

The Great Simplification

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[00:00:00] **Nate Hagens:** Good morning. This is part six of how to think about the future, the final one probably. So quick recap of where we've been. In part one, we talked about how to hold the future as a landscape of possibilities, coupled systems and phase shifts, and the like. In part two, we built four grids, economic growth or contraction, power and distribution, geopolitical interconnection, and Earth system integrity.

[00:00:31] In part three, we explored the shape of the landscape itself with valleys and ridges and the asymmetry of transitions and how switchbacks and erosion make futures more or less likely. In part four, I highlighted four composite worlds, the long repair, Mordor persists or more and more Mordor, forces world and the unraveling, and I made the case that the future's most worth building will look like failure to a culture calibrated to growth.

[00:01:06] And that confusion between healing and dying at the cultural level may be one of the deepest challenges we face. Part five was a bit of an aside applying these same civilizational themes to us as individuals on our own paths to the future. Throughout all this, I can imagine a question is building, yeah, come on, Nate.

[00:01:28] What do I do given all this?" Well, I'm not going to tell you that today. what I'm gonna talk about is how to think about what to do. The logic of planning under uncertainty, which was my original ambitious intent with this entire now quite long series. I'm not gonna highlight a list of specific actions or causes to support.

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[00:01:58] Those specifics matter, and I have spoken about them elsewhere and will continue developing that work, on this platform. But I think what will be most helpful to you all, whether you agree with the composites I've put forward or not, is a methodology for finding your own plan of action based on what you care about, your local context, what you want for the future.

[00:02:28] Because without such a plan, even well-intentioned actions can be unhelpful or counterproductive, and that's actually where I want to start

[00:02:51] Before we talk about how to prioritize what to do, I'd like to talk about how I think about what not to do. We can fail in two directions, and the causes of those failures look very different from each other. There's a concept from statistics, type 1 and type 2 errors, that mathematically describe false positives and false negatives.

[00:03:21] Basically, imagine you hear a noise in the middle of the night and you assume it's a burglar. Obviously, you're worried for your safety, so you call the police, but it turns out it was just your cat knocking stuff over in a kitchen. This is a type one error, a false positive. You overreacted to a threat that wasn't real, creating an entirely different problem.

[00:03:47] Now imagine the flip side. You hear a noise in the night and you assume it's the cat because your cat, especially my cat, Tufi, is always running around knocking stuff over in the night, and you roll over and go back to sleep. Only this time, there actually was a burglar, and you missed it because you overlooked the warning signs, exposing yourself to a dangerous situation.

[00:04:11] This is a type two error, a false negative. You missed a real threat because you didn't act. Both are dangerous, both have consequences, they both happen all the time, and the challenge of us planning for a hazy and uncertain

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future involves both of these risks. Type two errors happen due to omission, things we miss.

[00:04:40] They're the shortfalls that we create by failing to act, not protecting topsoil or biodiversity because GDP doesn't measure it, not building, community resilience because there's no monetary or institutional incentive to do that, not transitioning our energy systems 'cause the current ones still technically work. These are the things we should have done and haven't, at least not yet.

[00:05:13] But by the time the shortfalls become visible, it's often too late to reverse course. In the landscape language from part three, these are the washouts, from cultural erosion. They're the switchbacks that we let disappear through neglect, and inaction. On the other hand, type one errors are the shortfalls we create by doing the wrong thing, acting on a model of the world that is incorrect or incomplete.

[00:05:47] These are false positives. False positives come in a few flavors. The obvious one is acting on a partial map of our situation, like shutting down fossil fuels overnight when eighty percent of the world still runs on them and ninety-nine point five percent of our supply chains. The diagnosis is partially correct, but the prescription kills the patient.

[00:06:15] Then there's fighting the wrong war entirely, pouring resources into things like carbon offsets that don't offset anything, or ESG scores that don't change the behavior of the economic superorganism. This is all action, but action that's aimed at the wrong target. Said differently, the burglar is real, but we called the fire department, instead of the police.

[00:06:44] And then there's an even deeper one, the deepest one actually. Nearly every institution on Earth, and every government budget, and every pension fund, and institutional infrastructure plan, and corporate strategy, and all the

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international agreements are built on the assumption that the economy of the future will be larger than it is today. We do not treat growth as one plausible scenario among many, but instead we assume it is the very ground we're standing on and it's solid.

