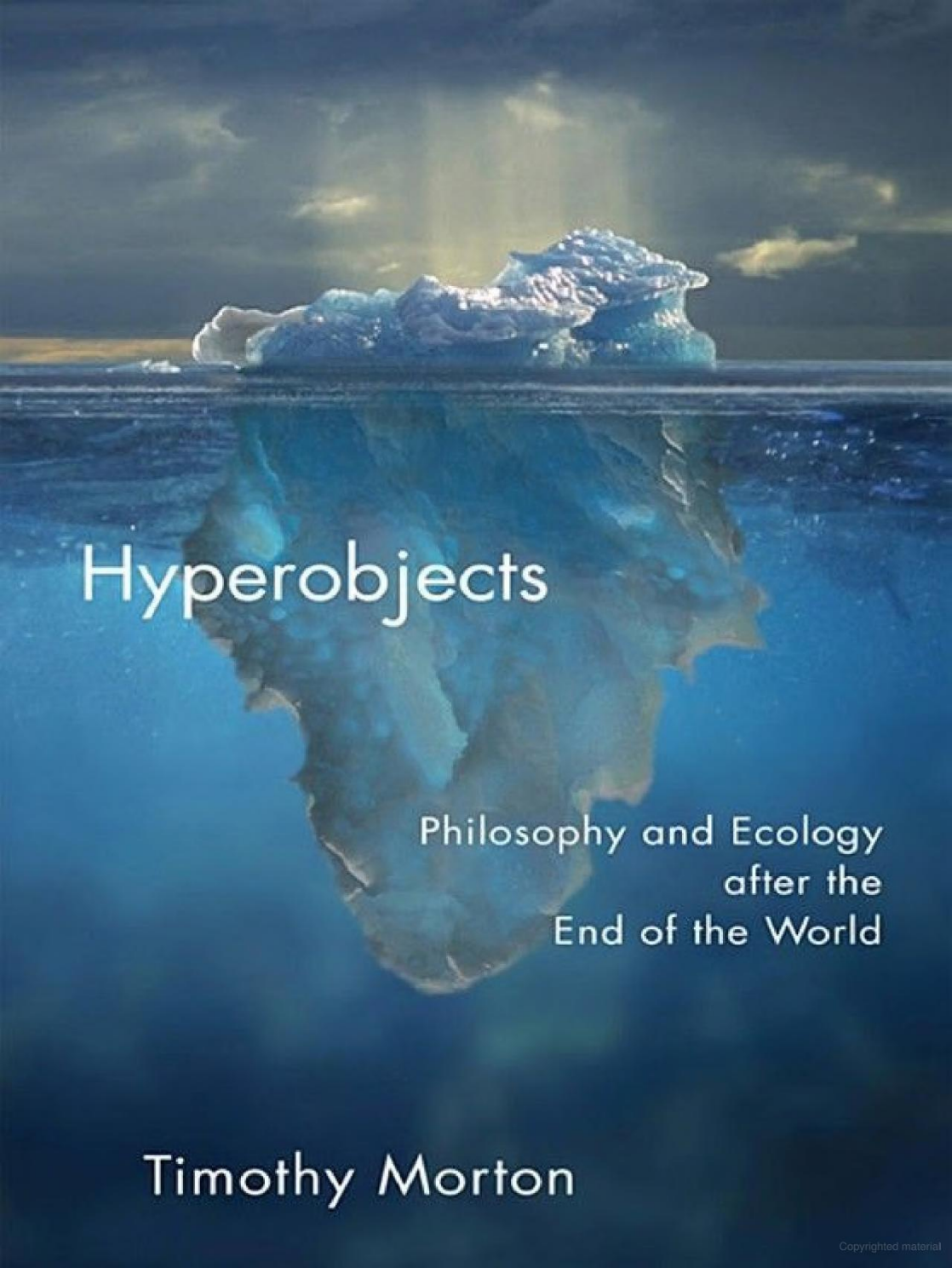

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Contents

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This book is dedicated to my extended families. Hyperobjects make you think about how families are fuzzy sets of beings, distributed over spaces and times wider than me and my immediate surroundings.

A Quake in Being

An Introduction to Hyperobjects

In *The Ecological Thought* I coined the term *hyperobjects* to refer to things that are massively distributed in time and space relative to humans.[1] A hyperobject could be a black hole. A hyperobject could be the Lago Agrio oil field in Ecuador, or the Florida Everglades. A hyperobject could be the biosphere, or the Solar System. A hyperobject could be the sum total of all the nuclear materials on Earth; or just the plutonium, or the uranium. A hyperobject could be the very long-lasting product of direct human manufacture, such as Styrofoam or plastic bags, or the sum of all the whirring machinery of capitalism. Hyperobjects, then, are "hyper" in relation to some other entity, whether they are directly manufactured by humans or not.

Hyperobjects have numerous properties in common. They are *viscous,* which means that they "stick" to beings that are involved with them. They are *nonlocal*; in other words, any "local manifestation" of a hyperobject is not directly the hyperobject.[2] They involve profoundly different temporalities than the human-scale ones we are used to. In particular, some very large hyperobjects, such as planets, have genuinely *Gaussian* temporality: they generate spacetime vortices, due to general relativity. Hyperobjects occupy a high-dimensional phase space that results in their being invisible to humans for stretches of time. And they exhibit their effects *interobjectively*; that is, they can be detected in a space that consists of interrelationships between aesthetic properties of objects. The hyperobject is not a function of our knowledge: it's *hyper* relative to worms, lemons, and ultraviolet rays, as well as humans.

