Why a book on Regenerative CryptoEconomics? Why now?

If you can look beyond the attention-grabbing headlines about NFTS, DEFI, and price volatility, you will glimpse foundational changes to how humanity coordinates.

The internet (1990s - present) changed everything in society that relies on information because computers could now send information across a network without an intermediary. Everything that relied upon information (media, entertainment, politics, news) changed drastically as a result.

The internet of value (2009 - present) could change everything in society that relies on value. Computers can now send value across a network without an intermediary. Anything that relies on value transfer (finance, art, gaming, work, public goods funding) could change drastically as a result.

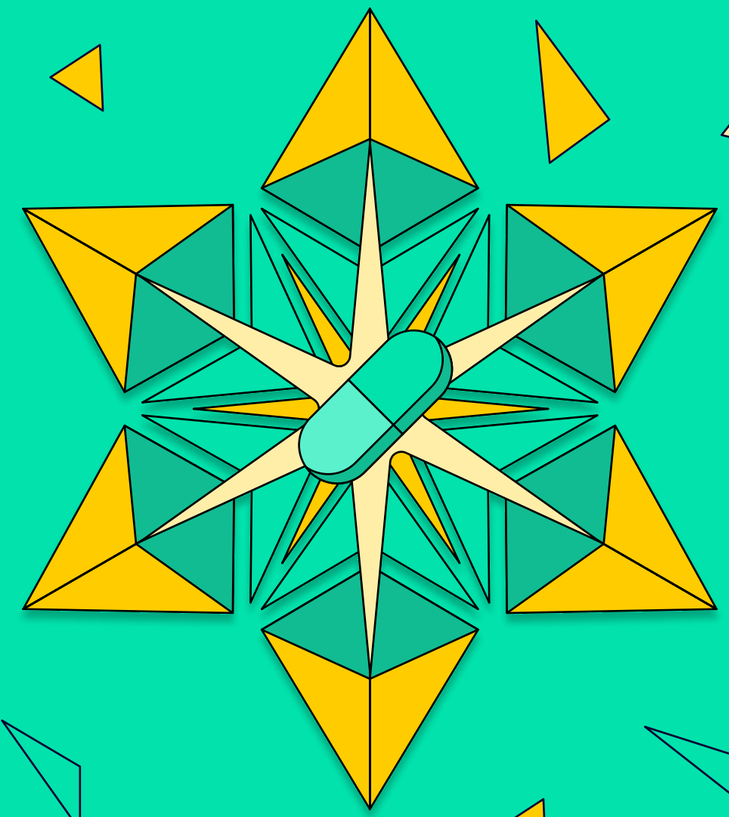
The introduction of web3-era tools like blockchains have endowed humanity with a global, transparent, incorruptable, programmable substrate for human coordination. On this coordination substrate, access is equal, the tools are available for free as open source software. Anyone anywhere can build the next big thing. This is our moment to build a fairer, more regenerative, financial infrastructure for the world. Our weapon of choice is novel mechanism design deployed to decentralized blockchain networks. Our goal is to create human thriving by solving coordination failures. No outcome is preordained - like any technology, cryptoeconomics can be used for common good or personal gain. We must coordinate to leverage our gifts + capitalize on this opportunity for the benefit of humanity at large.

It starts with education. This book is designed to teach the ethos & game theoretic concepts behind regenerative cryptoeconomics to the next generation of dreamers, builders, and internet citizens. From carbon-neutral blockchain networks to global decentralized networks to build & fund public goods, pursuing regenerative cryptoeconomics creates high upside for humanity.

