

# The Great Simplification

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[00:00:00] Good morning. There is gonna be increasingly too much news, for us to keep track of and for our nervous systems, to assimilate. I know that's the case for me. the things that I've been articulating about the global biophysical and social situation for the past decade plus, are no longer in the future, but are coalescing all around us if you're paying attention.

[00:00:29] this platform, The Great Simplification, has always been and always will be about what pathways and interventions might steer the long term stability of humanity in the biosphere away from the default path that we are currently on. So hot takes on this week. macro news will, never really be a priority for us because most of that is noisy Ritz on a grand systemic river flowing to the sea.

[00:01:00] But I think I'll periodically, like twice a month, is my current plan. Do short takes like today's, that offer wide boundary insights to items in the news.

[00:01:26] Okay. Before I start on recent news, I wanna start with a bit of context, because otherwise today's topics could feel kind of random. Silver, copper, Venezuela, Greenland. A UK report, by the government on biodiversity and, ecological risk and a polar vortex. In the normal news cycle. These would be, separate stories, but with a wide boundary frame.

[00:01:51] They are all surface ripples on the same pond, and I believe. As I've been speaking about for 20 some years, we are approaching what I would refer to as a biophysical phase shift in our culture and in the global economic system. Most of our lives and expectations sit inside a kind of a. Pyramid and at the top of the pyramid is the financial economy, prices and incentives and salaries and debt

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and markets, and the stories we tell ourselves about growth and economic opportunity.

[00:02:31] That layer is what most of us interact with every day. But it's become a map that we've confused for the terrain. 'cause underneath that top layer is the biophysical layer. Energy, materials, minerals, supply chain machines, and the human behavior, the biology that makes all of it cohere, biophysical economy, biology, and physics.

[00:02:58] This is the connective tissue of the financial economy above it. It is the part. That turns abstract prices into real goods and services, but below that. Is an even deeper and also more invisible to most of us. Layer the living biosphere, earth's life support systems, the soil, the water cycle, forest, oceans, and a stable climate backdrop for civilization.

[00:03:26] The quiet services that make the other layers possible, mostly delivered without invoices and mostly assumed by leaders and populations to remain free forever. For a long time, that top layer of the pyramid was in fact relatively small compared to the layers. Beneath it, there was room to expand. The underlying energy base was able to grow, quickly.

[00:03:52] The biosphere still looked. Inexhaustible to industrial civilization, at least in the way that we accounted for it. And in that world where most of our rules and institutions and regulations and expectations were born, it was easy to believe that financial layer could keep getting bigger without running into hard limits.

[00:04:13] It was an easy to build, a, grand society around that assumption. What has now changed is the relationship between claims and capacity. Or more accurately, more, people's recognition, of that change over time. The financial claims on reality have grown to match reality more closely, and in the last couple

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of decades, especially as the global Superorganism hit the turbocharge button, those claims begin to outpace what the biophysical layer energy, material minerals can actually support.

[00:04:52] And so we now have. A, forgive the adjective, grotesquely, misshapen pyramid. The top has swollen faster than the middle can support, and at the same time, the waste and the externalities not included in our system of fueling the whole thing, are eroding the ecological substrate underneath it. And when that happens, or rather when it becomes more widely recognized, it's happening, the system starts to behave.

[00:05:23] Differently. We get more volatility, more friction. We get more conflict over inputs that used to feel, boring and abundant. We get more attempts to convert physical resources into political leverage, and we also get more public awareness of these things, even if it arrives in confused forms. Something about that top layer is distorted without full recognition of its connection to the lower two layers of this pyramid. So this is why stories like I'm about to give an overview. Venezuela, Greenland, China, silver, copper are going to keep showing up. They're not the whole story, but they are signals that the underlying constraint layer is pushing up into the headline layer and then in smaller circles.

[00:06:18] Unfortunately, much smaller circles. you see documents like the United Kingdom, government's national security framing of bio biodiversity loss and ecosystem instability, and what that portends, those are signals that institutions, at least some of them, are beginning to treat biosphere risk as a first order variable as opposed to a, side issue.