Hyperobjects have already had a significant impact on human social and psychic space. Hyperobjects are directly responsible for what I call *the end of the world,* rendering both denialism and apocalyptic environmentalism obsolete. Hyperobjects have already ushered in a new human phase of *hypocrisy, weakness,* and *lameness*: these terms have a very specific resonance in this study, and I shall

explore them in depth. *Hypocrisy* results from the conditions of the impossibility of a metalanguage (and as I shall explain, we are now freshly aware of these conditions because of the ecological emergency); *weakness* from the gap between phenomenon and thing, which the hyperobject makes disturbingly visible; and *lameness* from the fact that all entities are fragile (as a condition of possibility for their existence), and hyperobjects make this fragility conspicuous.[3] Hyperobjects are also changing human art and experience (the aesthetic dimension). We are now in what I call *the Age of Asymmetry.*

Hyperobjects are not just collections, systems, or assemblages of other objects. They are objects in their own right, objects in a special sense that I shall elucidate as we proceed through this book. The special sense of *object* derives from *object-oriented ontology* (OOO), an emerging philosophical movement committed to a unique form of realism and nonanthropocentric thinking. Least of all, then, would it be right to say that hyperobjects are figments of the (human) imagination, whether we think imagination as a bundling of associations in the style of Hume, or as the possibility for synthetic judgments a priori, with Kant. Hyperobjects are real whether or not someone is thinking of them. Indeed, for reasons given in this study, hyperobjects end the possibility of transcendental leaps "outside" physical reality. Hyperobjects force us to acknowledge the immanence of thinking to the physical. But this does not mean that we are "embedded" in a "lifeworld."

Hyperobjects thus present philosophy with a difficult, double task. The first task is to abolish the idea of the possibility of a metalanguage that could account for things while remaining uncontaminated by them. For reasons I shall explore, poststructuralist thinking has failed to do this in some respects, or rather, it didn't complete the job. The second task is to establish what phenomenological "experience" is in the absence of anything meaningfully like a "world" at all: hence the subtitle, "Philosophy and Ecology after the End of the World."

I have divided this book into two parts. Since there is a radical split between the object and its appearance-for some other entity, it seems appropriate to divide the book in this manner. Hyperobjects require direct philosophical, historical, and cultural explication, and this suits the first part of the book. But then we must move on to the human appropriation of hyperobjects, which occupies the second part.

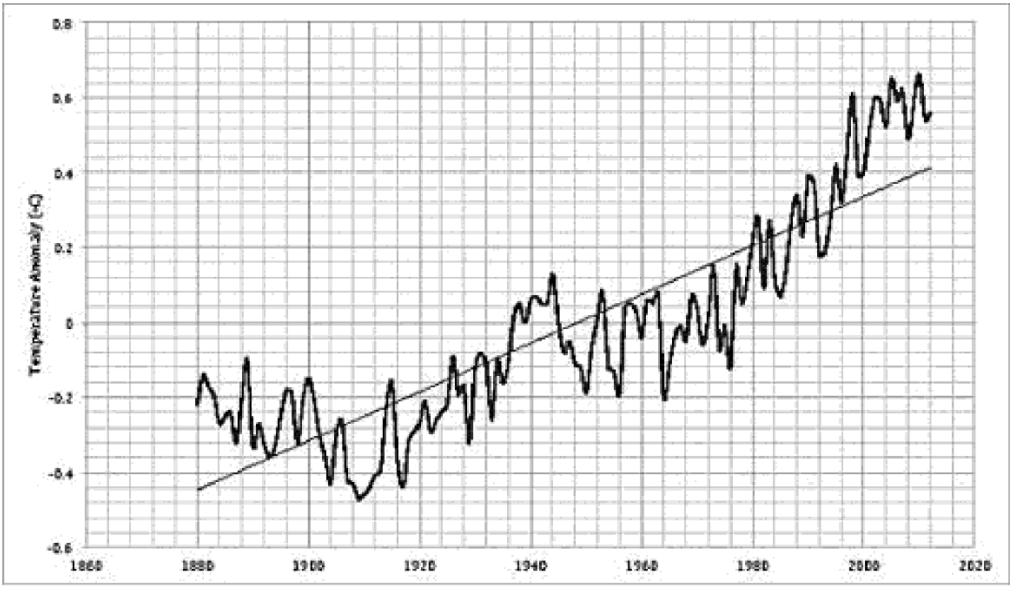

FIGURE 1. Global warming cannot be directly seen, but it can be thought and computed, as this graph demonstrates. Data from NASA Godard Institute for Space Studies; graph by Larry Butz.