GREEN PILLED — Regenerative CryptoEconomics

GREENPILLED

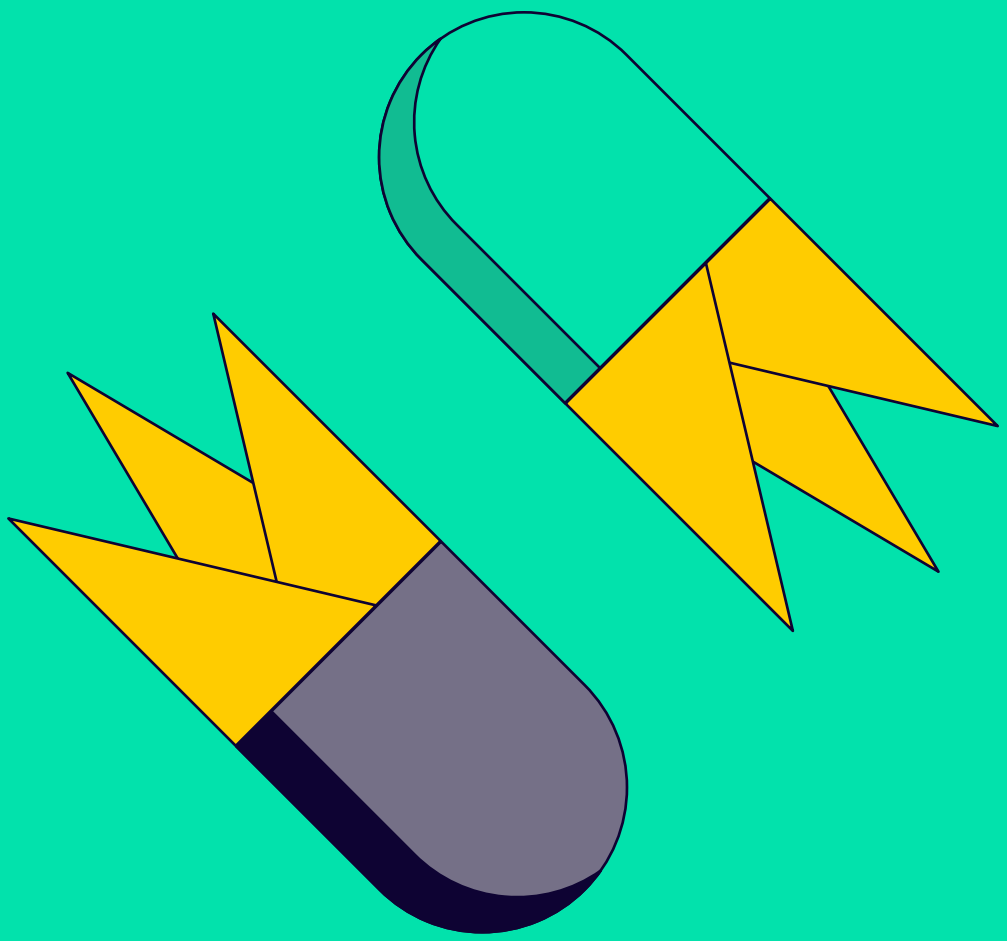
How Crypto Can Regenerate The World



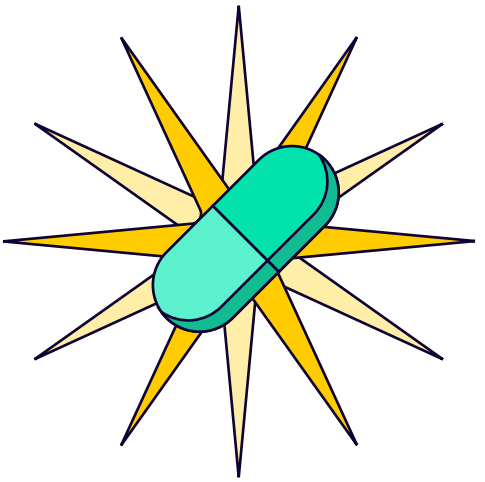
0th Edition

By Kevin Owocki, pixels by Octavian Todirut

Forewords by GitcoinDAO, Glen Weyl, Vitalik Buterin
Danny Ryan, Balaji Srinivasan, & More



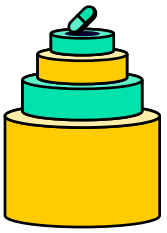
Take the Green Pill, Anon



The TLDR

Humanity is faced with global-scale coordination failures that create systemic risks to human thriving. Our legacy institutions are not equipped to handle these risks.

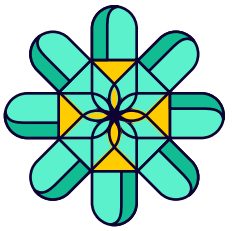
We reject the doomerism left to us by the legacy generations & legacy institutions. We believe that Web3 is a schelling point for the hopeful & we have come together to build a better world for our generation.



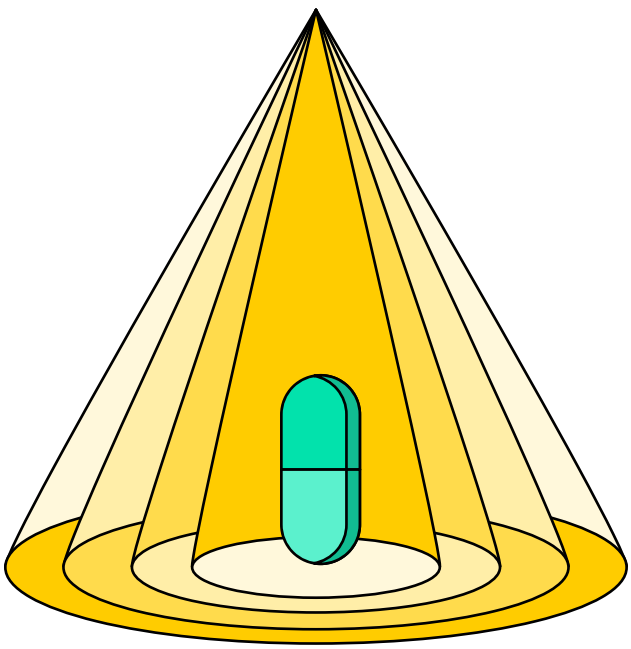
Our moment of opportunity is here. We can build a more regenerative financial system by creating coordination games that leverage the properties Web3 has to offer (global, transparent, immutable, & programmable finance).

Our weapon of choice is novel mechanism designs, based upon sound game theory, deployed to decentralized blockchain networks as transparent open source code.