[00:06:44] So when I say biophysical phase shift, I don't mean one dramatic event that happens on some single date. I mean a gradual transition where the old assumptions stop working reliably and the world becomes more materially and

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ecologically aware. Again, the map our culture has used starts to deform because the terrain is changing underneath it.

[00:07:09] This has not fully happened yet, but it's starting. Okay. With that backdrop and frame in mind, here is this episode, this inaugural episode of what I'll refer to as wide boundary news. Let's start with Japan. Japan is a useful segue here because it sits at the top of that pyramid. It's a country with few natural resources that is run on increasing its financial claims on reality for a long time.

[00:07:38] It's one of the cleanest real world examples of a financial system that has been held together for decades by low yields, converting natural resources into exportable tech, central bank interventions, and. Associated credibility and a shared belief that the plumbing will continue to work all at this top level of the biophysical pyramid, which I'll point out most financial participants think is the entire.

[00:08:06] Pyramid, this week, and today is January 28th. Japanese government bond yields have been pushing higher. The 10 year JGB is around 2.3%, the 30 years around 3.7%. And the 40 year bond, is pushing around 4%, in the last few days. Japan. Also, as we've mentioned, on Frank's in the past, carries one of the heaviest public debt loads in the world.

[00:08:35] the IMF puts general government gross debt around 227% of GDP. So when Japanese government bond yields start spiking as they are now, it matters not because Japan is about to blow up tomorrow, but because the entire modern system is built on the assumption that debt can be carried cheaply and continually rolled forward, smoothly, higher yields.

[00:09:02] Are gonna be biophysical gravity reasserting itself. 'cause they increase the cost of serving an already large stock of obligations. They pressure government budgets and they force investors to reprice risk across portfolios that

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were built for a much different interest rate regime. And then there's the currency layer, which is where the stress becomes visible to.

[00:09:26] Everyday people. The yen has been trading around mid one fifties per the dollar, and markets are openly speculating about intervention and policy trade-offs. just before I'm recording this, president Trump said he's not afraid of, a weaker dollar, so I don't know what's going on, there, but there are limits.

[00:09:47] If they lean too hard on easy money to keep borrowing costs contained, the currency's gonna plummet. But if they lean too hard on defending the currency, they'll have to tolerate higher yields, which will be very damaging, to at least their economy. Japan is not the only place facing this biophysical bind, but it is a global canary because it's been the archetype of long duration.

[00:10:11] Stability, not to mention the systemic leverage globally from all the financial players in the world using low Japanese interest rates as a sort of, hedge fund, ATM as I've long discussed, these past years, that sets up the next news item, because silver is one of the places where financial claims and physical constraints, can collide very fast.

[00:10:37] Okay. we had all time highs in silver this past week. spot silver, as of this recording is \$115 an ounce. A few months ago it was \$35 an ounce. Silver is variously a monetary metal, an industrial metal like in solar panels and missiles, a store of wealth. It's used in jewelry and such and much, much more.

[00:11:04] But one of the wide boundary observations I wanna make here, not just commenting on the price, but like oil and many other commodities, the amount of financial claims on these commodities sometimes vastly exceeds what's actually available sometimes by an order of magnitude or more. I recall that in 2020, oil futures went to negative \$30 briefly, because there were so many financial claims on the actual oil that they had to get out.

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[00:11:36] Just as a tiny example, there are now over 750 million ounces of open interest just in the March silver contract alone, just that one contract, which is almost double the amount of the actual silver in the Chicago Mercantile Exchange warehouse. so. The point here is periodically we homo sapiens, in aggregate create way too many financial claims with respect to the underlying reality.

[00:12:06] And the discovery of this biophysical layer of our reality pyramid is going to have some massive volatility and. Out of business hedge funds, and hopefully not a central bank as hedge fund, as a casualty. Because we are approaching a situation where all financial claims, paper digits, electrons cannot be supported by our biophysical reality.

[00:12:32] And this is ultimately what I refer to as bending, not breaking. When currencies, bonds and aggregate human behavior start to treat the middle layer of this pyramid as suddenly visible. Okay. Another point on silver, this chart, in a recent JP Morgan report that's a month old now shows that at \$80 silver, it's fully 30% of the cost of a solar panel meeting that at yesterday's \$115, it's 45 to 50% of the cost.