Throughout *Hyperobjects* I frequently write in a style that the reader may find "personal"—sometimes provocatively or frustratingly so. This decision to write somewhat "personally" was influenced by Alphonso Lingis's risky and rewarding phenomenology. It seems appropriate. I am one of the entities caught in the hyperobject I here call *global warming* (another decision—I don't subscribe to calling it *climate change*: see Figure 1); one of the entities I know quite well. And as an object-oriented ontologist I hold that all entities (including "myself") are shy, retiring octopuses that squirt out a dissembling ink as they withdraw into the ontological shadows. Thus, no discourse is truly "objective," if that means that it is a master language that sits "meta" to what it is talking about. There is also a necessarily iterative, circling style of thought in this book. This is because one only sees pieces of a hyperobject at any one moment. Thinking them is intrinsically tricky.

This line of reasoning makes me seem like a postmodernist, though for reasons that will become clear, the emerging ecological age gets the idea that "there is no metalanguage" much more powerfully and nakedly than postmodernism ever

did.[4] Since for postmodernism "everything is a metaphor" in some strong sense, all metaphors are equally bad. But since for me, and indeed for all humans as we transition into the Age of Asymmetry there are real things for sure, just not as we know them or knew them, so some metaphors are better than others.[5] Yet because there is nowhere to stand outside of things altogether, it turns out that we know the truth of "there is no metalanguage" more deeply than its inventors. The globalizing sureness with which "there is no metalanguage" and "everything is a metaphor" are spoken in postmodernism means that postmodernism is nothing like what it takes itself to be, and is indeed just another version of the (white, Western, male) historical project. The ultimate goal of this project, it seems, was to set up a weird transit lounge outside of history in which the characters and technologies and ideas of the ages mill around in a state of mild, semiblissful confusion.

Slowly, however, we discovered that the transit lounge was built on Earth, which is different from saying that it was part of Nature. (Throughout this book, I capitalize *Nature* precisely to "denature" it, as one would do to a protein by cooking it.) "The actual Earth," as Thoreau puts it, now contains throughout its circumference a thin layer of radioactive materials, deposited since 1945.[6] The deposition of this layer marks a decisive geological moment in the *Anthropocene,* a geological time marked by the decisive human "terraforming" of Earth as such.[7] The first significant marks were laid down in 1784, when carbon from coal-fired industries began to be deposited worldwide, including in the Arctic, thanks to the invention of the steam engine by James Watt. The birth of the steam engine, an all-purpose machine whose all-purpose quality (as noted in its patent) was precisely what precipitated the industrial age, was an event whose significance was not lost on Marx.[8] This universal machine (uncanny harbinger of the computer, an even more general machine) could be connected to vast assemblages of other machines to supply their motive power, thus giving rise to the assemblages of assemblages that turn the industrial age into a weird cybernetic system, a primitive artificial intelligence of a sort—to wit, industrial capitalism, with the vampire-like downward causality of the emergent machine level, with its related machine-like qualities of abstract value, sucking away at the humans on the levels beneath. After 1945 there began *the Great Acceleration,* in which the geological transformation of Earth by humans increased by vivid orders of magnitude.

Yet like everyone else until about a decade ago, Marx missed the even bigger picture. Think about it: a geological time (vast, almost unthinkable), juxtaposed in

one word with very specific, immediate things—1784, soot, 1945, Hiroshima, Nagasaki, plutonium. This is not only a historical age but also a geological one. Or better: we are no longer able to think history as exclusively human, for the very reason that we are in the Anthropocene. A strange name indeed, since in this period nonhumans make decisive contact with humans, even the ones busy shoring up differences between humans and the rest.

The thinking style (and thus the writing style) that this turn of events necessitates is one in which the normal certainties are inverted, or even dissolved. No longer are my intimate impressions "personal" in the sense that they are "merely mine" or "subjective only": they are footprints of hyperobjects, distorted as they always must be by the entity in which they make their mark—that is, me. I become (and so do you) a litmus test of the time of hyperobjects. I am scooped out from the inside. My situatedness and the rhetoric of situatedness in this case is not a place of defensive self-certainty but precisely its opposite.[9] That is, situatedness is now a very uncanny place to be, like being the protagonist of a Wordsworth poem or a character in *Blade Runner.* I am unable to go beyond what I have elsewhere called *ecomimesis,* the (often) first-person rendering of situatedness "in."[10] This is not to endorse ecomimesis, but to recognize that there is no outside, no metalanguage. At every turn, however, the reader will discover that the prose in this book sways somewhat sickeningly between phenomenological narrative and scientific reason. Yet just as I am hollowed out by the hyperobject, so by the very same token the language of science is deprived of its ideological status as cool impersonality. The more we know about hyperobjects, the stranger they become. Thus hyperobjects embody a truth about what I once thought only applied to lifeforms, the truth of the *strange stranger.*[11]

What this book seeks then is a weird ecomimesis that tugs at the limits of the rhetorical mode, seeking out its hypocrisy. For reasons I give later, the term *hypocrisy* is very carefully chosen. *The time of hyperobjects* is a *time of hypocrisy.* Yet, for the same reasons, seeking out hypocrisy cannot be done from the point of view of cynicism. If there is no metalanguage, then cynical distance, the dominant ideological mode of the left, is in very bad shape, and will not be able to cope with the time of hyperobjects.