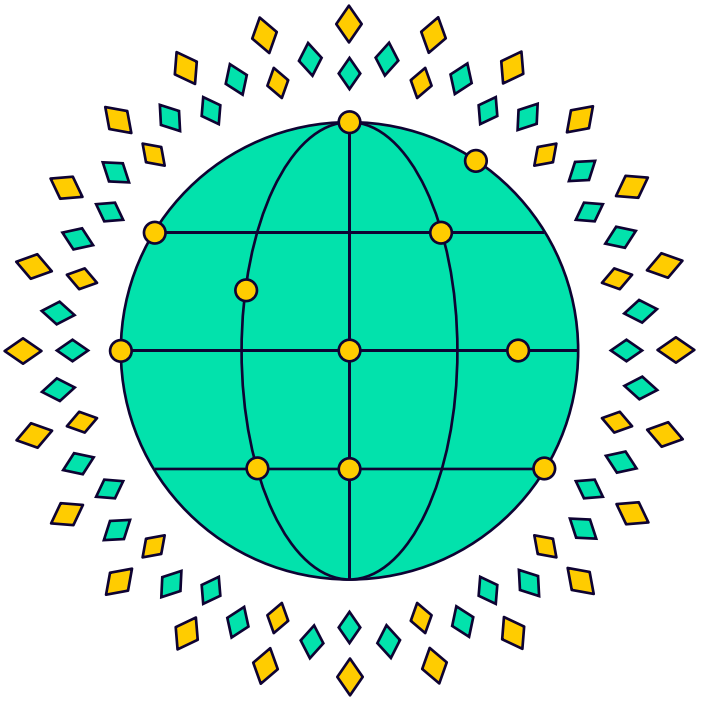
We aim to eclipse the more prolific & more degenerative use cases of blockchain networks & ignite a positive feedback loop for their regenerative use cases by green-pilling tens of thousands of web3-native founders, engineers, designers, and onlookers.



We are bootstraping this virtuous cycle with education. If we collectively choose & persistently reinforce this outcome - As hope begets more hope, and momentum begets more momentum, regenerative cryptoeconomics could become inevitable.



For Generation Alpha.



May you inherit a world that is better than the one your grandparents did.

A word from the lawyers

Not financial or tax advice. This book is strictly educational and is not investment advice or a solicitation to buy or sell any assets or to make any financial decisions. This book is not tax advice. Talk to your accountant. Do your own research.

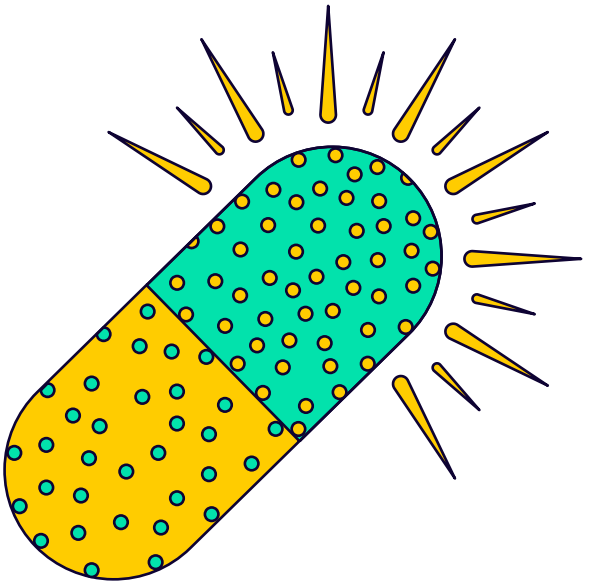
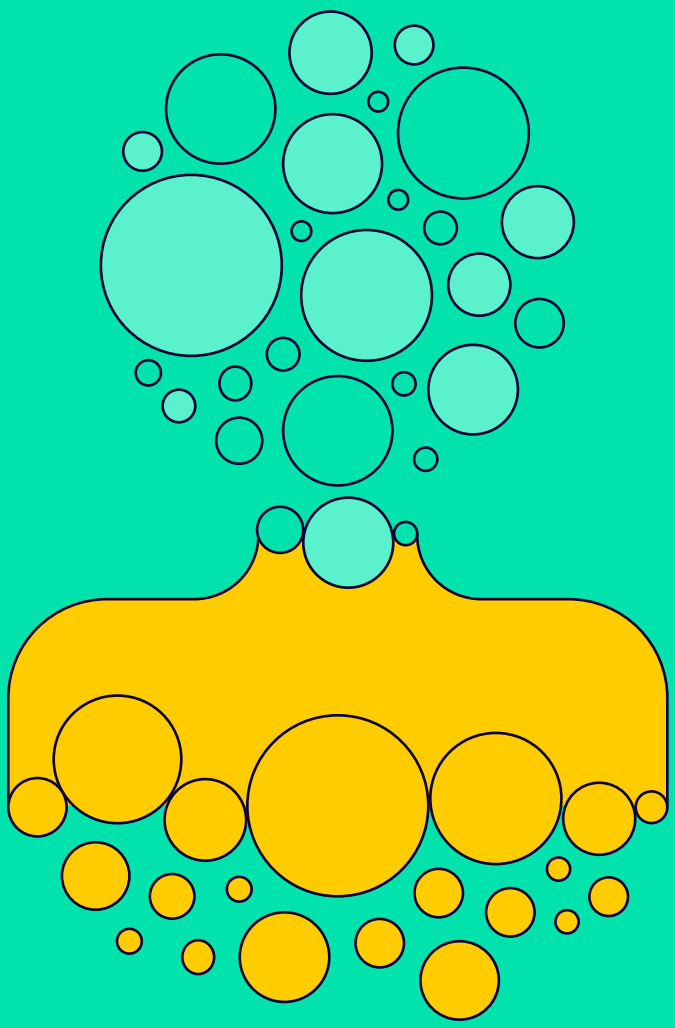
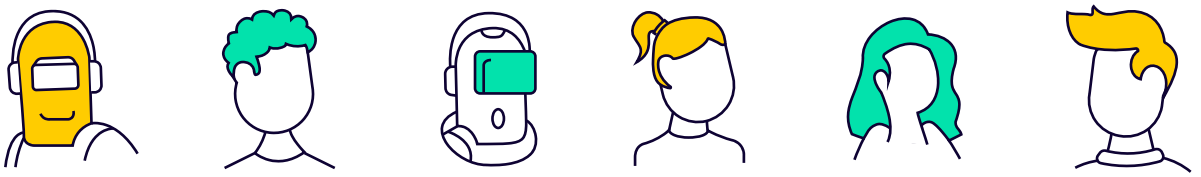


