation of stone, just as with the humble English wall. The erecting of the temple brings-forth, perhaps for the first time, the solidness of *this* particular mount, so suitable for mortals to build structures so that they may dwell. The stone the temple is made of—limestone or tufa or marble, by standing tall against the storm's buffeting, first reveals how the stone had already remained for ages within the earth, substantial and enduring. In the same way, by being homed within the stone wall, granite begins to reveal itself as sturdy and dependable: something to build upon and be built with. In listening to how natural materials want to be worked, the craftsperson *safeguards* the disclosure of those materials against enframative practices which would see them made into home center building materials, which are properly homeless.

[7] Building with stone is a cyclic process, whereby in working with it appropriately, one provides a home for oneself. And in homing the stone, one brings the landscape, as stone, forward into presence.

[8] There has even been considerable debate over the nature of the line itself: e.g., whether it branches, extends in both directions, and so on.

[9] While I primarily explore rural farm life in this section, other craft lifeways including indigenous lifeways have their own unique rhythms and responses to sky. One does not exclude the other.

[10] Pumping chemicals into the sky to make rain by "seeding the clouds" with chemicals or dimming the sky with chemicals in an effort to stave off global warming are symptoms of enframative thinking, which would level all fate down to the control of machination.
[11] The passage speaks of the entire fourfold building the house, but I restrict the discussion for clarity.
[12] The Inuit igloo is a yet more perfect example.
[13] This is entirely distinct from the fact that Odysseus got himself into such a situation in the first place. This element of his fate was changeable.
[14] It might be wise to view "fortune", as a phenomenon, along a spectrum with "natural" on one end and changeable on the other. Odysseus, for example, could have chosen not to combat the suitors at all and give up his home to the them. It might be said that "he brought the volley of spears upon himself". But taking the spear volley as an event, it is clear that whether the spears hit or not is a matter of pure fate. There is enough here to distinguish the two forms of fate.
[15] Aristotle is an exception. Utilitarianism, in contrast, finds itself amenable to enframing thinking, and indeed, is likely not possible without it.
[16] Not to mention the fact that most woodcrafts of indigenous Pacific Northwest peoples start with a form of riving. The prizing of cedar planks off old growth trees using wedges is an example.
[17] It is for the same reason that the interlocking grain in woods such as elm is preferred for chair seats; —all the better to resist the kerplunking of countless backsides throughout the years.
[18] As has been noted in Chapter 5, however, one needs to look *beyond* tools to the overall disclosive mood of craft. It is not just the tools which make craft, but the overall disclosive outlook toward the world.
[19] A many-tentacled alien perhaps would not be disposed to the same kinds of bringing-forth as humans.
[20] In the former, a tree becomes pulp. In the latter, it is rendered into a regularized material such as Medium Density Fiberboard (MDF), the "data" relevant on how to work it known ahead of time.
[21] For a complete list of each mention of the festival in Heidegger's writings, see Warnes (2004).
[22] One should not see this only in terms of objecthood. Craft brings-forth occasions, ways of living, as well as craft-made things.
[23] The texture of the swells are revealed to the seafarer as indicating land in that direction—just as to the gardener, things are revealed within her soil, within the creatures of her garden, and within the leaves of her plants, that others cannot see. All this is to say that being proficient in a craft reveals the world in a certain way that would otherwise be hidden. And this is the essence of the comportment contained in craft.
[24] Heidegger is sometimes criticized in passing for not finishing the last half of *Being and Time*, but as scholars such as Thomas Sheehan make clear, Heidegger finished his project insofar as he redefines 'time' as something like the historical determinants (i.e. the clearing) that allow things to be disclosed to humans in the first place (*cf*., 2015, 268*ff*.). However, this is only to define what 'time' means definitionally for Heidegger but not to surmise how Heidegger ultimately thinks that mortals should properly *confront* time. I would suggest that it is passages such as these that give one a clue.
[25] This should be read in a Hegelian sense.
[26] As Kirk notes, for almost every mundane occasion, there is an associated ritual or prayer. This constant mood of thanking keeps one receptive to the fact that human existence and human dwelling is a gift. What the lifeways of past (and some current) peoples indicates is that Heidegger does not invent the fourfold from thin air. For example, in the last chapter, it was mentioned that Aristotle did not need to account for such a broad understanding for how a thing comes to be, for it was already naturally taken for granted within the Greek lifeworld. Indeed, Dreyfus and Kelly provide a long list of how the Greeks, especially the Homeric Greeks, already came to their world "all prayed up and ready" in the same ways that the indigenous experiences above indicate (2011, 88-9; 93-110).