There is a further reason why Alphonso Lingis is central to this project. Lingis's book *The Imperative* is a remarkable reworking of Kantian ethics, taking phenomenology into account. The phenomenology in question is Lingis's own, developed from years of study and affiliation with Emmanuel Levinas, and very different from the Husserlian phenomenology that is its great-grandparent. In particular, Lingis makes it possible to think a truly ecological ethics. Many of his

most potent examples are drawn from ethical dilemmas concerning ecological action. In the later sections of this book (contained in part 2: "The Time of Hyperobjects"), I explore in depth why a Lingis-inspired view of ethics is essential for ecological action. In particular, the section entitled "Hypocrisies" deals extensively with Lingis's thought.

Hyperobjects are what have brought about the end of the world. Clearly, planet Earth has not exploded. But the concept *world* is no longer operational, and hyperobjects are what brought about its demise. The idea of the end of the world is very active in environmentalism. Yet I argue that this idea is not effective, since, to all intents and purposes, the being that we are to supposed to feel anxiety about and care for is gone. This does not mean that there is no hope for ecological politics and ethics. Far from it. Indeed, as I shall argue, the strongly held belief that the world is about to end "unless we act now" is paradoxically one of the most powerful factors that inhibit a full engagement with our ecological coexistence here on Earth. The strategy of this book, then, is to awaken us from the dream that the world is about to end, because action on Earth (the real Earth) depends on it.

The end of the world has already occurred. We can be uncannily precise about the date on which the world ended. Convenience is not readily associated with historiography, nor indeed with geological time. But in this case, it is uncannily clear. It was April 1784, when James Watt patented the steam engine, an act that commenced the depositing of carbon in Earth's crust—namely, the inception of humanity as a geophysical force on a planetary scale. Since for something to happen it often needs to happen twice, the world also ended in 1945, in Trinity, New Mexico, where the Manhattan Project tested the Gadget, the first of the atom bombs, and later that year when two nuclear bombs were dropped on Hiroshima and Nagasaki (Figure 2). These events mark the logarithmic increase in the actions of humans as a geophysical force.[12] They are of "world-historical" importance for humans—and indeed for any life-form within range of the fallout — demarcating a geological period, the largest-scale terrestrial era. I put "world-historical" in quotation marks because it is indeed the fate of the concept *world* that is at issue. For what comes into view for humans at this moment is precisely the end of the world, brought about by the encroachment of hyperobjects, one of which is assuredly Earth itself, and its geological cycles demand a *geophilosophy* that doesn't think simply in terms of human events and human significance.

The end of the world is correlated with the Anthropocene, its global warming and subsequent drastic climate change, whose precise scope remains uncertain while its reality is verified beyond question. Throughout *Hyperobjects* I shall be

calling it *global warming* and not *climate change*. Why? Whatever the scientific and social reasons for the predominance of the term *climate change* over *global warming* for naming this particular hyperobject, the effect in social and political discourse is plain enough. There has been a decrease in appropriate levels of concern. Indeed, denialism is able to claim that using the term *climate change* is merely the rebranding of a fabrication, nay evidence of this fabrication in flagrante delicto. On the terrain of media and the sociopolitical realm, the phrase *climate change* has been such a failure that one is tempted to see the term itself as a kind of denial, a reaction to the radical trauma of unprecedented global warming. That the terms are presented as choices rather than as a package is a symptom of this failure, since logically it is correct to say "climate change as a result of global warming," where "climate change" is just a compression of a more detailed phrase, a metonymy.

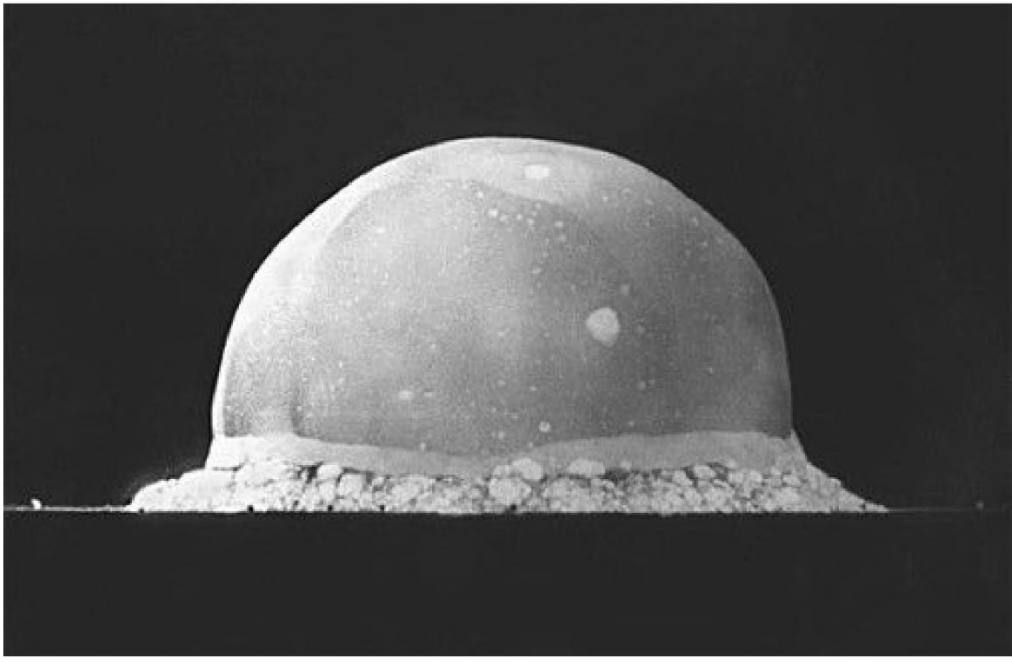

FIGURE 2. Trinity test at 0.016 seconds, July 16, 1945. For some time this picture was banned, since it was considered far more provocative than the habitual mushroom cloud. The tiny shapes on the horizon are trees. Los Alamos National Laboratory.