Table of Contents



Forewords from the Frontier



Our vision is to establish an empowering, open and collaborative space where individuals and communities can access resources independent of their geographic location, education, background or offline identity.

By creating collaborative, decentralized funding mechanisms, Gitcoin has become the natural choice for seeding and supporting public goods. The DAO enables building for the public by the public. We help individuals and communities start, fund, and scale open source projects.

We are the EVM whisperers, the DAO cartographers, the internet citizens, and the chaos magicians of the internet of money. We are the schelling point for the hopeful.

We will continue to discover new & innovative ways to solve coordination problems in a DAO-era world. We systematically uncover or invent these mechanisms, and if we're lucky + good, we then scale them.

We are Gitcoin.

BUILT BY THE GITCOIN
COMMUNITY

Austin Griffith

The Quadratic Freelancer

I was stuck writing closed source tools for private companies for a decade. After learning about decentralization and falling down the rabbit hole of smart contracts, I started learning everything I could and I made sure anything I worked on was open source.

To be honest, I probably thought I was going to get rich building blockchain games but it didn't really turn out that way. Instead I fell face first into a rich community and loving ecosystem of Ethereum builders.

I struggled to get funding in the bear market of 2018 and 2019 and was lucky enough to be supported by Gitcoin Grants. Vitalik Buterin called what I was doing a "Quadratic Freelancer" - someone directly working for the public, funded by donations boosted by quadratic matching subsidies.

I earned the equivalent of a full salary building education content, tools, and prototypes on Ethereum. Now I'm reaching a new phase of Regenerative Cryptoeconomics where I'm streaming ETH to builders I'm mentoring!

Danny Ryan

Proof of Stake Ethereum

Ethereum opens up a new realm of human interaction allowing for fundamental shifts in power, value, and organization. This is why I've spent the majority of my waking hours for many years working to improve the Ethereum base-layer, and this is precisely the same reason I'm excited about *Green Pilled*.

The publishing of this book comes at an interesting time in Ethereum's evolution. We are on the cusp of the highly anticipated transition of Ethereum's consensus mechanism – it's heart and soul – from Proof-of-Work to Proof-of-Stake. This upgrade will immediately make Ethereum more secure and environmentally sustainable while improving decentralization so that the platform is neutral and available for all participants, across all contexts.

When evaluating a game – a system of participants, actions, and associated incentives – we commonly assess whether it is positive sum for the immediate players, but we often forget a key player in our assessment – the Earth, the future of humanity. Sadly, many economic games of humanity's past and present have not traditionally accounted for this final player, leading to profoundly negative externalities such as climate change. To make matters worse we are rarely equipped with the tools to understand, or better yet proactively design for, these externalities. Ethereum is slated to become a tool to allow us to better take control of our shared future.

Energy hungry Proof-of-Work set this all in motion, opening up new massively positive sum games, but we can do better. Proof-of-Stake is carbon neutral while simultaneously improving security and decentralization. This has been a long-time coming, but Ethereum is finally ready to make the shift, ensuring that the heart of the platform complements the Green Pilled future we are architecting on top.

Loie Taylor

Blockchains as nations

I'm a believer in the future where blockchains/economies are effectively nations. Not necessarily because it feels right - but it feels likely. Many people already conceive of Ethereum as a nation, but I see it much more broken down. My hope of course is that increasingly, folks of exploited identity groups own their own currency & economies.

So you can imagine a world where if you want some strawberries from a sun-soaked industry where latinx workers tend the crops, you must first purchase their currency. You become a tourist in their nation, which is arranged around shared interest rather than land & military powers.