Conclusion

A remark of Alex Langlands', already mentioned, points toward how the life of craft incorporates guardianship over the fourfold into its bearing from the start: "All traditional craft ways lead to the farmhouse table" (2017, 339). The point is not to suggest that craft is at bottom aimed at avoiding starvation. Assuredly, the spread upon the table is furnished by the work of craft and part of that work ensures that family and neighbors have enough to eat. But in making the table plentiful and enjoying its fruits, craft lifeways protect the fourfold in its essential nature. The landscape exists in the spread: Within the *terroir* of its fruits and the unique dishes that make up a region's hospitability. Picking the fruit is mortal work, but mortals are only co-responsible for the harvest's coming-to-be. That the harvest came in and was not ruined is both a gift from the sky and a reminder of how so much that matters to us is up to fate, in the hands of the gods.

All of this is acknowledged in the little prayer before the meal said by the small child that begins with, 'Thank you for the harvest …'. In such prayers, mortals recognize the fourfold and acknowledge its granting as that which preserves their way of life. The prayer is not something that can be dispensed with, forgotten, or seen as a something 'to get out of the way' before the meal. The prayer cannot, to paraphrase Heidegger, be 'used up language' (*cf*., 1968, 127). Crucially, nor can the prayer be properly said at the table provided for by modern technology, perhaps set with "fast" food. Thankfulness for the harvest, of things having gone well for mortals, is inapt in a modern technological world in which the meal is secured by the immediate availability of commodities within the supply chain. Further, there can be no recognition of a home for the fourfold within such a meal, where the origins of everything upon one's plate are largely inscrutable.

By now, it should be clear how reflections on Heidegger and craft underpin a deep and searching critique of debates in the contemporary philosophy of technology. As I hope to have shown, the accepted terms of such debates are in fact virtually incapable of grappling with the broader picture of how technology can come to influence human ends and how—more critically—technology comes to pervade thought and action through conditioning the world.

No wonder that Maarten Franssen et al., in their contribution to the *Stanford Encyclopedia of Philosophy*, are prepared to state that it is “questionable whether Heidegger should be considered a philosopher of technology” (2013). I would suggest that this is entirely expected of a debate (which can be characterized as the “little fish” in Wallace’s parable) that largely operates within the technological milieu and does not ask questions about the milieu itself. I propose that the philosophy of technology should take Heidegger seriously once again; and also, as I have said, interpreters of Heidegger should take seriously his reflections on technology, for this perspective allows seemingly disparate aspects of his thought to come together in a coherent whole. The assumption, (explicit in Franssen et al.) that because he is a “metaphysical philosopher”, Heidegger is not properly speaking of technology at all, is utterly misguided (2013).

What craft brings to the philosophy of technology is the realization that not all forms of technological practice are problematic, for some of its forms are—in fact—modes of safeguarding. This, in turn, suggests that the craft approach is in likely opposition to other positions, such as primitivim, that would advocate for the eschewing of nearly all forms of technology, even rudimentary ones, in the name of “re-wilding” the human species.