If this is not the case, then *climate change* as a *substitute* for *global warming* is like "cultural change" as a substitute for *Renaissance,* or "change in living conditions" as a substitute for *Holocaust. Climate change* as substitute enables cynical reason (both right wing and left) to say that the "climate has always been changing," which to my ears sounds like using "people have always been killing one another" as a fatuous reason not to control the sale of machine guns. What we desperately need is an appropriate level of shock and anxiety concerning a specific ecological trauma—indeed, *the* ecological trauma of our age, the very thing that defines the Anthropocene as such. This is why I shall be sticking with the phrase *global warming* in this book.

Numerous philosophical approaches have recently arisen as if in response to the daunting, indeed horrifying, coincidence of human history and terrestrial geology. *Speculative realism* is the umbrella term for a movement that comprises such scholars as Graham Harman, Jane Bennett, Quentin Meillassoux, Patricia Clough, Iain Hamilton Grant, Levi Bryant, Ian Bogost, Steven Shaviro, Reza Negarestani, Ray Brassier, and an emerging host of others such as Ben Woodard and Paul Ennis. All are determined to break the spell that descended on philosophy since the Romantic period. The spell is known as *correlationism,* the notion that philosophy can only talk within a narrow bandwidth, restricted to the human–world correlate: meaning is only possible between a human mind and what it thinks, its "objects," flimsy and tenuous as they are. The problem as correlationism sees it is, is the light on in the fridge when you close the door?

It's not quite idealism, but it could tend that way. But the problem goes back further than the Romantic period, all the way back to the beginning of the modern period. (Unlike Latour, I do believe that we have "been modern," and that this has had effects on human and nonhuman beings.)[13] The restriction of philosophy's bandwidth attempts to resolve a conundrum that has been obsessing European thinking since at least the uncritical inheritance by Descartes of the scholastic view of substances—that they are basic lumps decorated with accidents.[14] Despite his revolutionary rationalism—brilliantly deriving reality from his confidence in his (doubting) mental faculties—Descartes uncritically imported the very scholasticism his work undermined, imported it into the area that mattered most, the area of ontology. Since then, even to say the word *ontology* has been to say something with a whiff of scholasticism about it. Epistemology gradually took over: How can I know that there are (or are not) real things? What gives me (or denies me) access to the real? What defines the possibility of access? The possibility of possibility? These thoughts even affect

those who strove against the trend, such as Schelling and Heidegger, and the original phenomenologists, whose slogan was "To the things themselves!" Speculating outside of the human became a minor trend, exemplified by the marginalization of Alfred North Whitehead, who thanks to speculative realism has been enjoying a recent resurgence.

Speculative realism has a healthy impulse to break free of the correlationist circle, the small island of meaning to which philosophy has confined itself. It is as if, since the seventeenth century, thinking has been cowed by science. Yet science not only cries out for "interpretation"—and heaven knows some defenses of the humanities these days go as far as to argue that science needs the humanities for PR purposes. Beyond this, science doesn't necessarily know what it is about. For a neo-Darwinist, reality is mechanisms and algorithmic procedures. For a quantum physicist, things might be very different. Reality might indeed entail a form of correlationism: the Copenhagen Interpretation is just that. Or everything is made of mind.[15] So what is it? Which is it? Asleep at the switch, philosophy has allowed the default ontology to persist: there are things, which are basically featureless lumps, and these things have accidental properties, like cupcakes decorated with colored sprinkles.

This thinking—or the lack thereof—is not unrelated to the eventual manufacture, testing, and dropping of Little Boy and Fat Man. Epistemological panic is not unrelated to a sclerotic syndrome of "burying the world in nullity ... in order to prove it."[16] This thinking still continues, despite the fact that thought has already made it irrelevant. The thinking reaches the more than merely paradoxical idea that if I can evaporate it in an atomic energy flash, it must be real. The thinking is acted out daily in drilling, and now "fracking" for oil. The year 1900 or thereabouts witnessed a number of "prequels" to the realization of the Anthropocene and the coming of the Great Acceleration. These prequels occurred within human thinking itself, but it is only in retrospect that humans can fully appreciate them. Quantum theory, relativity theory, and phenomenology were all born then. Quantum theory blew a huge hole in the idea of particles as little Ping-Pong balls. Relativity theory destroyed the idea of consistent objects: things that are identical with themselves and constantly present all the way down. (Both theories will be discussed at length in later sections.) Extreme forms of realism in narrative began to set streams of consciousness free from the people who were having them, and the hand-holding benevolent narrator vanished. Monet began to allow colors and brushstrokes to liberate themselves from specific forms, and the water in which the water lilies floated, exhibited on the curving walls of the Orangerie, became the true subject

of his painting. Expressionism abolished the comforting aesthetic distances of Romanticism, causing disturbing, ugly beings to crowd towards the viewer.