There's immense benefit to this. Any turn towards justice is based on increasing the agency of the people most closely impacted by an issue. So while a cryptoeconomic future makes you a tourist & having to play by the cultural rules of the true stakeholders in an issue, it also realizes lots of financial dividends for them. When people grouped around a shared interest can be the bank, the lender, the hedge fund, the exchange, the stock issuer & regulator, it is the shared interest itself that benefits from the gains of all those financial activities.

Vitalik Buterin

The Tragedy of the Commons

The vision of collaborative decentralization that guided the original spirit of blockchains like Bitcoin and Ethereum is a compelling and powerful one, but it is also an incomplete one. Blockchains and cryptocurrencies by themselves are designed to support cooperation through private property and markets - tools that works best for one-to-one interactions. Much of what is great about the internet, however, is one-to-many: the very software that blockchains run on, and the academic research and math that makes them work, was written once, and all of humanity can benefit.

Such "public goods" are vulnerable to the tragedy of the commons: because they're available to anyone, including you, regardless of whether or not you personally contribute, it's difficult to motivate people to contribute to them, especially if far more lucrative money-making opportunities are sitting around the corner. Building and sustaining such large-scale public goods well requires new economic models, and even a new culture. Kevin & GitcoinDAO has been at the forefront of thinking through these challenges, and actively deploying and iterating on new ways to bring democratic public goods funding, on the internet and beyond, to life.

Balaji Srinivasan

Crypto-Civilization

Crypto-anarchy sounds cool, but what we actually want is crypto-civilization.

This means having two opposing ideas in mind: that many existing institutions are beyond repair, and that we need new and trustworthy institutions. That's a combination of merited cynicism towards the current system and cautious optimism towards the next one.

Said optimism should be cautious indeed. Existing systems have the implicit wisdom of Chesterton's fence. Even when flawed, there's often a reason they are flawed, as public choice theory explains. Any naive approach may eventually land us in the same pickle, with corrupt institutions characterized by utterance of good intention and substance of bad result.

But what if we put things on-chain? What if we used all the new tools that blockchains provide to produce public goods in an adversarial environment, where all parties know some bad actors will try to game the system, where on-chain actions are finally just as perceptible as digitally signed words, and where we develop explicit metrics for positive-sum outcomes?

That's the promise of regenerative cryptoeconomics. Like renewable energy of the nuclear variety, it helps make crypto sustainable. It's not zero-sum gambling, or negative-sum hacking. It's positive-sum wealth creation. And it's the win and help win of web3.

Griff Green

It's all Coordination

It's all coordination, it always has been. Behind all the number-go-up, number-go-down degen drama on Twitter, the Web3 Regens are steadfast, focused on addressing the systemic root of the major issues that face humanity today: Our failure to coordinate around public goods.

Coordination around individual wants and needs is effortless. Feedback is simple because profit acts as a schelling point. Entrepreneurs can make a business plan, seek investment and if they succeed, everyone involved gets predictably rewarded. This is why we can live in such individual luxury. The coordination required to put a cell phone in so many hands (to pick one of an infinite number of examples) was immense and impactful, yet effortless because everyone who contributed was rewarded along the way.

If you want to create value for society (public goods) - like building open source libraries or stewarding our lakes, rivers and oceans, you have three options: beg, sacrifice or both. Make a roadmap, track your impact, apply for grants, ask for donations, if you succeed, you will get what you need to scrape by. Taxes and donations are the dominant funding streams for satisfying our collective wants and needs. Even though these massive funding streams should be enough to provide abundant public goods for society, they don't because they are difficult to coordinate. Taxes are distributed top-down, making the feedback mechanisms incredibly slow or non-existent. Donations are market feedback, but there is no financial reward for success. In fact, they rely on unsustainable sacrifice from donors, volunteers and everyone else along the way.

Web3 will change this. We are building novel coordination mechanisms to create public goods while rewarding everyone involved. Society has the opportunity to unleash the entrepreneurial spirit into an open landscape of economic potential. We can create economic games that make collective value creation regenerative. Regenerative Cryptoeconomics is Abundance Economics.

Take the green pill, anon.

Abbey Titcomb

A New Hope

As a domain, cryptoeconomics embodies many different alignments. Some would say that its tendencies towards hypercapitalization and gamification are lawful evil. Others would argue they are chaotic good. But then there are those who believe its true good — that its inherent qualities of programmable value, permissionlessness, and censorship resistance beget a path forward for humanity as we seek to solve the global coordination problems that plague us.

These people see an opportunity to reconstruct the systems that control us. To use crypto to design deeply radical socioeconomic futures, where our societal values are not driven by extraction or accumulation, but instead by regeneration and sustainability.

While there is much work needed to achieve these visions, designing and maintaining positive-sum coordination games is a way towards a future of human thriving. This book is a starting point — a quest, maybe — for those who seek to challenge the status quo. It's the seed that will sprout and grow to be the binding force between us as we fight for and build towards a better future.

Regenerative CryptoEconomics is not only coordinating the redistribution of financial capital, but social, intellectual, and cultural capital as well. In their efforts, they've become the stewards & maintainers of a movement — a New Hope™ for public goods, if you will.

