

The Great Simplification

[00:00:00] **Nate Hagens:** Today, I'm very pleased to welcome back Indy Johar to the program for an exploration on how we might rebuild and adapt our land, our institutions, and our capital markets to expand the number of better possible futures for humanity, or as he calls it, civilizational optionality. Indy Johar is an architect and co-founder of Project 00.

[00:00:25] He is also a professor at RMIT University, as well as a non-executive director of WikiHouse Foundation and Bloxhub. Most recently, Indy founded Dark Matter Labs, a field laboratory focused on building the institutional infrastructure for radical civic societies, cities, regions, and towns. This was one of the best conversations I have had on this platform.

[00:00:55] it was in New York City during Climate Week. I was exhausted, going into this interview, but something about Indy's energy and his ideas, pulled the best out of me, and perhaps that created, some two-way synergy. We talked about the importance of financial markets, seeing the dead-end aspects of our current path, and about humanity becoming self-aware and about our moment in history.

[00:01:24] When I talk about emergence, this conversation is an example of that. I do expect it's, for some, gonna be pretty academic and, fancy concepts, but the implications of what we talked about here, in my opinion, are one of the few pathways forward for humanity and the biosphere. What a great dude.

[00:01:47] Please welcome Indy Johar.

[00:01:55] Indy Johar, namaste. Welcome back

[00:01:59] **Indy Johar:** Thank you for the call, so wonderful. Delighted to be here

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[00:02:02] **Nate Hagens:** At the end of our last conversation, and I think we've had a Zoom call, you told me that the biggest central question of our time is what does it mean to be human? there's no greater question now. What does it mean to be human at this time?

[00:02:18] We kind of left off there, and I'm wondering what you've reflected on and where you've arrived with that question

[00:02:25] **Indy Johar:** Perfect. Let's start with the simple questions, I think. I think that question for me is a, systemic knot in actually I think the worlds that you and I and many others talk about.

[00:02:38] So at a kind of philosophical level, I think our subject-object separation from the world and our distancing, our birth of perspective, our birth of, object and noun-orientated worldviews, our separation, which gave birth to many things, science and art separating, chemistry, the kind of atomization of the worldview. Actually, it's also the part which allows that distancing for it to be dominion, for separation to turn into dominion, for separation to turn into externality.

[00:03:12] I think we're living at the apex of that problem as how we understand ourselves. So that's kind of why it's called the deep problem of the future of being human. Then there is a narrow problem of the future of being human. So if you take that logic chain and you marry that with effectively, I think what we're about to see is the disruption of two key aspects of being human, humans as units of labor and humans as units of cognition.

[00:03:38] Those two disruptions, when you marry those with an atomized, individuated self, and I think those two disruptions from the economy as it's currently framed, the commodity theory of being human in terms of cognition and in terms of labor, I think we enter a systemic crisis, a crisis which start-- where the economy starts to, export people and de-, expunge them from itself.

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[00:04:07] and in that process, as humans become, in our current unitized labor form, become outside the economy, I think we'll create the pathway of war. Now, I think my biggest change has been that I used to think that the disruption of, say, climate breakdown, which I think is going to be significant, would be in advance this.

[00:04:33] I think we're looking at a 2028, 2029 disruption where these crises come into apex, and that will lay out the pathway for effectively conflict within nations as nations start to remove people from themselves to pre-preserve the kind of economics of the nation, and in that process set up the pathway to war.

[00:04:55] And I think the war scenario and the conflict scenario cascades us into, in my view, a non-retrievable position because I think once we enter significant war where trauma is introduced into the, into society at such scale And the unit cost of war is, has reduced to such small components when actually someone with-- someone who's been psychologically traumatized is basically 129 IQ points, has CRISPR technology, has the capacity to do things w- of a horrific scale that we've never imagined.

[00:05:29] At that intersection, we're in trouble. So in a weird way, one of the things that's happened over the last time we spoke is that apex problem, I think is now absolutely the nail problem, where it sits at the kind of psychological basis and the fundamental basis of our landscape of externalization, but it also now sits at a fundamental basis where we are going to create that crisis.

[00:05:53] Now, what I think that means is that there's a massive systemic opportunity in how we redefine the future of being human. We need frontier labs and the future of being human as a key anchor point, both to give capacity to redefine that future and to reimagine that future, but also to give a North Star in that transition.

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[00:06:14] **Nate Hagens:** I have so many questions because you've just summarized and distilled how I'm actually thinking about this in better words, and a better accent. But let me stay here– Yeah ... just for a moment before we get into the civilizational financial risk. Yeah. What does it mean to be human? How is that question different than what does it mean to be humanity?

[00:06:36] Because you talked about the cognitive and the labor, like is there a third option that humans could be units of regeneration? And I've been very focused recently on distinguishing betw– between the individual human and our attributes and how the emergent property is of billions of us acting together.

[00:06:57] So is there... Would you give a distinction to those two questions?

[00:07:00] **Indy Johar:** Yeah. So I think there's m– there's multiple trajectories, and they are all important. I-- Weirdly enough, this is where I think where I've ended up, is the idea of consciousness, the act of being conscious, actually might be a fundamental component beyond cognition and, labor.

[00:07:25] And I think that space does both things. It effectively invites an idea of entanglement As well as dealing with a fundamentally different way of seeing the world. And I would argue that there is, you know, it's people like Roger Penrose and what, he has been saying. I think there's a whole space there.

[00:07:54] Now, I wanna leave it as space because I... everything I'll say will be far too conjectured and far too easy to, dismantle at this moment in time, I would argue. But I think there's something absolutely critical there. When I say that, let's put that in reference to the quantum of money that's going after AI.

[00:08:19] And there's a reason for this, I think. I think the capital that is making claims on AI is not make... it's justified by the disruption of labor, and I use the word justified, but it's not the search. I would argue that the capital that's hunting

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at the I- at the center of AGI or recursive intelligence is hunting, and I'm gonna use a sort of, a language, sort of touching a mirror of God.

[00:08:52] Touching the mirror of God. Now, the reason why I use this is I would say that large language models and the transformers are, what they're doing is they're taking fragments of consciousnesses metamorphosized, abstracted into n- into language, and language itself is an abstraction of that consciousnesses.

[00:09:14] That is then being computed to the point of constructing a manifold, a geome- sort of a higher dimensional manifold space. That manifold space is what the, search is for. And from my understanding is multiple models are reaching and forming at the same geometric sh-shape. And that, I would argue, is a kind of a higher dimensional cognition space.

[00:09:42] I use the word God entirely to be evocative, but you could, interpose other things. It's some civilizational emergent consciousness behavior that we don't know. I leave that open to us, but I use it largely for the ev- the evocative power. And I think the best example is that is what the search is for.

[00:10:04] It reminds me, and the best example I've heard is it's a moment of s- allocating capital in alchemy. In the middle centuries, in the middle, Middle Ages, the search, the allocation of capital that went into alchemy gave birth to chemistry. Money is not moving in the old commodity theory of value.

[00:10:26] It is moving in a completely different theory of where value lies. And why I say that is that if you put that into counter-counterposition with w-what is a frontier lab on, human consciousness, and not just human, more than human conscious-consciousness of things, I think there's a whole world that starts to emerge.

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[00:10:46] What I'm saying with you here, Nate, is like at the edges of my knowledge, but I think The reason why I'm saying them is because I think they're existentially critical now. 'Cause if we don't make some of these moves, we're, about to displace ourselves in partial cognition and partial awareness of what we're displacing.

[00:11:05] And I think then to round on your point, which I think is phenomenally important, which is the 1968 picture, and I-- sort of of an astronaut taking a picture of the Earth was not an astronaut taking a picture of the Earth. In the long arc of planetary becomings, that was the planet becoming self-aware.

[00:11:29] **Nate Hagens:** Okay.

[00:11:30] **Indy Johar:** It was able to perceive itself. James Lovelock put this line down, and I think so... I think that is an extraordinary thing if you think about it through that lens. So when you marry these three things together, you start to see a completely different arc of what is possible. And I think part of the problem is that our theory of machines and our theory of machines is, rooted in such low-fidelity industrial ideas, and they're rooted in the objectness of being human, and so the objectness and certainty of the systems as well.

[00:12:03] So there's something... There's a, there is a very emergent critical deep code issue right now somewhere here, and I'm saying this with deep invitation for people way smarter than me to actually start filling in the holes. But I think this is critical and civilizationally critical.