What did the "discoveries of 1900" have in common? Water, quanta, spacetime began to be seen. They were autonomous entities that had all kinds of strange, unexpected properties. Even consciousness itself was no longer just a neutral medium: phenomenology made good on the major philosophical discovery of the Romantic period, the fact of consciousness that "has" a content of some kind.[17] Monet had started painting water lilies; or rather, he had started to paint the space in which water lilies float; or rather, he had started to paint the rippling, reflective object in which the lilies float—the water. Just as Einstein discovered a rippling, flowing spacetime, where previously objects had just floated in a void, Monet discovered the sensuous spaciousness of the canvas itself, just as later Tarkovsky was to discover the sensuous material of film stock. All this had been prefigured in the Romantic period with the development of blank verse narratives, meandering through autobiographical detours. Suddenly a whole lot more paper was involved.

Around 1900 Edmund Husserl discovered something strange about objects. No matter how many times you turned around a coin, you never saw the other side as the other side. The coin had a dark side that was seemingly irreducible. This irreducibility could easily apply to the ways in which another object, say a speck of dust, interacted with the coin. If you thought this through a little more, you saw that all objects were in some sense irreducibly withdrawn. Yet this made no sense, since we encounter them every waking moment. And this strange dark side applied equally to the "intentional objects" commonly known as thoughts, a weird confirmation of the Kantian gap between phenomenon and thing. Kant's own example of this gap is highly appropriate for a study of hyperobjects. Consider raindrops: you can feel them on your head—but you can't perceive the actual raindrop in itself.[18] You only ever perceive your particular, anthropomorphic translation of the raindrops. Isn't this similar to the rift between weather, which I can feel falling on my head, and global climate, not the older idea of local patterns of weather, but the entire system? I can think and compute climate in this sense, but I can't directly see or touch it. The gap between phenomenon and thing yawns open, disturbing my sense of presence and being in the world. But it is worse still than even that. Raindrops are raindroppy, not gumdroppy—more's the pity. Yet raindrop phenomena are not raindrop things. I cannot locate the gap between phenomenon and thing anywhere in my given, phenomenal, experiential, or indeed scientific space. Unfortunately raindrops don't come with little dotted lines on them and a little drawing of scissors saying

"cut here"—despite the insistence of philosophy from Plato up until Hume and Kant that there is some kind of dotted line somewhere on a thing, and that the job of a philosopher is to locate this dotted line and cut carefully. Because they so massively outscale us, hyperobjects have magnified this weirdness of things for our inspection: things are themselves, but we can't point to them directly.

Around 1900 Einstein discovered something strange about objects. The speed of light was constant, and this meant that objects couldn't be thought of as rigid, extended bodies that maintained their shape. Lorentz had noticed that electromagnetic waves shrank mysteriously, as if foreshortened, as they approached light speed. By the time you reach the end of a pencil with your following eyes, the other end has tapered off somewhere. If you put tiny clocks on your eyelids, they would tell a different time than the tiny clocks on your feet lying still beneath the table as you twirl the pencil in your fingers, the tiny clocks in each fingernail registering ever so slightly different times. Of course you wouldn't see this very clearly, but if you were moving close to the speed of light, objects would appear to become translucent and strangely compressed until they finally disappeared altogether. Spacetime appeared, rippling and curved like Monet's water lilies paintings. And there must then be regions of spacetime that are unavailable to my perception, even though they are thinkable: another strange confirmation of the Kantian gap between phenomenon and thing.

Around 1900 Max Planck discovered something strange about objects. If you tried to measure the energy in an enclosed object (like an oven) by summing all the waves, you reached absurd results that rocketed toward infinity above a certain temperature range: the blackbody radiation problem. But if you thought of the energy as distributed into packets, encapsulated in discrete quanta, you got the right result. This accuracy was bought at the terrible price of realizing the existence of a bizarre quantum world in which objects appeared to be smeared into one another, occupying indeterminate areas and capable of penetrating through seemingly solid walls. And this is yet another confirmation of the phenomenon–thing gap opened up by Kant, for the simple reason that to measure a quantum, you must fire some other quanta at it—to measure is to deflect, so that position and momentum are not measurable at the same time.

The Kantian gap between phenomenon and thing places the idea of substances decorated with accidents under extreme pressure. Drawing on the breakthroughs of the phenomenologist Husserl, Heidegger perhaps came closest to solving the problem. Heidegger realized that the cupcakes of substance and the sprinkles of accidence were products of an "objective presencing" that resulted from a confusion within (human) being, or *Dasein,* as he put it. Heidegger, however, is a correlationist who asserts that without Dasein, it makes no sense whatsoever to

talk of the truth of things, which for him implies their very existence: "Only as long as Dasein *is,* 'is there' *[gibt es]* being ... it can neither be said that beings *are,* nor that they are not."[19] How much more correlationist do you want? The refrigerator itself, let alone the light inside it, only exists when I am there to open the door. This isn't quite Berkeleyan *esse est percipi,* but it comes close. Heidegger is the one who from within correlationism descends to a magnificent depth. Yet he is unwilling to step outside the human–world correlation, and so for him idealism, not realism, holds the key to philosophy: "If the term idealism amounts to an understanding of the fact that being is never explicable by beings, but is always already the 'transcendental' for every being, then the sole correct possibility for a philosophical problematic lies in idealism."[20]

Heidegger had his own confusion, not the least of which is exemplified by his brush with Nazism, which is intimately related to his insight and blindness about being. Graham Harman, to whose object-oriented ontology I subscribe, discovered a gigantic coral reef of sparkling things beneath the Heideggerian U-boat. The U-boat was already traveling at a profound ontological depth, and any serious attempt to break through in philosophy must traverse these depths, or risk being stuck in the cupcake aisle of the ontological supermarket.