[00:07:27] And that means when contraction arrives, and I think if you've been following along here for the last few years, the evidence strongly suggests it will, then almost everything we're currently promoting and investing in and planning for becomes a ginormous type one error all at once. Many of our individual projects are smart and well-designed and well-intentioned, but they're answers to a question that implies and assumes continued growth.

[00:08:02] And in a period of decline, the nominal answers that many today are pursuing will make things actively worse. Infrastructure design for expansion becomes a maintenance burden during contraction. Financial instruments that are designed to compound become wily coyote traps. And institutions designed to distribute growing surpluses have no idea how to distribute shrinking ones to imagine but a few.

[00:08:41] So the biggest false positive in human history might turn out to be our current culture's assumption that growth is permanent because we've built everything on top of it, including now things like the AI hyperscaler and energy build-outs we're seeing in the news. What could possibly go wrong? The real planning challenge is going to require threading the needle between these two types of errors.

[00:09:10] Act, but don't act so focused on one dimension that you trigger cascading failures in others. Protect what matters, but don't freeze waiting for perfect information, because that will never arrive.

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[00:09:28] In reflection, as I do this work and created this series, I actually think the work at The Great Simplification is trying to head off both kinds of these errors. Most of our risk resides in what we fail to do before the compiling of our emissions forces us into more difficult situations. But the thing most likely to turn all these slow damages into something sudden and unrecoverable is the type one error.

[00:10:02] Powerful institutions acting with absolute conviction on a partial understanding, doing the one thing that feels obvious to them, which is doubling down on future growth and blocking any plans for dissent. That's the dynamic I worry about quite a bit, because it takes a contraction we might have lived through and turns it into a collapse that we don't.

[00:10:34] 2008 and 2020 are the cultural equivalent of the US incursion into Venezuela, giving us a false confidence going forward So how do we thread such a needle? I think it starts with a distinction that sounds pretty simple, but changes everything once we really internalize it. Some losses can be rebuilt and some cannot.

[00:11:07] If you had to choose between losing a hundred thousand dollars and losing your left arm, which is the bigger loss? You don't even have to think about it. You can make the money back, probably. You cannot regrow an arm. This is obvious at the level of an individual human, but at the civilizational level, our planning frameworks lose this distinction entirely.

[00:11:32] We treat losses as if they're interchangeable. A dollar of lost GDP gets the same weight as an inch of lost topsoil, but they are fundamentally different because one can be rebuilt and the other takes centuries to rebuild. Reversible losses, money, market positions, consumer goods and jobs and careers, of course, all these things matter, but they sit in a distinct category, and irreversible losses sit in another.

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[00:12:12] And I think the list of those is longer than most people realize. It runs from the strictly irreversible to the more or less practically irreversible, the things that would come back so slowly they might as well be gone. Topsoil. It takes centuries to build a single inch under natural conditions, and we've been depleting it across major growing regions for a very long time, far faster than it forms.

[00:12:41] Water aquifers. The Ogallala water aquifer under the High Plains in the USA holds fossil water from the last ice age, which accumulated over ten thousand years, and we're draining it in decades. Once it's depleted, it will not refill on any human timescale. Species, like diamonds, extinctions are forever, and in my opinion, far more important.

[00:13:07] Pollinator populations. Millions of years of co-evolution with plants, these pollinators decline, create cascades through the entire food system. More in the human sphere, social trust. Societies can lose trust much faster than we can rebuild it, and below a certain level, cooperation becomes impossible for a long time.

[00:13:35] Institutional knowledge, the practical wisdom held by experienced people, practitioners, often undocumented, often unrecognized. And once an institution loses those experienced people without any proper knowledge transfer, that wisdom is gone. The nuclear taboo I've brought up recently, roughly eighty years of non-use, and if it's broken once, proliferation incentives will mushroom overnight, pun intended.

[00:14:15] Or in the more subtle areas of our lives, the developmental windows of children as one example. You cannot give a child back years of their early development. Those windows close and any disruption then has long-lasting impacts that are difficult to overcome, and then that impacts future society. Your own health past a certain threshold, some damage doesn't fully recover.

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[00:14:44] I'll stop there. This could be a very long list, but let's just reflect on the few that I just outlined and ask, where is most of our institutional and cultural energy going right now? We are optimizing through no fault of our own for quarterly earnings and GDP, which are reversible, while allowing topsoil, species, aquifers, trust, democratic norms, and the ecological corridors around us to erode.