[00:12:19] **Nate Hagens:** If we're not directing money towards a theory of commodity value, but we are kind of headed in this direction of the mirror of God, it's also headed in the direction of there be dragons, because there's a lot of risk and unknowns there, and it's like all the money in the world is based on our GDP

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as our goal and more stuff and abundance, and it's, heading off a cliff in many ways.

[00:12:48] and so there is a lot of hyperintelligence as an aggregation in the markets, and there's also the madness of crowds and the delusion of where we're headed. can you speak to that for a second?

[00:13:03] **Indy Johar:** So civilization in this round, twelve thousand years was largely a function of a climatic predictable period.

[00:13:14] **Nate Hagens:** Mm-hmm.

[00:13:15] **Indy Johar:** The predictability thereby gave us the institutional frameworks of operating in knowledge systems of prediction. Our whole institutional framework has been built. Farming is just the byproduct of an institutional framework built on predictability. Our civilization has been built on this theory.

[00:13:38] The challenge we're facing is we are, I think, on the macro level, moving outside those zones of predictability at the climatic sense, but also we're now fundamentally moving outside, the predictability in terms of our demographics, our energy supply. All of this infrastructure is now winding into a period of systemic volatility.

[00:14:04] **Nate Hagens:** So our, entire financial system, our institutions, our expectations, our prices, our incentives were based on an unbelievably stable period of history, both ecologically, because we have more energy every single year, that's been stable as well.

[00:14:19] **Indy Johar:** And demographics.

[00:14:20] **Nate Hagens:** And demographics as well.

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[00:14:21] **Indy Johar:** I would argue that most of our financial accrual of wealth has been built on that predictability and the exploitation of that predictability.

[00:14:31] And so the problem is that all of our theories of alpha, they don't exist. L- you know, I think they've already gone, we just don't know it. And so when I sit in rooms and people talk about product replacements, replacing one thing with another, and I'm like, "Well, what I don't yet understand is if we have a major labor cognition collapse, we don't necessarily have the value of the labor distribution in the economy, so the demand collapses simultaneously very quickly and violence kicks off."

[00:15:03] So all these predictions of copper and the need for copper, really? Is that how the cycle works? And, again, my number one thing is I'm-- we're literally working on how these systems m- couple and model together, 'cause they're not linearly... They're not linear predictable systems, and all the projections I see are linear separated systems.

[00:15:23] Whereas what we're seeing is these systems are now starting to couple in ways that were unforeseen. The volatility is not only coupling, but it's also feed backing on itself. So all the worldview as you look out into it, and if you're a capital allocator I- if you're not seeing this, and I challenge anyone to build their own worldview on this, build your own worldview, but if you're not seeing this, I don't know how fiduciary duty is being fulfilled

[00:15:52] **Nate Hagens:** How many are, seeing it or even suspecting it?

[00:15:56] **Indy Johar:** privately individuals are. I think the, the challenge is, and this is where I think family officers have a strategic advantage 'cause they're unencumbered capital. Coded capital, I think is the, is, unfortunately the worst position- Well, well I don't

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[00:16:08] **Nate Hagens:** know what that means ...

[00:16:09] **Indy Johar:** funds, pre-structured funds.

[00:16:10] Okay Funds which have a particular remit. The capital has been coded probably five years in advance or— Okay ... 20 years in advance, so it cannot be able to be a— ag— agile. I think all the theories of market-based returns, markets which, backward-facing worldview, all of these norms that we've been relying on, the fundamentals we've been relying on in the financial system are becoming fragile or non-real, and that really opens up a really much more difficult question.

[00:16:37] So it requires what I'd call genuine thinkers, genuine first principle thinkers to engage this problem space. And I think there's a completely different world, emerging in that. And I... What I find problematic is people are trying to see this stuff in separation. They're trying to see it... You know, I was yesterday in a private equity room and somebody was talking about copper demand, and I was like, "Okay, just tell me what, where your underlyings are coming from," 'cause I don't...

[00:17:03] I think we collapse the demand at a much more different level, and that changes the dynamics of the whole system 'cause we may go to war. The war may create the copper demand, but it won't be the traditional consumer supply.

[00:17:15] **Nate Hagens:** Let me double-click on something you said before. You mentioned, alpha, and I think there's two aspects of that I'm curious about.

[00:17:21] One is

[00:17:25] To a planet that is only recently becoming self-aware, what is the alpha that we should be measuring? That's one question. And second, the narrow boundary alpha that we're currently optimizing for, if you take the future and

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condense it to today in a net present value of all these different coupled scenarios, as you say, it doesn't make sense to the, alpha that people expect based on the historical stability.

[00:17:58] So I recently had a French biologist on, Olivia Hamant, who said humanity is leaving the era of the mean and headed into the era of the standard deviation, which rhymes with what you're saying. So can you unpack this for people who have financial acumen and are thinking about the world in a historically linear way that what's happened in the past is gonna continue to happen in the future, only shinier?

[00:18:26] Break, break this down, and how does this apply to your current work?

[00:18:30] **Indy Johar:** I think the first dimension of that conversation is just biophysical reality. I think my biggest worry is there's a kind of lack of comprehension of actually the scale of the biophysical degradation we're in the middle of. So if you had Sir David King in the room, he would turn around very cleanly and say, "Well, look, we've already pumped up enough carbon in the air to effectively be in a situation where we're going to have to stabilize the Arctic.

[00:18:57] And if we don't, we have four and a half meters rise of sea level." So in that scenario, just the residential value of London, there are 3.8 million residential apartments and homes. Average price is 668,000 pounds. That's 2.52 trillion just in London alone. So the first things that I think people are misunderstandings is we're no longer in minor impairments and adjustments.

[00:19:27] **Nate Hagens:** Yeah.

[00:19:28] **Indy Johar:** Right? So it's not that future. We've already leapfrogged that. Second thing, we're working, in one bioregion in, ne- in northern Spain. What you start to realize is that we've got a regressive coupling of systems

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starting to happen, where runaway, monocultural forests, which were used for charco- for charcoal production, have now dried the soil to the point where the soil and the mycelium has died.

[00:20:01] It's a monoculture effectively. the fauna has been killed off by hunting and other game, theory, games And built on that, what you've got now is the white clouds that used to come from the Mediterranean, because the forests aren't releasing moisture, are rising above and sailing past. So that landscape is now in a self-drying environment.

[00:20:26] When it does rain in winter, it does, the ground is so compacted, so it flushes away all the nutrients. Because the fauna isn't coming into that environment, the micronutrients aren't coming, so you've got a collapse of effectively the my-mycelium infrastructure and the nutrient base. The depopulation means that people don't care because people aren't embedded in the environment, and the demographics to care aren't there.

[00:20:51] When you start coupling these systems as they're now coupling regressively, we are now in a moment of bioregional regime shifts of desertification and abandonment in parts of the system because these systems are rever- are, coupling in this way. So I think the number one thing I'm finding is that-- is our knowledge is single systems orientated.

[00:21:11] It's not system coupled effects. And that I think means that if you're not aware of the coupling risks, you're not, cognizant as to what, that does. You know, land value is now one thousand five hundred per hectare in that environment. The total liabilities of fire and other things are twenty thousand.

[00:21:31] So the economics is collapsing fundamentally as we see it And those are just two scenarios that start to see. And then, you know, you know, food systems collapse in terms of actually we're about to see a major event now

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probably between end of two thousand and twenty-six and twenty-seven, driven by super El Niño effect and the Straits of Hormuz, and those two environments are gonna collide in terms of a nutrition risk.

[00:21:58] Yeah. The problem is not just nutrition. The problem is the pass-through, where inequality as these... As you get these moments, what you'll see is a whiplash effect, and the whiplash effect on price will mean inequality will shoot up. 'Cause it's not about uneven distribution, it's what this does to systems, and systems operate in a-- and financial systems will accelerate that.

[00:22:19] That whiplash ef- effect will massively drive inequality. That inequality will make the social contract fragile and weaponizable. Note, the m- end point is the weaponizability of that fragile social contract, which means the incentives for war and conflict massively accelerate in a resource-constrained environment.

[00:22:37] That as a finance, as an investor, we need to start to see what that's looking like.

[00:22:42] **Nate Hagens:** Well, let me play devil's advocate. AI's gonna solve all this, Indy.

