

The Great Simplification Animated Movie Transcript Part 2:

Energy is and always will be the currency of life. Animals were the first investors. Obtaining a larger energy surplus gives an animal a competitive advantage for survival and reproduction.

This role of surplus energy is a core driver of the natural world and dictates what can and can't happen.

We rarely think about it or talk about it, but we are all alive during the carbon pulse - the few hundred years where humans are drawing down Earth's energy battery millions of times faster than it was trickle charged by daily photosynthesis. Fossil hydrocarbons - at a vast scale - have enormously increased the surplus energy available to human economies.

Pulses - by definition - don't last forever. High quality ores and energy deposits are now mostly things of the past. Plenty remains, but it's of lower quality, and both more costly and ecologically destructive to extract.

In nature, there are countless examples where energy exists, but the effort to obtain it is so large that the meal is effectively off the menu. In our lifetimes, society will have to redirect increasing amounts of our energy surplus towards obtaining the surplus itself, leaving less affordable energy to support many of our current economic activities. One day - the energy it will cost to extract energy will be so large it won't make sense to do so even though resources remain. Energy depletion will act as a growing tax on human societies.

In this unprecedented era of large surplus, we have excelled at combining energy and materials into technology and inventions that improve the human experience. New technology can allow us to use resources more efficiently, or it can transform natural flows into energy, but mostly technology just creates new ways for humans to consume-- and builds higher future requirements for energy and materials.

Things that are more complex require more energy. When we add nodes to a supply chain, each connection requires energy to maintain. The complexity of our globally interconnected system currently requires the equivalent of 170 billion light bulbs constantly turned on, burning brightly, powered by the carbon pulse.

Even rebuildable technology that harnesses the sun and the wind grows our total consumption and has not yet reduced the use of carbon energy globally.

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Most people believe that money is real wealth. Yet, everything we spend money on requires energy to mine, create, deliver, run, maintain, and dispose of. In this way, money is ultimately a direct claim on energy and resources.

Our economic stories assert that with more money we can create more of anything. The truth is we cannot create energy. We both extract and burn it faster by using technology and printing money.

Natural capital - particularly energy - is the true foundation of our monetary systems. As we create more money we don't create more resources, we merely access them faster.

The highest sustained growth rate of human economies ever before and likely ever again peaked 50 years ago when oil production growth was at its highest. But rather than living within our means, we found creative ways to extend growth for a while longer.

We created complex supply chains - outsourcing the heavy lifting to countries with cheaper labor.

We turned to debt in a large way to maintain high levels of consumption - a behavior that accelerated in 2008 and has gone into overdrive since 2020. Debt allows us to spend resources from the future and call it economic growth. This phenomenon has become so pervasive in the last 50 years that we think it's normal to consume today and pay tomorrow.

The developed world is now using debt to enable the extraction of things we couldn't otherwise afford to extract to produce things we otherwise couldn't afford to consume. This strategy has an expiration date- because all this new money will one day be spent on real things requiring energy.

Enabled by an extraordinary but temporary energy surplus, the human economy is now over 1000x bigger than it was just five centuries ago. Most of the benefits of this one time geological surplus now flow to a fraction of people, not to the rest of living humans, nor future generations.

As we extract minerals and burn fossil carbon to support modern living standards, their waste streams are in turn diminishing the life support systems of other species and future beings. The impact of our global energy metabolism on nature has been tragic, and is now accelerating - resulting in among other things - animal, bird and fish populations dropping by 50% since the 1970s, plastic now weighing more than all animals on land and in the sea, and a child born today-being-expected to outlive Earth's coral reefs.

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As a culture, we have recently but almost entirely financialized the human experience. Not only have we parsed the rich fabric of human life into a single monetary marker, but in doing so we've used the wrong prices.

The price of money is wrong because we grow it with a keystroke with no tether to finite natural capital.

The price of energy is wrong - because we don't treat it as the extraordinary irreplaceable resource it is - non-renewable on any human time scale. And in setting prices on everything, we've lost sight of the large costs their use has on Earth's ecosystems.

This biophysical story is all connected in an emergent -and unexpected way. As the carbon pulse boosted our economies - our institutions and governments self-organized around expectations of growth.

Now, ~8 billion members of a social species collectively seek 'profits', which are linked to energy, which is linked to fossil hydrocarbons and minerals. Growth-as measured by increases in GDP, is now required for stability. We have arrived at a place where we as a culture have outsourced our decisions and planning to the financial system. The market's compulsion to grow now outcompetes any alternative paths of wisdom or constraint.

The system is no longer in anyone's control. The human species - at least to this point - has become a mindless, insatiable, energy hungry superorganism.