Harman achieved this discovery in two ways. The first way is simple flexibility. Harman was simply ready to drop the specialness of Dasein, its unique applicability to the human, in particular to German humans. This readiness is itself a symptom of the ecological era into which we have entered, the time of hyperobjects. To this effect, Harman was unwilling to concede Heidegger the point that the physical reality described in Newton's laws did not exist before Newton.[21] This line of Heidegger's thought is even more correlationist than Kant's. The second way in which Harman attacked the problem was by a thorough reading of the startling tool-analysis in the opening sections of Heidegger's *Being and Time.* This reading demonstrates that nothing in the "later" Heidegger, its plangency notwithstanding, topples the tool-analysis from the apex of Heidegger's thinking. Heidegger, in other words, was not quite conscious of the astonishing implications of the discovery he made in the tool-analysis: that when equipment—which for all intents and purposes could be anything at all—is functioning, or "executing" *(Vollzug)*, it withdraws from access *(Entzug)*; that it is only when a tool is broken that it seems to become present-at-hand *(vorhanden)*. This can only mean, argues Harman, that there is a vast plenum of unique entities, one of whose essential properties is *withdrawal*—no other entity can fully account for them. These entities must exist in a relatively *flat ontology* in which there is hardly any difference between a person and a pincushion. And

relationships between them, including causal ones, must be *vicarious* and hence *aesthetic* in nature.

If we are to take seriously the ontological difference between being and beings, argues Harman, then what this means is twofold:

(1) No realism is tenable that only bases its findings on "ontic" data that are pregiven. This would be like thinking with prepackaged concepts—it would not be like thinking at all.
(2) Idealism, however, is unworkable, since there exist real things whose core reality is withdrawn from access, even by themselves.

Point (1), incidentally, is the trouble with science. Despite the refreshing and necessary skepticism and ruthless doubt of science, scientific discoveries are necessarily based on a decision about what real things are.[22] Point (2) is the primary assertion of OOO, Harman's coral reef beneath the Heideggerian U-boat.

It will become increasingly clear as this book proceeds that hyper-objects are not simply mental (or otherwise ideal) constructs, but are real entities whose primordial reality is withdrawn from humans. Hyper-objects give us a platform for thinking what Harman calls *objects* in general. This introduction is not quite the right moment for a full explication of OOO. Outlining OOO might mean that we never got around to hyperobjects themselves. And, more significantly, the subtlety of OOO itself requires a thorough examination of hyperobjects. Moreover, it seems like good practice to start with the things at hand and feel our way forward—in this I join Lingis. Yet I trust that by the end of the book the reader will have a reasonable grasp of how one might use this powerful new philosophical approach for finding out real things about real things.

So, let's begin to think about hyperobjects in some depth. What is the most striking thing about their appearance in the human world? Naturally humans have been aware of enormous entities—some real, some imagined—for as long as they have existed. But this book is arguing that there is something quite special about the recently discovered entities, such as climate. These entities cause us to reflect on our very place on Earth and in the cosmos. Perhaps this is the most fundamental issue—hyperobjects seem to force something on us, something that affects some core ideas of what it means to exist, what Earth is, what society is.

What is special about hyperobjects? There's no doubt that cosmic phenomena such as meteors and blood-red Moons, tsunamis, tornadoes, and earthquakes have terrified humans in the past. Meteors and comets were known as *disasters.*

Literally, a disaster is a fallen, dysfunctional, or dangerous, or evil, star *(dis-astron)*. But such disasters take place against a stable background in at least two senses. There is the Ptolemaic–Aristotelian machinery of the spheres, which hold the fixed stars in place. This system was common to Christian, Muslim, and Jewish cosmology in the Middle Ages. To be a disaster, a "star" such as a meteor must deviate from this harmonious arrangement or celestial machinery. Meanwhile, back on Earth, the shooting star is a portent that makes sense as a trace on the relatively stable horizon of earth and sky. Perhaps the apocalypse will happen. But not just yet. Likewise, other cultures seemed to have relatively coherent ways of explaining catastrophes. In Japanese Shinto, a tsunami is the vengeance of a *Kami* who has been angered in some way.

It seems as if there is something about hyperobjects that is more deeply challenging than these "disasters." They are entities that become visible through post-Humean statistical causality—a causality that is actually *better* for realism than simply positing the existence of glass spheres on which the fixed stars rotate, to give one example. This point never fails to be lost on global warming deniers, who assert, rightly, that one can never directly prove the human causes of global warming, just as I never prove that this bullet you fire into my head will kill me. But the extreme statistical likelihood of anthropogenic global warming is better than simply asserting a causal factoid. Global warming denial is also in denial about what causality is after Hume and Kant—namely a feature of phenomena, rather than things in themselves.