[00:22:48] **Indy Johar:** I want to think through that lens with you, right? So you know when Eric Schmidt turned around and said, "We're gonna s- we're gonna solve for AGI, and then we're gonna deal with climate change," and all the left laughed.

[00:23:01] And they were like, "What are you joking? Yo, what are you... You idiot." For a moment, let's just reverse engineer what he was saying. This is how I think he was saying it. He was saying it on the basis that whoever gets recursive intelligence will have the pathway of holding freedom.

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[00:23:20] **Nate Hagens:** the choice of holding freedom.

[00:23:22] Yeah. The- Whether they choose it or not is

[00:23:23] **Indy Johar:** another question ... is a different matter, right? But whoever gets it will have the choice of freedom. So it is an existential idea to the idea of, an agent, let's say, if you have the capacity to reach for it. If you then root AGI on that basis and you start valuing it on the disruption of labor, you start to say very quickly, "Well, we need to remove X million people from a society to preserve the social contract and stability long enough because they become surplus to the labor utility."

[00:24:06] If you then couple that with the energy demand that it drives... So in our societies, we have flat demographics or declining demographics, which means-- and historically energy demand was falling. What this does is drive a super cycle of energy demand, which brings unprecedented investment into energy innovation that has been missing for perhaps 20 years.

[00:24:31] If you bring energy, unit cost of energy down to near zero, that's the conjecture, and you, have good reasons for why that's not possible, but let's look at it. If you can bring it down to near zero, you can do desalination and you can do carbon sequestration because carbon sequestration is a one-to-one function of energy, as is desalination.

[00:24:53] If that's clear, then you can do nutrition because vertical farming is directly a function of energy. So if you look at that civilizational stack, and I particularly name it as a civilizational stack, as a worldview, you've got a disruption of labor, you've got compute and automation driving a super cycle of energy to drive unprecedented investment in energy to drive desalination and decarbonization.

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[00:25:19] At the same time, whichever agent gets that stack has been simultaneously benefiting from the volatility of the world as it's creating hyper stability through that power base. I say this because, not obviously 'cause I don't agree with this, that's not, my objective 'cause I also believe that the intelligence that's built by AI is a, mirror, and we're missing the fact that it's a rarefied mirror through abstraction, through language, which means it's not as advanced as conscious, actual human consciousness.

[00:25:51] It's a

[00:25:51] **Nate Hagens:** partial mirror–

[00:25:52] **Indy Johar:** Exactly ...

[00:25:52] **Nate Hagens:** that's leaning in on the left brain narrow boundary aspect of our phenotype.

[00:25:57] **Indy Johar:** Precisely. Exactly. And this is why I think a civilization entirely based on that logic will become problematic. But if you see, I... The only reason I wanna name this stack is 'cause I wanna name it for us to be able to understand what the scale of the play is.

[00:26:14] **Nate Hagens:** Yeah.

[00:26:14] **Indy Johar:** Right? What are the other strategies and how those other strategies are actually allocating capital and orchestrating forces? 'Cause I find that my problem is that when I sit in rooms There isn't the comprehension of what the scale of the civilizational play is, let alone then building the counter positions to say what are those counter positions and what are the other adjacent positions that are critical to that cascade that's being designed?

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[00:26:45] And, it's not being designed in the traditional way, by the way. I don't think somebody has a, notebook, has written a strategy down. I think what this is an emergent function of actors that are entangled in a shared future with a cascade emergent intelligence f-form that is self-realizing now

[00:27:02] **Nate Hagens:** Thank you for, unpacking it that way because when I've started to do that logical chain that you just did, it's just filled with so many asterisks that I kind of give up, but I understand.

[00:27:15] So, so there are a lot of humans, powerful humans that believe in the story that you just said.

[00:27:21] **Indy Johar:** Yeah.

[00:27:22] **Nate Hagens:** Probably way more than people that are having this conversation.

[00:27:26] **Indy Johar:** I think they believe it. They also believe it, it fulfills a narrative like, you know, the Earth is, only, capable of supporting a billion people.

[00:27:35] Memes like this, this fulfills the narrative for those memes. I want to take a point to just destroy those memes because they are really bad viruses in our cognitive thought. One, it's very clear that a billion people... The problem isn't 7.5 billion people, it's a billion people, and it's probably people like me who live the way I do, right?

[00:27:57] So it's-- so we create most of the externalities to which actually we own problems with. Second- We

[00:28:03] **Nate Hagens:** Westerners.

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[00:28:03] **Indy Johar:** Yeah. Yeah. Westerners, right? me, the lifestyles I lead. Yeah. And I don't think it's just Western, so, because I think there's equally problematic living in India, similar formats. Yeah. It's the lifestyles to which we live.

[00:28:13] Right,

[00:28:14] **Nate Hagens:** right, right.

[00:28:14] **Indy Johar:** Second, it's very clear my big worry, and I said this earlier, is that if we were to create an environment where 7.5 billion people were lost, the trauma that it would set up, I'm not sure we would ever stop the violence because of the conflict that would be set up. Three, I think actually we're missing the point.

[00:28:38] In the long arc of the system, the Earth has ex- stored vast amounts of hydro- hydrocarbons, expended those hydrocarbons in giving birth to 8.5 billion human consciousnesses with machine consciousness, with non-human consciousness as a system. That is the prize. The prize that we've in this moment of is an extraordinary moment of expansion of advanced conscious planet.

[00:29:10] And then I think this opens up a whole different... So if you look at these three scenarios, the prize... And when people often talk about long-termism and the c- and the continuity of civilization, and they've reduced long-termism to our, of civilization to the production of microchips or the production of books, the key artifacts of a civilization and its continuity, I think they miss what the real prize is.

[00:29:37] The prize was not those. The prize was the capabilities that we've built, and if you were to expand the optionality that it opens up, if we're able to self-reflect in our own awareness to transmogrify ourselves into a new civilizational play, I think that's the real prize on the table, and I think we're optimizing for lower order prizes.

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[00:29:56] **Nate Hagens:** So here's a trippy thought.

[00:29:59] **Indy Johar:** Go on.

[00:30:01] **Nate Hagens:** There's a lot of narratives in the news that humans are causing climate change. But what if climate change caused humans? Because you said we had this huge volatility, and all of a sudden the Holocene was stable, and humans then, via going to space and taking that picture, and now these conversations, climate change kicked into motion the consciousness of this planet.

[00:30:28] **Indy Johar:** And our ability to go from a stable consciousness is required when we operate into volatility. A new form of meta-intelligence is required. And you're right, this could be a symbiotic transformation of the capabilities of us as a species. This is why I genuinely believe the moment we're in is the Fermi paradox moment.

[00:30:46] It is this tipping point between a civilization which is operating object form separational theory to entangle thesis, and this is the Earth becoming self-aware. So I don't sit here with, "Oh my God, it's all doom." I think that we're in the most extraordinary transformational moment, and all these capabilities are coming to play.

[00:31:04] The challenge is, I don't think we're organizing for the vision of the possible right now, and I think there's something extraordinary in this long arc.

[00:31:12] **Nate Hagens:** So talk me through that. How do we organize for the possible?

[00:31:16] **Indy Johar:** I trained as an architect, and I was often sort of said, "Oh, Indy, draw me a picture of this future."

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[00:31:20] And I was like, I found myself always hesitant because what I don't want to do is colonize that future. And by colonize that, I don't want to trap us in the vision of one person. I think this is an unfurling capacity, and what I'm more interested in is how do we unfurl into a different future. So this is why I use the, the language of the Earth perceiving itself as to be able to shift our frames.

[00:31:45] I think the brilliant work that's been done by Nia Trust and Hedda and, and Alexa on a whale, a, a species nation, right, as an idea, I think is extraordinary because it transforms... It tran- takes a theory of state, transposes it to beyond human systems, allows us to interface our theories of state into a whole new worldview.

[00:32:10] These are stepping stones. Stabilizing the Arctic, I think, is a stepping stone for a new theory of planetary governance based on actually mutualized recognizance of entanglement or risks, and this will transform. It won't be about Arctic becoming self-sovereign like an object. It'll be a relational problem.

[00:32:27] And I think that's where I see the pathways exist for a new type of future. I think the disruption of humans as units of labor and cognition into this next form, I think is a pathway of a new, future becoming available. I think it will challenge our theories of machines from theories of certainty-orientated systems to doubt-orientated systems.