[00:13:05] Yes, there can be some material switching and efficiencies to combat this, but the point is that the entire system. The global economic system in all our expectations is connected and extrapolating financial forecast. Just using the top pyramid later results in a hundred percent renewables, net zero and other fantasies.

[00:13:28] Silver is just a tiny reminder that the energy transition is also a materials transition, and materials are not infinitely substitutable. Last point on Silver Setter is bu in a tight, globalized system, a shortage of any single critical input stops being an economic story and a financial one, and starts to become a security and a national story.

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[00:13:57] Think of all the conversations within governments, corporations, central banks, around this biophysical phase shift right now. The rising tide of growth, cheap energy and available credit had a much different game theory dynamic. Okay, in related news, not exactly this week's news, but I recently saw a presentation by Robert Friedland, who's a copper investor, and he said, we're consuming 30 million tons of copper a year.

[00:14:29] Only 4 million tons of which is recycled. That means to maintain 3% GDP growth with no further electrification, we have to mine the same amount of copper in the next 18 years as we mined in the last 10,000 years combined. This is without any new electrification, without data centers, without solar and wind and the greening of the world economy, you people have no idea whatsoever what we're facing.

[00:14:55] You are dreaming. Robert Re friedland. There's certainly some level of truth to that statement, but that's not what I wanna point out here. My wide boundary comment is a different one. I saw Friedland's video posted in multiple places in the last two weeks, and every single one of them led with something like a copper supercycle is coming and here's where to invest.

[00:15:23] I see. Comments like this, facts like this about copper, and not only copper, but that's not my first reaction. Instead, I think, that deflation, end of growth, societal restructuring cycle is coming. I. So my, point here is why is it that 99% of social media posts, are about how to buy silver or invest in copper ETFs and investment opportunities to make a buck because of this opportunity?

[00:15:55] Where are the conversations about how communities, regions. Our society is gonna respond when the next economic super cycle doesn't arrive. This is something that increasingly weighs on me, and you could argue why I continue this platform. Okay, very brief bullet points on Venezuela, which kind of happened during my surgery.

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[00:16:23] so after the US seized Maduro, the official narrative of course was drugs, but most people quickly read it as oil. and I think it was mostly about oil, but not in the way the media portrayed. Venezuela on the surface boasts the world's largest oil reserves, but it's heavy sulfurous oil that requires heavy processing and diluent to be transported, and it's expensive.

[00:16:53] So around, 15 to 20 years ago, Venezuela took the opportunity when oil was \$140 to increase their reported reserves, which are oil recovery at a price to nearly fourfold from under 80 billion barrels to nearly 300 billion barrels. Without any corresponding surge in discoveries or production. This was a statistical transformation, not a physical one.

[00:17:21] So there's far less oil available in Venezuela, at least now than most people think. Second point. We don't really want oil. We want the products that come from oil, which requires complicated and capital intensive refineries. Increasingly, US Oil is around 60% light tight oil from shale. It's lighter and lighter, and we cannot run our refineries without pairing it with heavy oil.

[00:17:49] So for sure if some increased part of Venezuelan heavy oil moves to Gulf Coast refineries is good for middle distillates, such as diesel heating, oil jet fuel, and asphalt, and being able to produce more. Middle distillates enables refineries to lower the price of gasoline. Why? The more products you get per barrel, the less pressure there is to make a profit from typically, primarily gasoline.

[00:18:16] Next wide boundary point about Venezuela. In my books and presentation, I've often referred to as the biophysical gauntlet, so the US administration and everyday people, I suppose, want low gas prices, but as we get to the lower quality tranches of fossil hydrocarbons. We actually need higher oil prices for companies to be profitable.

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[00:18:41] Last week, billionaire Harold Ham has announced he's stopping drilling in the shale plays because at \$60 they can't make a profit. So to me, the oil situation was always a net energy story. There is plenty of oil, sure, and too much for a livable biosphere, but each successive tranche becomes more expensive and delivers less to society.