What does this mean to nascent ecological awareness? It means that humans are not totally in charge of assigning significance and value to events that can be statistically measured. The worry is not whether the world will end, as in the old model of the *dis-astron,* but whether the end of the world is already happening, or whether perhaps *it might already have taken place.* A deep shuddering of temporality occurs. Furthermore, hyperobjects seem to continue what Sigmund Freud considered the great humiliation of the human following Copernicus and Darwin. Jacques Derrida rightly adds Freud to the list of humiliators—after all he displaces the human from the very center of psychic activity. But we might also add Marx, who displaces human social life with economic organization. And we could add Heidegger and Derrida himself, who in related though subtly different ways displace the human from the center of meaning-making. We might further expand the list by bringing in Nietzsche and his lineage, which now runs through Deleuze and Guattari to Brassier: "Who gave us the sponge to wipe away the entire horizon?" (Nietzsche).[23] And in a different vein, we might add that OOO radically displaces the human by insisting that my being is not everything it's

cracked up to be—or rather that the being of a paper cup is as profound as mine.

Is it that hyperobjects seem to push this work of humiliation to a yet more extreme limit? What is this limit? Copernicus, it is said, is all about displacement. This was first taken to mean an exhilarating jump into cognitive hyperspace. But what if the hyperobjects force us to forget even this exit strategy? What if hyperobjects finally force us to realize the truth of the word *humiliation* itself, which means being brought low, being brought down to earth? Hyperobjects, in effect, seem to push us into a double displacement. For now the possibility that we have loosed the shackles of the earthly to touch the face of the "human form divine" (Blake) seems like a wish fulfillment.[24] According to hyperobjects themselves, who seem to act a little bit like the gigantic boot at the end of the *Monty Python* credits, outer space is a figment of our imagination: *we are always inside an object.*

What we have then, before and up to the time of hyperobjects from the sixteenth century on, is the truth of Copernicanism, if we can call it that—there is no center and we don't inhabit it. Yet added to this is another twist: there is no edge! We can't jump out of the universe. Queen Mab can't take Ianthe out of her bed, put her in a spaceship, and whisk her to the edge of time to see everything perfectly (Percy Shelley's fantasy). Synthetic judgments a priori are made inside an object, not in some transcendental sphere of pure freedom. Quentin Meillassoux describes Kant's self-described Copernican turn a Ptolemaic counterrevolution, shutting knowing up in the finitude of the correlation between (human) subject and world.[25] But for me, it is the idea of a privileged transcendental sphere that constitutes the problem, not the finitude of the human–world correlation. Kant imagines that although we are limited in this way, our transcendental faculties are at least metaphorically floating in space beyond the edge of the universe, an argument to which Meillassoux himself cleaves in his assertion that reality is finally knowable exclusively by (human) subjectivity. And *that* is the problem, the problem called anthropocentrism.

It is Kant who shows, at the very inception of the Anthropocene, that things never coincide with their phenomena. All we need to do is extend this revolutionary insight beyond the human–world gap. Unlike Meillassoux, we are not going to try to bust through human finitude, but to place that finitude in a universe of trillions of finitudes, as many as there are things—because a thing just is a rift between what it is and how it appears, for any entity whatsoever, not simply for that special entity called the (human) subject. What ecological thought must do, then, is unground the human by forcing it back onto the ground, which is to say, standing on a gigantic object called *Earth* inside a gigantic entity called

biosphere. This grounding of Kant began in 1900. Phenomenology per se is what begins to bring Kantianism down to Earth, but it's hyperobjects and OOO that really convince me that it's impossible to escape the gravitational field of "sincerity," "ingenuousness," being-there.[26] Not because there is a *there*—we have already let go of that. Here I must part company with ecophenomenology, which insists on regressing to fantasies of embeddedness. No: we are not in the center of the universe, but we are not in the VIP box beyond the edge, either. To say the least, this is a profoundly disturbing realization. It is the true content of ecological awareness. Harman puts it this way:

> On the one hand, scientism insists that human consciousness is nothing special, and should be naturalized just like everything else. On the other hand, it also wants to preserve knowledge as a special kind of relation to the world quite different from the relations that raindrops and lizards have to the world... . For all their gloating over the fact that people are pieces of matter just like everything else, they also want to claim that the very status of that utterance is somehow special. For them, raindrops know nothing and lizards know very little, and some humans are more knowledgeable than others. This is only possible because thought is given a unique ability to negate and transcend immediate experience, which inanimate matter is never allowed to do in such theories, of course. In short, for all its *noir* claims that the human doesn't exist, it elevates the structure of human *thought* to the ontological pinnacle.[27]

The effect of this double denial of human supremacy is not unlike one of Hitchcock's signature cinematic techniques, the pull focus. By simultaneously zooming and pulling away, we appear to be in the same place, yet the place seems to distort beyond our control. The two contradictory motions don't cancel one another out. Rather, they reestablish the way we experience "here." The double denial doesn't do away with human experience. Rather, it drastically modifies it in a dizzying manner.

The ecological thought that thinks hyperobjects is not one in which individuals are embedded in a nebulous overarching system, or conversely, one in which something vaster than individuals extrudes itself into the temporary shapes of individuals. Hyperobjects provoke *irreductionist* thinking, that is, they present us