[00:32:49] I think the beauty of being human is our metacognition that we don't know. Our ability to know that we don't know is, I think, the most beautiful things about humans because in that self-awareness, we generate a landscape of curiosity. In that self-awareness, we generate landscapes of tentativeness, tendernessness, care, and then play as a possible landscape of being and becoming that would otherwise not be available to us.

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[00:33:15] So I think there's something extraordinary through these options. I think our theory of land, I think I'm pretty convinced that a pathway forward is we are going to have to look at an auto terra preta worldview of land, where Amazonian thinking on land as a cultivated open garden, mass multi-species ho- hosting and gardening with machine systems, I think is going to be almost certainly micro-autonomous machines with these sort of environments.

[00:33:44] This is gonna be a completely different theory of land, and perhaps with it, almost certainly, a different theory of, money, different theory of governance rooted into those frameworks. All those things are now becoming possible, which I think... So I, hint at where I can see pathways rather than saying that's the vision.

[00:34:05] But those pathways are, for me, are extraordinary 'cause I think if you can touch them, they transform everything.

[00:34:11] **Nate Hagens:** So let me double-click on something. Our culture not only is, trained in, ensconced in certainty and confidence and authority and individualism and all that, but we do, reward overconfidence institutionally and in the media, and humility and the ability to say, "I don't know," is almost a first step to looking at the magnitude of what is coming our way.

[00:34:44] What are your thoughts on that?

[00:34:45] **Indy Johar:** I think this is a really critical problem. So I think we've ended up using science and logic as a truth thing. Science, for me, is a socialized mechanism for holding uncertainty and unfurling. A socialized mechanism for holding uncertainty and the unfurling of knowing It is not about truths.

[00:35:11] And we have reduced science and conflated it with religion, that it is a provider of truths, and it is not. It's something maybe even more beautiful, and I

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say that as a Sikh. It's, it allows us to hold uncertainty. There is a role of faith, I genuinely believe this, 'cause faith allows us to operate, I think, in the space outside space and time.

[00:35:36] It allows us to operate in a space of the possible, the imagination, which I think is critical. But at the same time, science is not faith. Science is the mechanism, means for holding uncertainty. I think one of the things that happened as a kind of viral failure of as we became more abstracted and noun-orientated into the world, we then started to apply certainty systems, nounification systems into science and everything.

[00:36:03] And that conflation of both abstraction and nounification has thereby actually trapped us, and we've lost the means to hold uncertainty. And, you know, Descartes, if you read his work properly in the first place, and I'm not a big fan of Descartes generally, but what he says is, "I doubt, therefore I think, therefore I am."

[00:36:23] And if you reintroduce the thesis on doubt, a civilization that cannot hold doubt actually cannot hold progress and unknowing, tenderness and care because it's rooted in the conflict of certainties. And I think this is a, an ontological failure that we're operating at a civilization scale.

[00:36:43] **Nate Hagens:** Okay. Many, questions.

[00:36:44] So firstly, Descartes didn't only say, "I think, therefore I am"? That was preceded by, "I doubt, I think"?

[00:36:52] **Indy Johar:** Yeah.

[00:36:52] **Nate Hagens:** I didn't know that.

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[00:36:53] **Indy Johar:** So if you read the first paragraph before, that is what he's suggesting.

[00:36:56] **Nate Hagens:** Okay.

[00:36:57] **Indy Johar:** And I think that's really beautiful because it really challenges the certainty systems that we've operated.

[00:37:04] **Nate Hagens:** That is cool. financial markets At the current moment, there's a pinpoint of absolute certainty, yet over time it spreads out to enormous volatility. Thoughts on that?

[00:37:22] **Indy Johar:** So it's a really good question, and I suppose what I'm trying to do is sort of come at it from, so what are the spaces of quasi certainty or necessities that we can construct?

[00:37:36] According to the science, as far as I can see it, and the models that I can see, we are going to have to stabilize the Arctic, right?

[00:37:44] **Nate Hagens:** And a thousand other things.

[00:37:46] **Indy Johar:** Right. Now, if you can take that as a, necessity, a need, we know what the systemic losses are of that. That is where capital markets should be allocating.

[00:37:59] We are going to have to cool Madrid or many cities by eight point five degrees, vast numbers. The creation of quasi infrastructures, and one way we're dealing with uncertainty is operating no longer at the product scale, but the quasi population scale. So the economic asset is not individual economic products and services, but is the effect of cooling Madrid by seven point five degrees.

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[00:38:24] And that is a function of multiple interventions and multiple beneficiaries. The ability to construct these, these quasi infrastructures, I think are new needs. So if you notice, everything I'm talking about is the need space as opposed to the provision space. So I'm talking less about the supply side of innovation, but actually the demand side of innovation and where it sits and how do we construct and organize that demand.

[00:38:50] So where... And those are all based on likely projections and probabilistic analysis of where we're likely to head and what the implications are. And even in this, I think one of the, one of the things that we've learned really this addressing of, say, cooling Madrid in itself, once you start to look at that problem, that becomes a system problem, capabilities, capacities distributed, and fundamentally it becomes about building the capability of a system to autopoietically address itself.

[00:39:22] So what you're really, the end goal is not the addressment of the problem, but building the capabilities of a system to autopoietically heal itself. And that is a financial capability, perceiving a risk capability, an organizational capability, and a civic legitimacy to that framework that allows a society to self-organize for its transition.

[00:39:44] And that, I think is the real systemic goals of these investments as opposed to even the needs to which we are allocating resources and moving to allocate resources.

[00:39:52] **Nate Hagens:** Okay. let me take a, a wide boundary step back here. So we're a hundred trillion odd in GDP. There's, upwards of four hundred trillion in total debt and claims, and there's financial, stock markets and All, first of all, all of that 400 trillion odd of digits in bank accounts and linen in our pockets, first of all, when it is spent, it's spent on energy and resources and non-renewable materials and ecosystem impact.

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[00:40:25] So that's number one. There isn't enough energy and materials and ecological health for that all to be spent, is one of my core theses. That's number one. Number two is all the holders of that are expecting that to grow and be serviceable in the future, and being spendable for them, their children and whatever, in a world that is rapidly leaving the stability of the Holocene and is rapidly headed towards famines, wars– Mm–hmm

[00:41:03] other things So is it collective denial that's happening in the financial markets? I know one of the things you're working on is civilizational optionality, and, I think I saw you say recently that creating options for our future is actually what potentially our biggest asset class. I say that time is, our biggest asset class.

[00:41:31] But walk me through if I was an institutional large wealth holder, like a pension fund or a, a government, a sovereign wealth fund or any of the institutions looking at, oh, how do I manage my IRR going forward, but then looking at the whole system and, walk me through the logic there.

[00:41:55] **Indy Johar:** So I think the first thing I would say is I think it's really important for any institutional actor, sovereign actor, to start seeing the coupling of these risks.

[00:42:06] **Nate Hagens:** Okay. Name a bunch of the things that are coupled.

[00:42:09] **Indy Johar:** So I think, I think the risk between nutrition, with labor and cognitive collapse linked with geopolitical, destabilization as resource conflicts accelerate and with the climate breakdown volatilities that we'll start to see, those things are coupling at a very rapid speed, and you cannot see those things separately.

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[00:42:33] **Nate Hagens:** So, so not only historically those things were very small risks and they were not connected– Yeah ... but now they're increasing and increasingly obvious, and they're correlated.

[00:42:44] **Indy Johar:** Yeah, and not just correlated, they're coupling. They're self-feeding into each other. The impact of climate breakdown is affecting our nutrition cycle as well as, the fertilizer energy costs, as well as the loss of labor.

[00:42:56] Like, these things are starting to c-couple in ways that I don't think we ever foresaw. So that's– Okay ... number one, I would definitely do that. Number two, I think there is a kind of a realization moment that's required that I think our perpetual theory of hunting alpha, may need to be rebalanced in a world of great volatility.

[00:43:19] So if you are a holder of wealth, I think it is incumbent on you, not through a moral landscape, but incumbent on you to understand the optionality collapse that your claims on the future are facing. That is the number one thing. And j– and again, I'm just gonna reiterate that as a steward of claims on the future, which is what money is, we are about to see a collapse on that claim capacity of that money.

