



Introducing the idea of 'hyperobjects'

A new way of understanding climate change and other phenomena.

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I'm an environmental philosopher. In 2008, I invented a word to describe all kinds of things that you can study and think about and compute, but that are not so easy to see directly: *hyperobjects*. Things like: not just a Styrofoam cup or two, but *all the Styrofoam on Earth, ever*. All that Styrofoam is going to last an awfully long time: 500 years, maybe. It's going to outlive me by a great extent. Will my family's descendants even be related to me in any kind of meaningful way by 2514? There is so much more Styrofoam on Earth right now than there is Timothy Morton.

So hyperobjects outlast me, and they out-scale me in the here and now. Let's think of another example. Not just this one speck of plutonium, but *all the plutonium we've made, ever*. That plutonium decays for 24,100 years before it's totally safe. That's an unimaginable time. I can just about wrap my head around 500 years when I think about Styrofoam. But 24,100 years? Yet I'm obliged to act with a view to the people, whoever they are, who are alive at that point. Who knows whether I would even recognize them as human? Maybe by then we will have merged with a whole host of extraterrestrials. I don't know. I'm like Donald Rumsfeld and his "unknown unknowns": There are things I don't know about the future, and I don't even know how much I don't know about it. But it's coming.

Plutonium is a problem. Humans made it, so we're pretty much responsible for it. Beyond that, I can understand what plutonium is — which seems like a pretty good reason for assuming responsibility for something. Suppose I see someone about to be hit by an oncoming car. I can understand that she's about to be killed, so I'm obliged to step in and save her. Hyperobjects are like that — like the Dust Bowl, for instance, or the colossal drought in California. We are obliged to do something about them, because we can think them.

That's good news if you care about mitigating the effects of global warming. (I refuse to call it *climate change*. The globe is literally warming because of greenhouse gases.) Thinking ecologically about global warming requires a kind of mental upgrade, to cope with something that is so big and so powerful that until now we had no real word for it. However, thinking of global warming as a hyperobject is really helpful. For starters, the concept of hyperobjects gives us a single word to describe something on the tips of our tongues. It's very difficult to talk about something you cannot see or touch, yet we are obliged to do so, since global warming affects us all.

I can't see it. I can't touch it. But I know it exists, and I know I'm part of it. I should care about it.

Many people have told me, "Oh, now I have a term for this thing I've been trying to grasp!" We can see, for instance, that global warming has the properties of a hyperobject. It is "viscous" — whatever I do, wherever I am, it sort of "sticks" to me. It is "nonlocal" — its effects are globally distributed through a huge tract of time. It forces me to experience time in an unusual way. It is "phased" — I only experience pieces of it at any one time. And it is "inter-objective" — it consists of all kinds of other entities but it isn't reducible to them.

If you can understand global warming, you have to do something about it. Forget about needing proof or needing to convince more people. Just stick to what's really super obvious. Can you understand hyperobjects? Then you are obliged to care about them.

So hyperobjects are massively distributed in time and space and we are obliged to care about them, even if we didn't manufacture them. Take the biosphere. I can't see it. I can't touch it. But I know it exists, and I know I'm part of it. I should care about it.

Or global warming. I can't see or touch it. What I can see and touch are these raindrops, this snow, that sunburn patch on the back of my neck. I can touch the weather. But I can't touch climate. So someone can declare: "See! It snowed in Boise, Idaho, this week. That means there's no global warming!" We can't directly see global warming, because it's not only really widespread and really really long-lasting (100,000 years); it's also super high-dimensional. It's not just 3-D. It's an incredibly complex entity that you have to map in what they call a high-dimensional- phase space: a space that plots all the states of a system.

In so doing, we are only following the strictures of modern science, laid down by David Hume and underwritten by Immanuel Kant. Science can't directly point to causes and effects: That would be metaphysical, equivalent to religious dogma. It can only see

correlations in data. This is because, argues Kant, there is a gap between what a thing is and how it appears (its “phenomena”) that can’t be reduced, no matter how hard we try. We can’t locate this gap anywhere on or inside a thing. It’s a *transcendental* gap. Hyperobjects force us to confront this truth of modern science and philosophy.

It’s like being inside the gigantic worm in *The Empire Strikes Back*. For a while, you can kid yourself that you’re not inside a gigantic worm, until it starts digesting you. Because the worm is “everywhere” in your field of vision, you can’t really tell the difference between it and the surface of the asteroid you think you landed on.

The person who denies there’s global warming because he can still touch snow is partying like it’s 1759. He’s partying like modern science never happened. Modern science happened largely because of Hume, a Scottish skeptical empiricist. In another life, Hume might have been the bass player for Pink Floyd, because he certainly could have written some of the group’s lyrics. “All you touch and all you see / Is all your life will ever be” — that’s basic Hume right there. You can’t know things directly; you can only know data. That’s the foundation of modern science. Cause and effect aren’t things that churn away underneath other things. They are inferences that we make about patterns we see in data.

Oddly enough, this makes modern science more accurate and honest than anything we’ve previously come up with. The thing is, statistical correlations are better than bald statements of fact that you just have to believe or face the consequences. (“The Earth is flat! God is this golden calf!”) It’s better to say that we’re 95 percent sure global warming was caused by humans than to shout, “It was caused by humans, dang it! Just believe me!” You have some actual data to go on, in the 95 percent case. Try rolling two 10-sided dice and coming up with the numbers from 96 to 100. (As a recovering Dungeons & Dragons player, I know what I’m talking about here.) It’s incredibly unlikely.

So hyperobjects are funny. On the one hand, we have all this incredible data about them. On the other hand, we can’t experience them directly. We’ve stumbled upon these huge things, like Han Solo and Princess Leia and the giant worm. So we need philosophy and art to help guide us, while the way we think about things gets upgraded.

Human beings are now going through this upgrade. The upgrade is called ecological awareness.

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