[00:19:08] With a respect to Venezuela, would, Mackenzie says that break even costs for the key or an OCO belt, grades average over \$80 per barrel. And of course once oil gets back to \$80, those breakevens will probably be at a hundred or 120, which in my book I refer to as energetic remoteness, another wide boundary point, and.

[00:19:34] The important one, I think, is the link between Venezuela and China. So Venezuelan crude is only around four, four, 5% of China's total oil imports. But the bigger story is that roughly a quarter of China's crude has been coming from sanctioned suppliers that depend on shadow fleet logistics, Venezuelan, Russian, and Iranian oil.

[00:19:57] So in the grand geopolitical game, it makes this Venezuelan incursion. A lot about China, and indirectly the US dollar as a, petrodollar. 'cause the massive refinery complex in China needs a lot of heavy oil for asphalt jet fuel, diesel, and the like. And I understand they were getting this for pretty much zero 'cause they were getting the heavy crude as payment of interest on Venezuelan debt to China.

[00:20:29] So personally I see the Venezuela move as less about us wanting their oil as much as keeping away from China and reducing China's influence in this hemisphere. And commenting not on the news, but what might soon become news is the US Aircraft Group, a Abraham Lincoln, is moving to the Middle East and rumors are about Iran.

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[00:20:52] And when I see that, I see the wider game as China, as that's another huge chunk of Chinese oil imports. Lastly, about Venezuela, it also. Demonstrated bravado, if that's the right word, and sets precedents for, might makes right with respect to Greenland and other situations. So let me pivot briefly to Greenland and offer, not only a wide but a historical perspective.

[00:21:22] So there's been a lot of talk about Greenland recently and Davos between us and Danish leaders. Greenland on the surface is about strategic positioning, minerals, access to the Arctic. You've probably all seen the headlines. What's interesting is that Greenland shows up in an older political imagination as well.

[00:21:42] 'cause almost a hundred years ago during the Great Depression, a movement called Technocracy argued. Capitalism was failing and democracy was too slow to respond, and their claim was pretty simple. The problem with our nation was not insufficient effort or lack of morals, but actually improper governance, and they wanted to replace politicians and finance people with engineers and scientists, and run society as an integrated production system based on resource flows and energy efficiency.

[00:22:18] And the movement's most visible leader was a man named Howard Scott. and I think Elon Musk's grandfather was also involved in this movement. And for a brief window, technocracy Inc. Attracted huge attention. They had rallies and a radio show and uniforms and a serious following, and they even drew maps.

[00:22:43] those maps proposed a North American. Tech. Nate and I will note, the only humor in this, frankly, that this is quite different than a Minnesota Tech Nate, the North American net, na tech Nate is not a set of nations, but a functional operating zone that's organized around industry resources and defense.

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[00:23:07] And back then their map included the United States, Canada, Mexico, parts of Central America and the Caribbean and Greenland. In their view, national sovereignty was just some emotional artifact, and the continent should be managed as one single machine. And the technocrats proposed the system would eliminate money and replace it with energy certificates distributing purchasing power.

[00:23:36] Based on this, ate continents energy production and engineers would coordinate production through technical departments and like, Kane's around the same time, they promise shorter work weeks and a more rational distribution of goods. They also assumed that many social problems would shrink once the price system and political conflict were removed.

[00:24:02] Astute wide boundary viewers of The Great Simplification know that assumption hid a core flaw because even if we can measure the flows, someone would still have to choose the goals. We still have to decide what counts as optimal, more infrastructure, or more wilderness. More consumption or more flexibility and resilience.

[00:24:26] Those are value questions, and when you treat them as purely technical, then we're indirectly embedding politics inside the model and then boasting that the output is politically neutral and without real democratic correction. I think technocracy would just be hierarchy with better pr. So I don't know how many of you have heard of this movement.

[00:24:52] The movement faded after World War II and the post-war boom based on, you guessed it, the really steep part of the UPS slope of the carbon pulse when oil production was growing at 7% a year. A lot of that coming from the United States, but technocratic thinking has never disappeared. it reappears whenever people look at.

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[00:25:13] Messy institutions that conclude that smarter measurement and smarter managers can bypass conflict and deliver better outcomes. You can see it today in parts of Silicon Valley tech culture, in certain governance fantasies around AI and climate change, and in the recurring belief that the right experts should simply be empowered to steer.