[00:43:46] **Nate Hagens:** Here's a term I just thought of on the spot. You are free to use it. We need a civilizational Sharpe ratio

[00:43:53] **Indy Johar:** I think so. I very much agree. And this is why I'm also saying that this isn't a moral demand. I'm not inviting you to be kind. I'm just inviting you to be smart right now. There was a time I was– I would invite you to kindness and just be generous.

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[00:44:09] I think this is about self-awareness of the optionality collapse to capital itself.

[00:44:15] **Nate Hagens:** So one of the problems, though, is all the things that you mentioned that are coupling and feeding into each other don't have prices and therefore are invisible to our current markets.

[00:44:29] **Indy Johar:** They're invisible to our current markets, but this is where I think sovereigns and intergenerational family offices are not bound to the train that's jumping off a cliff.

[00:44:41] That is their superpower. Yes. That is their delta. That is their position. That is their power, is they can actually perceive real risks, not just the accountable risk to which our current world operates. So this is why I kind of slightly ignore all coded capital. So if you're a fund manager, you raised your fund five years ago, you're locked in into a particular performance cycle, you don't have the capacity, because of the coding of that capital, to actually take account of the risks that are in play.

[00:45:12] **Nate Hagens:** It's the institutional version of the Upton Sinclair quote, "You can't expect a man to understand something his job depends on him not understanding."

[00:45:19] **Indy Johar:** Precisely. And I think that's why... But I do think sovereigns, intergenerational family offices have not only an obligation, but a necessity to start to understand this, and that's also where their power to delaminate off the train that's about to jump off a cliff is.

[00:45:35] That's where all the value lies.

[00:45:38] **Nate Hagens:** So what are you working on? What are you trying to do?

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[00:45:41] **Indy Johar:** So from our position, I mean, like what we're trying to do is basically route capital that's become aware of this optionality collapse to positions and options on the ground, which can either firebreak the pathways of cascading risks or provide cascading markets in very similar to what I described in the AU for transformation or do high levels of what I'd call diffusion capability.

[00:46:10] And so example would be, I used the example before, cooling a city. An example would be stabilizing an aquifer system. An example would be all the way through to atmospheric river governance. example would be zero material, growth of a city where you increase the net livability of a city with no new material inputs.

[00:46:31] So actually taking these... And there, there are about 17 different options. How do societies make decisions together? Whi- which we find that if we can't transform our capacity to decide, we won't be able to manage the risks that we hold. The whole work on beyond labor and cognition theory of humans, we think that's a key risk.

[00:46:51] Bioregions around the world, we're operating in now seven different bioregions and looking at how you stabilize them.

[00:46:57] **Nate Hagens:** So you may not know this because we just said hello before this interview, but I am exhausted 'cause of all the things in New York City, and I am completely wide awake right now because of what you're saying.

[00:47:08] So getting back to my framing- Yeah ... because I think there's a third piece. The first piece is we've got hundreds of trillions of dollars that eventually will have to be turned into real things. Number two is the ecological systems accounting doesn't allow for that to happen. But the third piece is all of that

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digital claims on biophysical and ecological reality themselves have optionality, and we don't have to spend those things on comfort, convenience, and bling.

[00:47:41] **Indy Johar:** Totally.

[00:47:41] **Nate Hagens:** We can spend them on regenerating living systems and, the things that a self-aware planet might want us to spend it on.

[00:47:51] **Indy Johar:** Exactly. And that, that is a choice that we have, and I think that's the groundstate that we have the capacity to be able to do. I also think that if you do any one of those things, so, you know, let's take Niatross Wales nation.

[00:48:03] Looks like a far option, but I would argue it's not. I think it fundamentally is about the transformation of human and more-than-human consciousness. It's about ecosystems. It's about theories of state. It's about theories of diplomacy, theories of capital formation, which is beyond human capital formation.

[00:48:21] That one option explodes a whole theories of like whole thesis on how we perceive the world. It's going beyond humans as units of labor and cognition, I think will explode our theory of what is where the value lies and what is the theory of attention. What does love really mean? What does meaning really mean?

[00:48:45] all the way through to what is imagination? All these kind of words that we use in, like, soft ways in literature, I think these are like... These are words that are so powerful that we've, we just don't understand them yet. And, you know, if I was a sci-fi author for a moment and I was to say, what if love was basically the gravity between conscious systems, two consciousnesses, and the gravity of a meta-consciousness?

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[00:49:17] What if th—the love of things was actually a gravitational effect of a meta-consciousness? What if imagination is the collapse of, space time in our brain, in a quantum brain capability? What if memory is a dialogic function in time? What if, meaning is about our relationship of how we persist in time and how attention rarifies our persistence and our desire to persist 'cause we have an...

[00:49:50] Like, I think these words, and I'm saying them partly through a framework of science fiction because I think we're nowhere close to what's possible, and I have to evoke science fiction to give a wrapper of the possibility of those systems.

[00:50:04] **Nate Hagens:** I hear you, and that really resonated with me. But as you were speaking, I had another thought, which is increasingly I meet amazing humans like you doing this work, and it gives me so much hope and inspiration and...

[00:50:19] But we look at the masses of eight point two billion of us, and what is the theory of change? Do we need 1%, 5%, 10%? Do we need none, no people except the institutions and the prices and the mo- I mean, how do we operationalize people asking the questions you just asked short of putting psilocybin in the water supply?

[00:50:45] **Indy Johar:** I think it's a combination of things. Unfortunately, I've probably come to the reality that moments of crisis will be our Overton window shift landscape moments- Yeah. Yeah ... and we're gonna go through them. And the question is, are we able to act fast enough with high enough diffusability to be able to use those moments so that we prevent large scale violence?

[00:51:06] I think that those are the needle moments that I think I'm looking at more and more. I think that's gonna be part of the story. I also think that actually

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what I love about what you're doing, what all of us are doing in this room, is I think we can narrate Actual possibilities. And once you start to narrate them, once you start to ask those questions, they're like viruses.

[00:51:33] They don't... They can't be stopped easily. This is why I think, you know, really working at the memetic level I think is so important. This has happened to me three times where somebody walked over who, you know, said, "Indy, I didn't understand what-- everything you said, but I felt it." And I was like, maybe that was the whole thing."

[00:51:53] I thought it was the words, but actually the most important thing was the feeling, 'cause then the person could construct their own words, and that's what actually happened. They ended up constructing their own language, but they could sense it in their embodied self. So I do sit with great hope. I think our role is to not only narrate, but to put the kind of conduits of resource and claims into these positions, and with audacious, like- Energy.

[00:52:26] I think not apologetic energy, with audacious energy of making this future, because I think it's a-- it's necessary. It's asking to be called out and called into being. I don't wanna use the word hope because I find the word hope is too consumer. It sort of pacifies the audience into being a consumer of a future.

[00:52:46] But I think this is a courageous invitation, and I think the courage invites us to be more human than anything else, because I don't think a machine has courage.

[00:52:54] **Nate Hagens:** Okay. So, one thing I've learned in this work, and experienced, over these years is the incredible standard deviation of phenotypes, personalities, skills, temperaments, all the things with the humans that I've met.

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[00:53:12] Presumably, that, that same normal curve is within the financial services industry and some of the high degrees of freedom, wealth holders, sovereign funds, family offices and such. So walk me through, are you actively doing this now, trying to persuade these people? So, try to simplify it down as if I were really naive about these topics.

[00:53:39] And is there a, a way that they can contribute and make a proper decision for their family office or their sovereign fund that falls short of agreeing with our biophysical system synthesis that still makes f- sense from a, an IRR objective fund? Wa-walk me through all that.

[00:54:00] **Indy Johar:** So the, way we're thinking about it, and I'd really, you know, love, the, the listeners to this and everyone who's party to this conversation to actually add and improve this.

[00:54:11] This is how we're thinking about it currently. So-- And again, you know, it's increasingly the models and the way we look into the future, it increasingly makes clear that there will be a collapse of the claim capacity of money over the next 30 years Largely driven by the biophysical realities that we're facing and the kind of volatility systems in turn.

[00:54:36] There is a, I think according to the models, it's about an eighty percent chance. So. Now, if we take that as a basic starting point, and you're a wealth holder, and somebody said that to you, I think the first obvious thing to do would be saying, "Okay, let's check the models." Great. Let's check the models.