[00:15:16] We are at a strong first approximation, protecting the things that bounce back while neglecting the things that do not. The inversion that this demands is of course much easier said than done, spending disproportionate effort to protect the irreversible and accepting more risk on the reversible. Be willing to lose money to protect topsoil.

[00:15:45] Be willing to lose some efficiency to protect some of the ecological foundations of our country or our world. Be willing to lose some comfort to preserve the developmental health of our children and myriad other related trade-offs. On a personal level, this distinction changed how I increasingly weigh decisions in my own life.

[00:16:12] The question I at least try to ask now, and not perfectly and certainly not always, is which of my choices, which of my actions protect something in my life or local surroundings that cannot be rebuilt? Because those are the actions that matter more, even when they score worst on the metrics our current culture approves of.

[00:16:40] Okay, back to my originally intended point of this series. If the priority is beginning to protect the irreversible, the next question is which actions would help regardless of which of the various composite futures we end up in? And this is where planning under uncertainty logic becomes most useful, in my opinion.

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[00:17:09] We don't need to know which composite world is coming to know what to do, because some actions will act as switchbacks in almost every landscape, in almost every scenario. Building soil health is valuable in every composite world because regenerating living systems is foundational. Food security and ecological resilience determines survival and holds communities together.

[00:17:40] Strengthening community relationships is gonna be important in every future composite because the people physically near you will matter more as conditions get harder. In every plausible future, your relationship with the people within walking distance of where you live will become more important than it is today, full stop.

[00:18:03] That is a personal and cultural switchback you can start building right now, this week Community ties that exist before a crisis are exponentially more valuable than ones that you try to build during a crisis. Learning practical skills, food production and repair and basic medical knowledge and water management, building things and teaching them, these have value in every world, including our current world, but likely become more valuable as larger systems, start to fray and become less reliable.

[00:18:44] Reducing dependence on fragile overseas supply chains means local food and local energy and local water, and these all act as buffers in the best of the composites and survival in the worst Though it's not foremost on many people's list, protecting local ecosystems, watershed health, pollinator populations, soil biology, the species that share your zip code and your area code.

[00:19:17] Again, in an inter- any intermediate or longer term, these are foundational for everything else, and their value doesn't depend on which of those four or two hundred and fifty-six composites arrives. And the reason that this principle of planning under uncertainty works is it lets you act decisively without any felt need, for certainty.

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[00:19:49] Speculation bets everything on one outcome, and that's what our society is doing, and loses everything if it's wrong. In contrast, what I'm calling here robust action produces lasting value regardless of which future we end up having. This is how ecologists think about resilience under changing environmental conditions.

[00:20:12] Organisms that are robust across a range of environments persist through change, even if they're less optimized for any single one of them. And in a period of genuine uncertainty, which we undoubtedly face now, robustness beats out optimization. Of course, there are limits and caveats to this even. Robust across composite worlds is a good general principle, but it's not the only legitimate strategy, on the doorstep of The Great Simplification.

[00:20:52] Some people have a specific mission. They care about one thing with an intensity that organizes their entire life. Someone dedicated to ocean conservation might spend all their energy on actions that primarily matter in the future composites where the biosphere can still be protected and cetaceans still have long futures ahead of them.

[00:21:15] Shout out to my friend DJ. Someone working on nuclear disarmament is focused on preserving a specific taboo that matters enormously in some worlds and is less relevant in others. Someone preserving an indigenous language is protecting something that cannot be rebuilt once it's lost, regardless of which composite it would be lost inside of.

[00:21:43] We could call these unicorn strategies. They are deliberately focused rather than hedged across different worlds. And they make sense because we humans are not interchangeable planning units. We are beings with particular loves and passions and callings, and someone whose life's work is protecting wild salmon runs shouldn't divert that energy to community resilience just because some framework told them to hedge their future portfolio.

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[00:22:21] I think for most people, a reasonable posture is probably a mixture of both of these strategies. Some base of robust actions that serve you and your community across futures, plus one or two focused commitments that express what you specifically care about most and enjoy. If you've been watching this whole series, which, quelle surprise, is longer than I intended, you have absorbed some difficult information, some difficult to understand, but also some difficult to stomach.

[00:23:02] Painting out the long repair and other composites was actually, kind of eye-opening and mind-expanding for me. And at some point, most people that sit with this material hit a wall that feels akin to despair. What can I possibly do? These systems are too big. The logic all makes sense, but the physics and the details on energy and complexity are just too constraining, and my individual actions seem like rounding errors.