Beyond this, the craft approach finds its wellspring from within the historical origins of technology itself, both its practical origins as craftwork and its origins as *techne*/bringing-forth, as espoused by Aristotle. It is reasonable to suggest that the philosophy of technology, as a discipline, ought to attempt to differentiate the specific character of post-Industrial technology from antecedent technologies—being that it seems like the former threatens humanity’s future in a way that is more difficult to imagine within past technological lifeways. Differentiating between the two also causes one to think more closely about technologies and technological worldviews that get labelled as capable of “saving” humanity: green technologies and the thought that humanity must become an interplanetary species are examples of the former and latter, respectively.

What Heidegger brings to craft is an ontological orientation; what craft brings to Heidegger is a practical orientation. Viewing Heidegger through craft and vice versa brings forward the possibility of a practical mode of addressing the ontological task of guardianship:

that it requires the active building of a world. Craftwork contextualizes and concretizes some of Heidegger's recommendations (such as 'letting be') that would seem to advocate for a purely passive approach. The craft response to technology comes directly from closely considering the nature of the deep problem of technology. It also comes from within a close investigation of a defining feature of humanity, its unique capacity for *techne*. But what makes humanity distinct does not in turn elevate humanity above the natural world or lend credence to the idea that the natural world may be *disposed of* by humanity. *Techne* is just the unique human mode of bringing-forth. A constant motive bringing-forth exists everywhere in the natural world as *poiesis*, and humanity is very much included under its poetic sway. However, I suggest that humanity's forgetfulness of its responsibility toward world-disclosure and its capacity to reveal the world in a way apart from enframative technology now threatens its very future. If technology is humanity's greatest danger, as Heidegger would have it, from within it, the gift of craft may also be its saving.

I have argued that the craft approach is one appropriate answer to the problem of technology. While I have charted a path that describes the overall character of the approach, I have not circumscribed any specific steps that must be taken on the behalf of any one person to realize that potential within her own life. Indeed, since this is a work of philosophy, it is not clear that the provision of any such directly practical recommendations lies within its scope. Equally important, however, is the fact that the modern world is of such a character that one cannot hope to "recede into the background" of technological society and live a life apart from it, holding to hold onto their realization of the craft-life, protecting it like secret—perhaps in some rural enclave. For one, it seems impossible that billions of people can adopt a rural lifestyle given the current "needs" one is accustomed to as part of technological society. Many people would face great hardship. Among other things, I have noted that the run on toilet paper during the early phases of the COVID-19 pandemic indicates the modern inability (through no fault of their own) of people to deal with their own waste. Indeed, as stated in Chapter 3, because of the dual phenomena of apraxia (forgetting of practice) and alogia (forgetting of the language and thinking that would build such a world), many people are either unable to incorporate craft lifeways into their own lives or are resistant to doing so.

But just because something is difficult does not mean it is not worth doing. Humans are the site of the disclosure of the world. It is, therefore, their responsibility and no other being's responsibility to safeguard disclosure. It is all too common today to wait for or hope that some great event (perhaps even a catastrophe) will bring about a change in thought and action. Heidegger's worry, however, is that such a critical shock will never come. In this vein, some cultural critics call the state of the contemporary world a "boring dystopia" or as Gabriel Metcalf (2014) appropriates from Kim Stanley Robinson, "the great dithering". That is, everything continues to function. To adapt a thesis of Naomi Klein (2007), technological society might even propel itself forward from shock to shock, surpassing each one just by the skin of its teeth. Shocks become surmountable, as more technology is developed to deal with the problems technology causes.

I suggest that one thing humans can do, at the level of their own being-in-the-world is begin to prepare the way for a future mode of disclosure by building up their lifeworlds and their own communities in a way that takes safeguarding into account. At a concrete level, a one-size-fits-all approach cannot be recommended simply because ontological disclosure (and therefore all responses that take ontology into account) must be an intensely regional and situated affair. Therefore, guardianship itself must be regional, taking one's landscape, one's neighborhood, and the other aspects of the ebb and flow of one's lifeworld, into account.

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***Note: Dates occurring in brackets indicate first date of publication in original language.*

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