[00:55:00] Then if you check the models and you say, "Well, actually, those models are realistic," then your second thing would be to say, "Well, if those models are realistic and I'm running a portfolio, and I want to basically hedge against these losses, how much should, I be allocating to the management of these risks?"

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[00:55:22] That's it. Step one. And even if it's zero point one percent, one percent, two percent, ten percent, it is the management of these existential collapse of optionality to capital itself. That is what you're managing. Great. So I'm not asking for you to be... to believe this. T- I'm asking you to just use your intelligence and probabilistic analysis to say, "Is this a chance?"

[00:55:47] Yes. If this is a chance, how are you contributing to the management of this?

[00:55:50] **Nate Hagens:** It's why we buy fire insurance. In the unlikely event our house- Exactly ... burns down, we're really screwed, so it's worth paying a quarter of a percent of the value- Totally ...

[00:55:59] **Indy Johar:** or whatever.

[00:56:00] **Nate Hagens:** Okay.

[00:56:00] **Indy Johar:** And that's the first step that I'm asking.

[00:56:02] Then I think what's really important is to code that flow of capital as to the management of those risks. So if you genuinely are saying these are cascading risk failures, then you've got to be able to allocate a series of positions and options which have a chance in a snowball hell's to effectively manage that risk.

[00:56:22] So that is, I think, the responsibility of the agent that's managing capital. The return on capital that they should be seeking to provide is for the return of the management of the existential risk to capital itself. That is the return pathway. I also think that every one of these pathways expand optionality.

[00:56:42] So for example, if you look at, transforming our land to being a terra preta future, it will require a new theory of machines, it will require a new theory

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of governance, it will require new th... All sorts of new supply chains and value chains will need to, be built. I think there is then, along with that existential, you know, capital which is aware of the existential risk to itself, there's participatory capital with options into allocating into those futures.

[00:57:08] And those are two buckets of capital that need to work together. And the reason I think those two buckets are really interesting is 'cause they create the chain, they create a logic argument, argumentation for capital to be able to flow in a way. What we're looking to do is create the conduit between where capital pools and how capital is allocated.

[00:57:30] And if we can do that, then I think that four–400 trillion, those claims can start to be recycled in a way. Currently, they're locked into a worldview that can't absorb them without self–terminating us.

[00:57:43] **Nate Hagens:** You mentioned terra preta future, that's biochar and sequestering carbon using ecological methods.

[00:57:52] Presumably, that would be one of thousands of techniques that in the same way that our 400 trillion is locked into self–termination, there's a ceiling on these technologies right now because there's no market for them, and there's no cultural aspiration to use them at scale. So it, opens that ceiling and changes the self–termination risk.

[00:58:16] **Indy Johar:** And totally. You know, what I find interesting, say for example, the Amazon, it's one of the most species diverse environments. That species diversity was almost certainly human cultivated

[00:58:28] **Nate Hagens:** Yeah? Tell me more

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[00:58:29] **Indy Johar:** Because I think all the research that we've seen in the Amazon is that the Amazon was effectively an open garden, and the biochar infrastructure and the species cultivation was a-- it was literally an open garden, and it was cultivated as an open garden.

[00:58:43] And I think our theory of agriculture, our theory of commodification, our theory of abstraction and, our form of simplification, which I think has actually undermined all of that. So I think what I'm looking at is these, these sorts of capabilities of these mass multispecies, and that's made possible because we have the capacity to cr- construct, I think, micro-autonomous machines that are going to be able to help operate into this new garden space.

[00:59:11] So it's a combination. You know, I think the simplification, you know, James Scott's seeing like a state or whether it's, agric- agro-industrial machines were all designed for a logic of machines. And I think we're going to break both simultaneously a logic of land and a logic of machines in these moments, which I think is really-- it's a really interesting invitation.

[00:59:34] **Nate Hagens:** So you are actively trying to set up a civilization optionality fund, and the first step is that wealth holders realize, "Oh, we're in a cul-de-sac here, and if we do the NPV of these, there's no-- it's zeros, i-in the coming decades." So that's the step one, and then maybe they allocate some as a hedge.

[00:59:58] Presumably, you want to go further than that, and if this were to scale, then there's all kinds of- Yeah ... new technologies and everything else. So, so far-

[01:00:08] **Indy Johar:** Yeah ...

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[01:00:09] **Nate Hagens:** what are the two or three biggest roadblocks that you find in conversations? What are the biggest pushbacks, or is there a culture-wide, financial services cognitive dissonance that is occurring?

[01:00:23] Or is there, if you're right, Indy, then my built identity and what I care about and all of my investments and decisions are, are tilted the wrong way, and therefore, this is too much of a pill for me to swallow? Or what's been your experience?

[01:00:41] **Indy Johar:** It's a really good question. I think a few days ago, I was at a dinner, and I was sitting with someone of wealth And the thing that scared me the most was when they turned around and said, "Well, Indy, it's the best I can do."

[01:00:53] And that scared me the most because they were-- they were somebody really kind, and they'd become exhausted, and exhausted at, the scale of the micro and allocating and trying. And so there was something that I really... That was one thing that I-- really disturbed me for a moment because I think they were-- they had for many, years trying to do this, but had become...

[01:01:20] And I think what they were constantly operating with is a space of the possible, not the space of the necessary. And I think the space of the possible is a disastrous space, actually. Space of the necessary is, I think, liberatory. And I think there was something really shockingly... You know, I was-- You know, those were-- some of those moments where you sit there and think, "Oh, shit, I feel for you," and also f--feel for me because this cycle is terrible.

[01:01:46] **Nate Hagens:** I have a follow-up question, but please define the space of the possible and the space of the necessary briefly.

[01:01:51] **Indy Johar:** Yeah. The space of the possible is, "Indy, we still need to build homes because homes are required, and yeah, we'll try to decarbonize them

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a little bit if we can, but we still, you know, we need labor, we need concrete because we don't have alternative."

[01:02:07] It is operating in the incremental improvements of the possible. Okay. And the necessary recognizes that every one of those homes that you build basically has a, a balance sheet of lives on the other side of it, that people will die. And you're not operating in the necessary. You're trying to fix it at the nec- at the kind of plausible adjacent possible of the present, as opposed to looking at it first, first principles and saying: How do we build?

[01:02:37] How do we double a city in terms of accommodation without massively increasing its ecological b- material footprint and energy footprint? And what would be the means to doing that at a scale of imagination necessary?

[01:02:50] **Nate Hagens:** So using different words, you're talking about advanced financial triage.

[01:02:55] **Indy Johar:** Could be. Yeah.

[01:02:56] **Nate Hagens:** So, how much of the barrier with the people that you talk to do you perceive to be lack of understanding of these things versus a lack of the social license because their peer group are going this way, and for them to go this way is too much of a reputation, friendship, social risk, and that if the narrative changed, they would quickly sign on because they do understand what you're saying?

[01:03:30] W- h- how, much would you say is in those camps?

[01:03:33] **Indy Johar:** What I'm finding is, this requires first principle thinkers.

[01:03:41] And unfortunately, we've built a society which doesn't really enjoy doing that.

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[01:03:49] And to be able to make the chain, it requires somebody to be able to operate from the biophysical to the social, to the capital markets, and to be able to actually understand these things and wanting to understand it better than anyone.

[01:04:02] I think the desire to understand it. So that's my number one thing, anyone who has a desire to really understand it. Second, anyone that's inoculated themselves from the one billion human future thing, who's recognizes that's a non-viable pathway. So they'll almost certainly have built their bunker, they'll almost certainly have imagined their bunker, and then have s- almost certainly come to a realization there is no future in that bunker.

[01:04:31] it's like a... Sorry to put it this way, but it's like a dummy. Y- you feel good about having it as a child, but it's not really a viable future. So you have to have inoculated yourself from that position. You've had to be able to go through this first principle position, and then you've got to reimagine yourself being an agent in the necessary.

[01:04:50] And that I think is the third dimension of actually quite a hard space. 'Cause to be an agent in the necessary, it's not an allocation space. It's not... It's you have to be participatory in the creation of the world. And I think that's a really much more difficult space because I think the good capital, let's put it that way, has become so apologetic of itself that it seeks not to imprint on the world.