Glen Weyl

Towards New Forms of Governance & Democracy

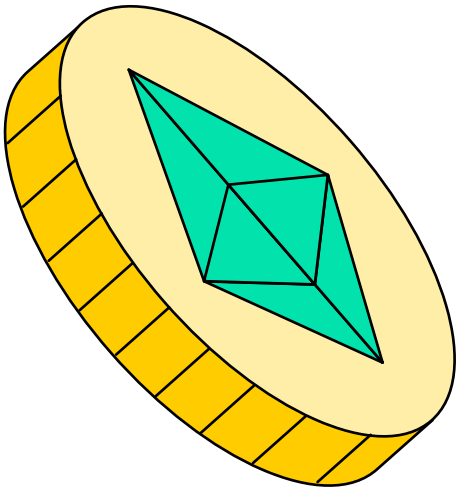
I am deeply ambivalent about Web 3. Much of the space is dedicated to tearing down social institutions that have been central to supporting the development of complexity and protecting the vulnerable, all the vainglorious hope of replacing them with some speculative and highly simplistic new market-driven coordination on blockchains. Simple capitalist markets cannot either the support ambitious technology development or decentralization people in this space aspire to, as they can only organize scale through monopoly. If we want to escape from the trap of building institutions intended for decentralization only to see them immediately captured again by monopolies, we need to get beyond such simplistic thinking and build regenerative institutions that support public goods and increasing returns technology

Yet at its best, Web 3 can be one of the most creative and exciting places in the world for imagining these new forms governance and democracy that can allow people to connect, protect their common interests and build extraordinary new social fabric beyond the constraints of geography and history. Today's world has global interconnections and local communities in patterns that could not have been anticipated by the founders of today's democratic nations and we need a new substrate to make this kind of dynamic democratic governance possible; this is precisely what regenerative cryptoeconomics is about. Kevin Owocki has pioneered this space and has done a great job of capturing both its ideas and culture in this book, one that I suspect will be a shining beacon in coming years as the many who are both thrilled at the potential of the space and terrified by its darker manifestations seek to find a path forward. I look forward to continuing to work closely with him and seeing the next steps of social innovation he and the broader regenerative Web 3 ecosystem will help imagine.

Chapter 0
Introduction

“My existence is not to become a minister for a certain group, nor to broadcast government propaganda. Instead, it is to become a 'channel' to allow greater combinations of intelligence and strength to come together."

-- Audrey Tang



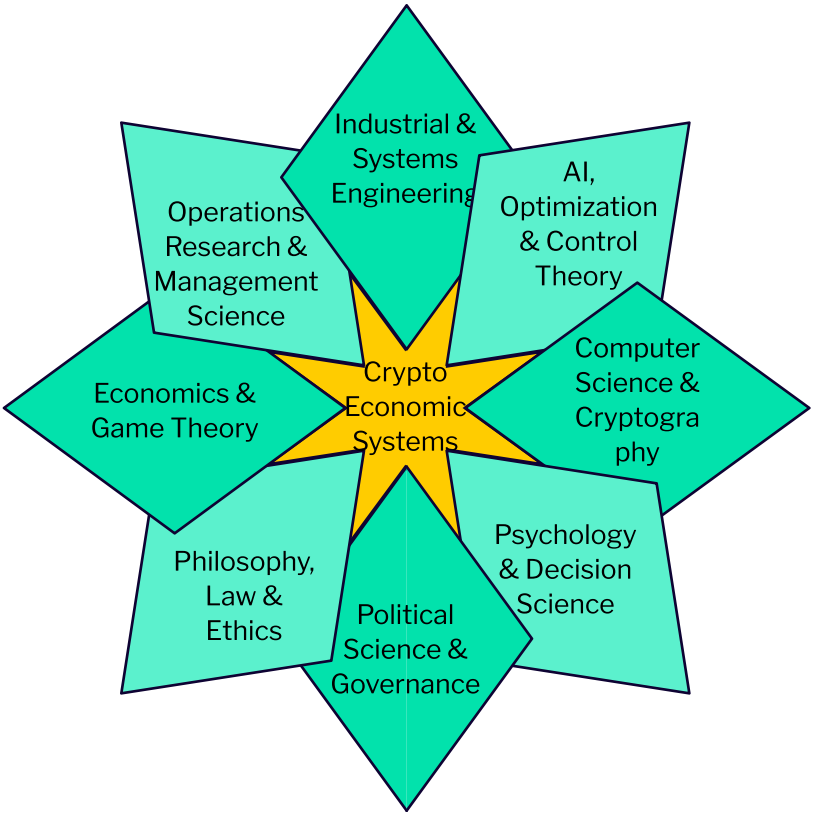
What is Cryptoeconomics?

Cryptoeconomics is the use of blockchain-based incentives to design new kinds of systems, applications, or networks.