[00:25:37] I think Greenland is a useful entry point 'cause it reminds us how often the world gets framed as a resource map and a control problem. And the wider boundary question here is probably not technocracy or democracy, but whether we can build coordination that matches the scale of our modern constraints while staying accountable to the people living inside the system and to the living world.

[00:26:02] The system depends on, and of course, it goes without saying Wide boundary does not mean easy answers, or even any answers. But that's some historical context about Greenland. yes, Greenland and many other places become more visible as we start to look at the middle and bottom layer of the biophysical pyramid.

[00:26:24] Okay, my last two wide boundary news points are about the environment. So I'm guessing a third to a half of you will now tune out. That's said tongue in cheek. but also honestly, and I'm gonna unpack why I said that in the future, frankly. Okay. A British government study, entitled Global Biodiversity Loss Ecosystem Collapse in National Security was released last week after a long delay.

[00:26:51] presumably, what I'm hearing for being too negative and scary. It was commissioned by a joint intelligence committee, which oversees, MI five and MI six, and the core reporting was that some ecosystems may soon cross thresholds after which degradation becomes. Self reinforcing positive feedback loops, even if humans then try to intervene.

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[00:27:17] and the report found that we need to treat ecosystem collapse as a strategic risk, not just as an environmental. Talking point, it was described in the report as a reasonable worst case scenario that many ecosystems around the world were so stressed that they could soon pass tipping points after which they would inexorably, degrade.

[00:27:42] Forests in Canada and Russia might pass a tipping point by 2030 as might glaciers in the Himalayas that, feed rivers on, which 2 billion people depended, the reports suggested and there was a lot on, food security and resulting. Boom in migration, apparently there were several versions of this and a Freedom of Information Act released some of the redacted details.

[00:28:09] an internal inversion also warned that collapsing ecosystems could motivate acts of Ecoterrorism in Britain, as well as drawing NATO into conflicts over remaining breadbaskets in Russia and Ukraine. And, it bears saying these are worst case pathways, not predictions. Governments do not commission intelligence assessments because they think the risk is purely academic.

[00:28:35] Based on emails and comments I've received, many people in my inner circle are shocked that this report didn't get more airplay and headlines in the past week, but with Venezuela silver. Iran, the ice border patrol situation in Minneapolis, Greenland, Davos, and the like. It's kind of a deep observation into the current psyche of our species.

[00:29:01] alas. Lastly, very briefly, the continental United States is currently under a deep freeze. A few days ago it was negative 25 Fahrenheit, where I live with wind chills approaching negative 50 at times like this, many people say global warming. What BS. But the globe at this time is warmer than historically.

[00:29:24] It just means somewhere else in the world is warmer and that place happens to be the Arctic. shown in this graph, a warming world does not cancel

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winter. It just changes the distribution and increases the odds of weirdness. Okay, so if I had to tile this together. It's this, the biophysical blinders are coming off the global human economy, not because people suddenly became wiser, but because constraints are pushing upward through the layers.

[00:30:00] Finance can and did stretch reality for a while, and politics can in turn delay recognition for a while, but neither can repeal energy costs, material limits, or ecological feedbacks. This is what I mean by a biophysical phase shift. More stories in the news this year are gonna look like one-offs. More weeks are gonna feel chaotic like this one, but the developing patterns underneath.

[00:30:28] Will be consistent. Real resources will matter More. Supply chains internationally will matter more. Stable ecosystems will matter more. And institutions, the capacity to coordinate at scale without tearing ourselves apart with wars and violence will matter most of all. So my point of doing a periodic wide boundary news is not to chase the headlines, it's to use the headlines.

[00:30:54] As a signal to explain the lower layers of our reality and to keep the actual terrain in view. Notice what is bending, notice what is breaking, and importantly, where the leverage points still are, which is gonna be the focus of my work in 2026. 'cause the future is definitely not guaranteed. To be the default path is something we have to keep understanding, changing.

[00:31:20] And contributing to not something we've already finished building. Much more to say. Almost too much to say. See you next week.