[01:05:17] So it sits backwards and kinda goes, "Well, I don't wanna impose myself." And so what ends up happening is it's, just, it's sitting there distributing without a sense of agency in itself. And what is our theory of good power? And I, and those might be difficult words to put together, but unless we cannot be agent in the making of the world.

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[01:05:42] And so those are the things that I find the inoculations that are required to be able to open this space up. That's the problem space.

[01:05:51] **Nate Hagens:** If there is such a wealth holder who considers themselves a first principle thinker, what are the first steps to go down this path who, if, they're listening to this show?

[01:06:06] **Indy Johar:** Let's all meet and talk. I genuinely think this isn't, it's not a pitch doc. It's a, a sensing the world together and why. And all of us being, and what I admire about all of us is that we hold the h- we are able to make claims into the future, but with sufficient doubt to allow other people to tr- to transform us.

[01:06:26] And you've done this so beautifully from when I saw you in Austin. Like the journey you've been on is extraordinary. You were brilliant then, and what you've done since then is extraordinary as well. So I think there's something about how we do this that has to be fundamentally different to the way to do this.

[01:06:41] I think it's about building a movement of people together, which I know you're part, of doing.

[01:06:47] **Nate Hagens:** Well, thank you for saying that. let me double click on, one of the aspects of what you just said. I have a pretty strong feeling that there will be some sort of famine and caloric shortfall in the world by 2028.

[01:07:03] This Ukraine-Russia thing, the Iran-Israel-US thing are not going to just... I mean, life has changed for the rest of our lives because of that. I don't know when there's going to be a disruption. I think there's a 30 or 40% chance it's in the not too distant future, but there's a chance that the Superorganism continues to be resilient and it's after 2040.

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[01:07:30] I, don't know When dealing with these enormous coupled systemic, ecological, planetary, socioeconomic risks, how do you personally hold uncertainty with all these forecasts? and we can model it, and a model is only as good as its I-least of, good viable input. I parse this as I'm very confident in my worldview, but I'm human, and humans are often delusional.

[01:08:12] Therefore, as even if I'm 100% confident, I have to lop off 25% haircut just because I'm a human. and that's kind of my philosophy, but I'm wondering how you think about that, with your own work.

[01:08:24] **Indy Johar:** I think the way I've got to that is, i-is to discount myself but to hold my own certainty. As in to say, unfortunately, what I'm describing and evolving has higher and higher resolutions.

[01:08:44] It's solidifying, not dissolving. The more data that comes, the more-- Yeah ... So what I-- but what I would say to everyone is model it your own way, and then let's talk. And the reason why I say it that way is I'm not sure... So I hold everything I say with an opennessness, but at the same time, what I'm seeing, I don't even know how to describe it, that is not just uncertainty.

[01:09:12] There are new patterns of volatility that are in formation that look more and more tightly wound and coupling. And so I suppose where I embrace the uncertainty of a system and discount my own hubris is to say, and my invitation to everyone is do your research, join us. I think building a capital pool of any type is I think a, is a real, commitment in a sense that pooling of cap-capital is also a pooling of claims.

[01:09:55] And in the act of pooling of claims, you're making a commitment to the fulfillment of the allocation. And it's, And I, you know, I-- we set up a couple of funds many times, you know, many years ago, 10 years ago, and I remember thinking at the end of one of the funds saying, "I will never set up a capital pool,"

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until I was absolutely certain that I wanted to play here, because I think, it's a complete life commitment at the moment that you pool capital, and I think that commitment has to be commercial.

[01:10:21] So where I would invi-invite everyone to say, "Look, make sure we're only a small part of your portfolio, discount us," and let's really hope there are alternative, better pathways for the system to seem resilient. But at the same time, I genuinely believe through the darkness that we're pointed to, I think is an extraordinary light.

[01:10:44] And that extraordinary light, I think is unimaginably beautiful. So I also think that w- the risk that we're inviting people to see is a pathway to a new way of perceiving ourselves and the planet and the civ- and the civilization that we are. But I think we should only be a part of a portfolio of thought and part of a much wider portfolio of allocations to which a worldview can, can be held with diversity.

[01:11:11] **Nate Hagens:** I wouldn't normally ask this question, but you're such a deep thinker and a wordsmith, maybe you would be willing to define or redefine, given the context of this conversation, the words capital and portfolio.

[01:11:28] **Indy Johar:** Those are words that I would love to decode properly. So the first thing I probably move away from capital per se, and I know I've used it.

[01:11:38] My brain just instantly went on claims on the future. I find that a very useful device, transferable claims on the future, i.e. money. I find that a very useful device on what, what financial capital gives us.

[01:11:54] **Nate Hagens:** Yeah.

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[01:11:55] **Indy Johar:** Whether we like Elon Musk or not, I'm gonna put that aside, but to make the claims on the future that he's making requires an intensity and pooling of capital Of currency or money.

[01:12:12] And I think there's something interesting to be learnt in... And I think the same was true for electrification of New York, and I think the same was true. There are these moments where civilizations have to pool their claims on the future to create an intensity to be able to construct those futures in different ways.

[01:12:32] So one of the things I'm holding a lot right now is what is a good way of holding those claims? What is a way that doesn't end up becoming self-fulfilling to the individual that's stewarding those claims? What is a way that allows for those claims to be temporary enough to then diffuse generatively back into the system?

[01:12:53] There's a whole exploration there. and in portfolio, I mean, like there's what I'd call a lower dimensional portfolio, which is effectively just the distribution and the hedging of risk between options where you have, right? So you say, "I've got some of this, and I've got some of this, and this will give us fixed returns over a period."

[01:13:12] I think there's a, different theory of portfolio where actually those are not just managing risks, but acti-actively acting in a virtuous framework. So those options are working progressively to actually create an, a greater value than any one of those options. So not just the management of risk, but the expansion of optionality that those positions are creating, in, in that portfolio.

[01:13:36] And I think that i-itself is a different way of looking at a portfolio. I think then the whole thing is point of view. What is the worldview behind a portfolio? And frankly, my biggest worry to any capital allocator right now is that if you don't have a worldview, I'm deeply worried. So and because I think there is a very

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serious question that any LP should be asking any fund is give me your world-worldview.

[01:14:01] Why do you think the science or the logics that you're constructing that worldview are pertinent in this age of vo-volatility? I think that level of interrogation, just that question of in- that interrogation will, I think be transformative for actually capital structures as they exist right now.

[01:14:19] **Nate Hagens:** Well, I think a lot of people in that universe probably outsource their worldview to the financial markets.

[01:14:25] **Indy Johar:** Y-yeah, or what I would call perceived norms. And I think that-

[01:14:29] **Nate Hagens:** Perceived norms.

[01:14:30] **Indy Johar:** But the problem I think, is, goes back to the earlier point, all the fundamentals are off. All the f- energy, demographics, M2 supply versus GDP, AI infrastructures, climate breakdown effects. You put any of them down, the fundamentals of those norms are off.

[01:14:49] So if you're relying on existing market norms to be able to make claims into the future, this feels like... I mean, the kindest way to say is, crazy.

[01:15:03] **Nate Hagens:** So if capital is claims on the future The fuse and the speed of turnover of the capital becomes an important, characteristic because money is probably arguably the most intense supernormal stimuli of our species.

[01:15:25] I mean, because it, condenses all of our ancestral traits into one denomination that can be immediately transferred from digits in the bank to land or crypto or oil or ships or social power or whatever instantly. But it's the instantaneous aspect of it that is, also its potential downfall. Because if we

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understand that capital is a claim on the future, but we had a 10-year lockup on capital or a 30-year lockup or a 100-year lockup, people would make wildly different decisions.

[01:16:01] **Indy Johar:** Yeah, and this is the-- I mean, we have the options to be able to design those lock-ins and incentivize those lock-ins as well. I-- But I think firstly, I just really appreciate the clarity with which you, articulated that. I think that was really beautiful and important. So you can buy a place in a city.

[01:16:24] You could say, "I'll pick up the appreciation of that city's vitality in the land value." You could take that worldview, which is an extractive worldview of taking the natural, you know, buoyancy, urban buoyancy, economic buoyancy of a city and be able to extract it in land value. You could take a worldview that I own assets in that city, and investing in the buoyancy of that city is a systemic way to actually pick up the land value.

[01:16:58] So you can take... Those are two different points. One is a systems worldview, one is an extractive single point worldview. I think as volatility increases, the only way to hold assets well will be to take a systems worldview onto the management of those assets and the preservation of wealth and the preservation of even those assets in those different ways.