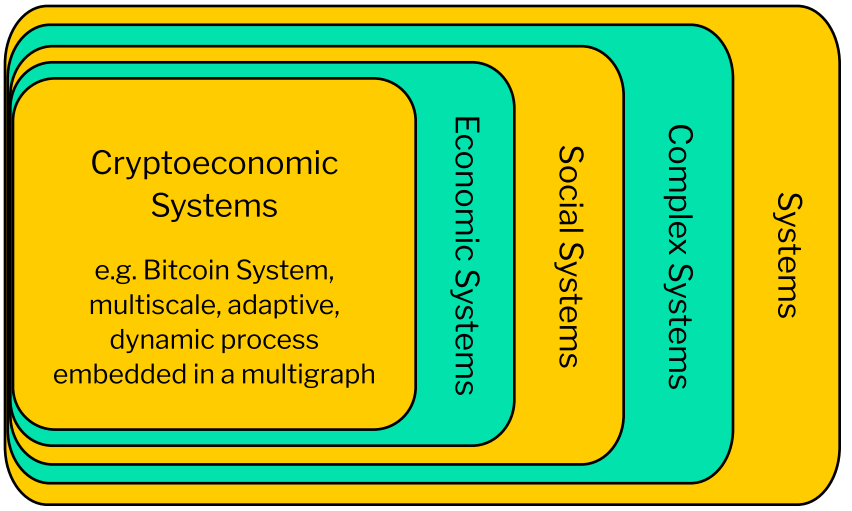
Cryptoeconomics brings together the fields of economics, game theory, psycology, and computer science & leverages them in the creation of decentralized marketplaces & applications.

By focusing on the individual decision making & strategic interaction between different participants in a digital ecosystem, and by viewing them through the lenses of game theory + mechanism design, we can discover powerful new ways to fund, design, develop and market applications and digital assets.

Study of Cryptoeconomics Systems is an inherently multidisciplinary pursuit.



Study of Cryptoeconomics Systems is a subset of the study of other types of systems.

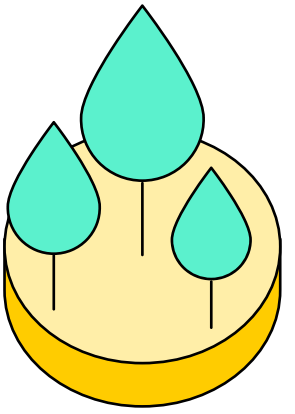


Credit for these diagrams - Foundations of Cryptoeconomic Systems - Michael Zargam et all

What is Regenerative Cryptoeconomics?

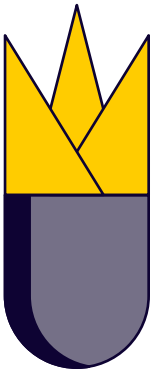
This book is about cryptoeconomic systems that

1. satisfy human needs.
2. create positive externalities (& are net positive).
3. create balance (& find equilibrium).



Regenerative Cryptoeconomic systems have resisted formalizations in the past due to the difficulty in doing so. Where possible, we attempt to overcome this challenge by focusing on theories of human systems that are widely accepted, complementary, or global in scope.

That said - there are real contradictions in the emerging design space of Regenerative CryptoEconomics. There are tradeoffs to be made & there are members of this space that disagree with each other. We advocate a pragmatic approach that measures results, respects nuance, & thoughtfully weighs tradeoffs.



First, Do No Harm

The world is presently embroiled in a debate about the energy usage of Proof-of-Work blockchain systems like Bitcoin. Proof of Work apologists have presented many claims that Bitcoin uses primarily renewable energy, but until there is independently verified evidence, these claims shoulid be treated as spurious. The carbon impact of the Bitcoin and other Proof-of-Work blockchains is likely both large & profoundly negative until proven otherwise.

Regenerative CryptoEconomics systems are systems that are net-positive, and because of that, this book focuses on blockchain ecosystems that consume 99.99% less energy per transaction than BItcoin or Proof-of-work era Ethereum.

Luckily, there are many 2nd-generation and 3rd-generation blockchains that fit this criteria. From this foundation of near-carbon-neutrality, it is possible to create cryptoeconomic systems that are extremely net-positive.

Applied Regenerative CryptoEconomics

Regenerative Cryptoeconomics is a subset of Cryptoeconomics, which is itself is a subset of economics, which itself is a subset of the study of social systems.

We are standing on the shoulders of giants in web3. In this sense, we are interpreting this web3 wave of actors as more of an expression of a historically embedded process than anything novel in itself.

For this reason, this book focuses mostly on Applied Regenerative Cryptoeconomics and on making the subject matter understandable to a more general audience.

In doing so, we would like to acknowledge the influences who have enabled us to understand the design space + have inspired us in our own journey.

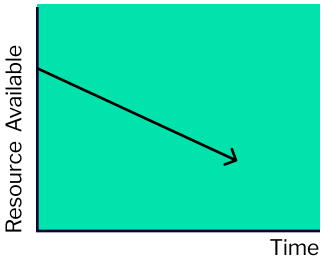
Influences

Projects who have inspired us along the way, in randomized order: Radicle, DoingGud, Dev Protocol, Regen Network, BlockScience, Giveth, Commons Stack, TEC, SourceCred, Codefund, Open Collective, MetaGame, KERNEL, Zcash Major Grants, the MetaCartel ecosystem, Satoshi Nakamoto, CLRFund, MakerDAO, ETHGlobal, Toucan Protocol, Kolektivo, Astral Protocol, Celo, Zcash, Curve Labs, Bankless, Govrn, RadXChange, 1Hive, SporkDAO, Rainbow Rolls, Panvala, ENS, India COVID Relief, Simona Pop, Ethereum Foundation, Deep Adaptation forum, Collapseology, Donut Economics Lab, regenerative leadership groups, MacArthur foundation, & many many others.