[00:23:40] I do not pretend I have any good reason to believe that any one of us can personally change the civilizational or biospheric trajectory because that mindset isn't helpful within a predicament larger than any single human against the metabolic economic superorganism. So here's the mental framework that I've arrived at after more than 20 years of struggling with all this.

[00:24:10] Agency becomes real at the scale where you can see the results. And in turn, I think that contributes in unknown ways at the scales that you can't. At the level of your household and your garden and your personal relationships and your neighborhood and your broader community and your ecological watershed, your agency is visible and direct line to it.

[00:24:42] You can see what your actions produce. The soil and your garden responds. This is going to be the best year of my growing potatoes in the last 10 because I made a commitment to weed and mulch and get the potato beetles. So I did that directly.

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[00:25:06] Relationships in your life deepen. Local institutions get slightly better because you showed up to the meeting that you didn't go to before. Every one of those actions begins a switchback on the terrain that's right in front of us At the level of your bioregion, and probably at the level of your job, agency is slower, but it's still real.

[00:25:37] You can shape the culture of your workplace. You can contribute to a network of people who are working on important shared problems. At the civilizational level, agency is a lot harder to feel, but the trends, the systemic shifts are by de-definition the sum of individual choices plus some pixie dust of emergence.

[00:26:06] Your contribution is real even if you can't see it clearly from where you stand. And I think if many of us pursue switchbacks in our own terrain, possibilities open up at larger scales that none of us could have created alone We don't see them, and we probably won't, but they're there. And I've highlighted this concept before in this series, and I'll say it again, because in many ways it's at the core of the ethos underpinning this channel and my organization.

[00:26:43] Constrained futures are very different from determined futures. Constrained futures are very different from determined futures. Our civilizational trajectory is constrained by physics and ecology and the deep patterns of the social primate that is Homo sapiens. This is all demonstrably true. But within those constraints, the difference between the best and worst versions of what's ahead of us is enormous.

[00:27:23] It's the difference between the long repair and the unraveling, to be honest, between communities that hold together and communities that break apart

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[00:27:36] And between a world where your grandchildren can build a real meaningful life and a world that is completely broken for them. And that difference is largely determined by what people do at the scales where their actions become visible. So you don't need to try to save the world to make a difference.

[00:28:01] You don't need to mitigate global heating by yourself. You can act at the scale where you can see the results, and this ties back to the beginning. Protect what matters most. Build what you can build. Accept that your contribution is one of many, and trust that the sum of many people doing this directionally switchbacking in their own terrain, protecting the irreversible things that are near them is the mechanism by which the better futures have higher odds of arriving.

[00:28:42] So over these six episodes, I've tried to share with you the strategies that I've personally thought about and developed for holding and responding to what's ahead, a framework for holding the future, a vocabulary for describing it, a landscape for understanding how to see the terrain, and a few composite worlds for us to emotionally feel the differences, and lastly, some planning logic for acting inside it.

[00:29:15] What I have not done, deliberately not done, is advise you on what to do, which domain to work in or which skills to build first, or which personal commitments you should make, 'cause all those specific actions depend on who you are, where you are in the world, and what you love, and what your capabilities are, and what you're passionate about, what your community needs, what phase of your life you're in.

[00:29:48] So here's some questions, as a coda on this series, and I hope some of these might move from the screen, into your own life. What are you protecting? What are you building? What are you willing to let go of? Where are you

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switchbacking, and where might you be letting things erode, maybe without realizing it?

[00:30:17] Is there a unicorn commitment deep in you, something you love enough to focus on even if the work is narrower? These aren't one-and-done questions for any of us to answer, right away. I invite you to return to these questions as conditions change and as you change. The future is going to keep surprising us.

[00:30:44] That is what the future does. But people who have a method for thinking about it, who can hold multiple possibilities at once And who know the difference between reversible and irreversible, and who can take an aerial view and understand which direction the landscape is tilted. Those type of people will be harder to knock over when the surprise comes.

[00:31:16] That is what I have attempted with this series. instead of certainty and a plan, this framework I've presented is a way of seeing all this that lets you stay oriented even when the ground shifts quite a bit beneath us. Thank you for bearing with me. This has been an investment of your time if you've watched all these.

[00:31:42] there's been a lot to unpack. I will see you in the next one because I've just thought of a way to close this series. See you next week