[01:17:19] So I think advanced capital allocators are going to have to start to think about how not only... You know, take this building. If I was to pick this building up and put it in the middle of Nova Scotia, how much is it worth? Nothing. Because its value doesn't come from its material logic, it comes from its placement in Manhattan, its labor markets, its culture, its all sorts of, transportation.

[01:17:43] The building itself is nominal. I mean, I'll agree with you on the material value of the building, which is, I think, massively underappreciated.

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[01:17:50] **Nate Hagens:** No, I was just gonna be flippant and say to me it would have more value in Nova Scotia because then I can quickly get to the forest. But I know what you mean from an economic sense.

[01:17:59] **Indy Johar:** From an economic sense, right? So why I say that is that I think we've, seen the object form of value rather than the system form of value. And once you start to see the system form of value, your theory of allocation becomes fundamentally different. I think that's a key part of how you make claims into the future is no longer going to be on direct investments and direct returns, but system benefits and system returns, which allows for-- opens up a whole different economic case, and also the continuity of provision.

[01:18:28] The value of stability, I think, is massively underpriced in this, in the world. The value of continuity of water, massively underpriced in the world. The value of continuity of energy, massively underpriced. And note the word is the continuity. And I think fewer and fewer environments will be able to stabilize on the nutrition, energy, water, even critical mineral supply, even labor provision perhaps even.

[01:18:53] Those continuity provisions will become more and more valuable rather than the, the efficiency of capital in the providing of them.

[01:19:01] **Nate Hagens:** I have an idea.

[01:19:03] If you're a first principle thinker watching this, this has to at least ring true to people. And what we're really talking about, as I mentioned earlier, is civilizational Sharpe ratio.

[01:19:17] And for those non, finance people, humans are as biological animals are risk averse. And so to just show a historical return doesn't give you a lot of information unless you divide it by the standard deviation or the risk that it took

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to get that return. So if we have huge volatility in coming decades, but it averages out to 3% IRR, it's actually horrible, because of the down 50%, up 60%, because we like to have certainty because that allows us to plan.

[01:19:53] So one of the inferences from— that I'm hearing from your work is by hedging, by taking monetary claims on biophysical and ecological reality and doing investments, either as hedges against your, the rest of your monetary portfolio or as a slight shifting of the cultural aircraft carrier away from conspicuous consumption and destruction of the biosphere as our implicit cultural goal, we actually reduce the volatility of the future and therefore make all other investments have a higher return in the process.

[01:20:37] **Indy Johar:** you've just articulated kind of a, a key point where the management, the kind of loss of optionality of capital itself is one. I think exactly you say if you can reduce the volatility, that has a massive delta on value itself. And volatility of what is also really interesting. Volatility of the supply of energy, food, water, or is it the volatility of your perceived asset classes?

[01:21:02] And I think this is where there's slight plays here where I think we need to be really clever.

[01:21:07] **Nate Hagens:** Well, here's the Ouroboros of this argument in this totally makes sense to reduce the volatility of future streams, except markets are, Gordon Gekko-like in the movie Wall Street, dog-eat-dog, and they're very, competitive.

[01:21:28] So we're... This is a little bit of a, a prisoner's dilemma tragedy of the commons thing because we're investing our hedge to help the whole thing. So there's a game theoretic aspect to this too, yes?

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[01:21:43] **Indy Johar:** I think there is. I actually think there is a theory of continuity value of provision that is underpriced in the system, and I think there's some derivative tools that could be constructed to actually optimize t- for them, which would actually change those market dynamics so the efficiency of capital is not just an extractive provision.

[01:22:02] I think we have to think about layers of capital operating, and we have to create, like, layers of cognition of capital. And currently we often design things in single layers, and I think this is where the role of derivatives and other balancing p- products is gonna be critical, and I think we have to think like that, and we have to import that thinking into critical utility markets into a fundamentally different way.

[01:22:23] And I think some of that stuff is naturally happening, evolving in the system itself, but I think they have to be intentionally designed, and it has to be balancing to the fact that if you were to lose, say, nutrition supply in a city, you would have a total asset value loss of residential, asset value loss.

[01:22:37] So where the economics of this are constructed are not in the provision of supply itself, but in the total asset, asset theory. So I think this is where layered capital products will, I think, be key parts of this story and will be a key part of rebalancing, recoding the capital, the coding of capital, but also the provision and continuity value of those goods.

[01:22:57] **Nate Hagens:** You've completely wakened me up, from my, New York City grueling, sleep deprived state, and yet we're out of time. what else would you like to share with our audience? This has been very inspiring and, planted a lot of seeds for me to muse on.

[01:23:18] **Indy Johar:** Two points I'd share. One is I feel like, much like yourself, I'm sort of half jet lagged and didn't sleep at all.

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[01:23:24] But so what I would say is that what hopefully has happened in this conversation is these lines of thought have been laid out. I think those lines of thought yet aren't knotted together, but hopefully listening with a bit of care, as in care not as care for listening to us, but care as in we were trying to be intelligent as possible, I think would open up a way to perceive how those lines of thoughts interrelate and co- and come together.

[01:23:53] Second, I think there's a lot, as you would say, every one of these points does weave together in multiple different ways, and I think it's really vital that we start to look at that. Next, my... genuinely my deep appre- appreciation to you, Nate, for Your capacity to hold these conversations and to create the conversational base to allow for these sorts of, and I would say the, brilliant people that you have on this podcast, to allow for this conversation to have the depth that it needs to have and to allow first principles to actually...

[01:24:26] Which you built. Your material analysis was a first principles analysis which allowed the world to perceive the world differently and the future differently. And I think keeping this space open, I think, is the fertile ground for the future to be built.

[01:24:39] **Nate Hagens:** I think I want to bring out the fact that you have mentioned our time in history as bloody extraordinary and maybe, a shout-out to our viewers, an inspirational Indy Johar-ism, that, double-clicks on that phrase and, the truth of, our moment.

[01:25:01] Do you want to say anything about that?

[01:25:03] **Indy Johar:** Maybe adjacent to this, what I would say is that I'm not sitting here with despair. I do think we're looking at a eye of a needle to an extraordinary future.

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[01:25:16] **Nate Hagens:** Yeah.

[01:25:17] **Indy Johar:** And I think that is the invitation, and my invitation to all of us is courage, and the invitation to all of us, I think you can just about taste it, and that's the invitation, and I think this is what the moment requires.

[01:25:35] **Nate Hagens:** I taste it when I'm in conversations with people like you. I don't always taste it, and so the inference there, by the transitive property, I need to have more conversations with people like you, or summarized, I need to have more conversations with people i—in the belly of the beast that are working on these cutting edge, Hail Mary passes at this moment.

[01:25:58] and there I think there are a lot of people out there.

[01:26:01] **Indy Johar:** I agree, and I think you're weaving them together and you're building shared vocabulary, which I think also is really important. Like, our vocabulary codes the future.

[01:26:11] **Nate Hagens:** I had lunch yesterday with Jeremy Grantham. He's like, "Nate, you're doing great, but too much inside baseball.

[01:26:16] You gotta change some of your phrases so more people can understand them." I'm like, "Yeah, but then that takes time and, and—"

[01:26:24] **Indy Johar:** I think people get the feeling. I think this is a thing that I've, really got to, is people will discover the words if they get the feeling, and the discovery of the words is their own.

[01:26:36] But I think what we have to do is create the space for people to be able to feel what we're saying, and then everything else, actually they're extraordinary beings in their own right

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[01:26:47] **Nate Hagens:** Gaia speed to you and your work, my friend. To be continued. Come back in six months and give us an update.

[01:26:52] **Indy Johar:** Absolutely.

[01:26:53] Thank you.

[01:26:54] **Nate Hagens:** Thank you. If you'd like to learn more about this episode, please visit thegreatsimplification.com for references and show notes. From there, you can also join our Hilo community and subscribe to our Substack newsletter. This show is hosted by me, Nate Hagens, edited by No Troublemakers Media, and produced by Misty Stinnett and Lizzy Sirianni.

[01:27:17] Our production team also includes Leslie Batt-Lutz, Brady Heine, Julia Maxwell, Gabriela Sleiman, and Grace Brunfelt. Thank you for listening, and we'll see you on the next episode