Resource consumption types

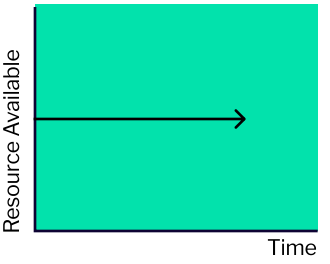
As we define Regenerative Cryptoeconomics around what it is, we should also define it relative to what it is not.

Regenerative Cryptoeconomics can sometimes be resilient or sustainable, but it can not be extractive.



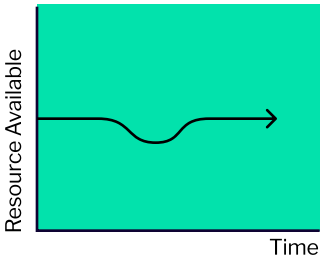
Extractive

The resource is depleted and the system loses capacity over time.



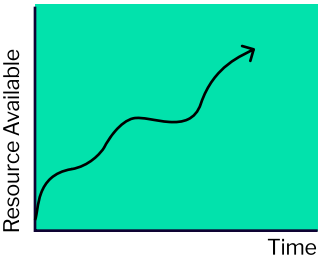
Sustainable

The resource availability is not depleted over time and the system is steady.



Resilient

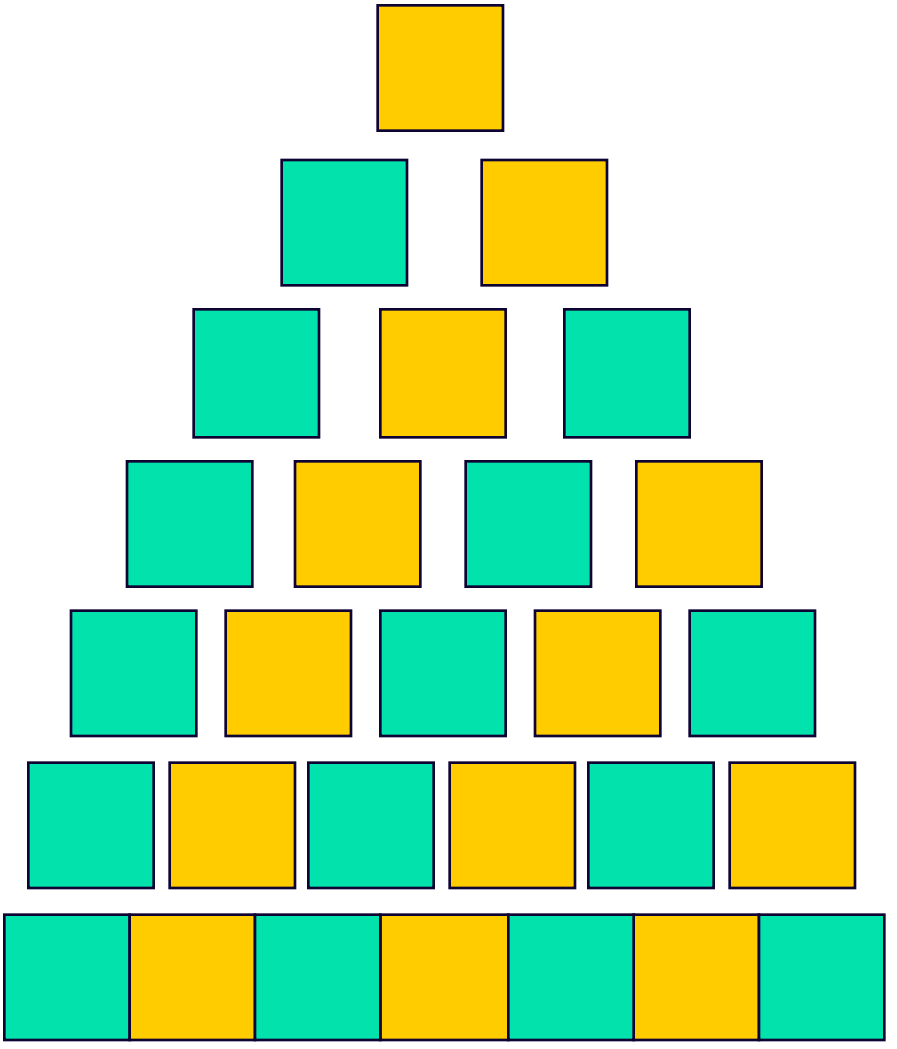
The system is able to recover from a period of shock.



Regenerative

The resources are regenerated & builds capacity sustainably, while being resilient to shocks.

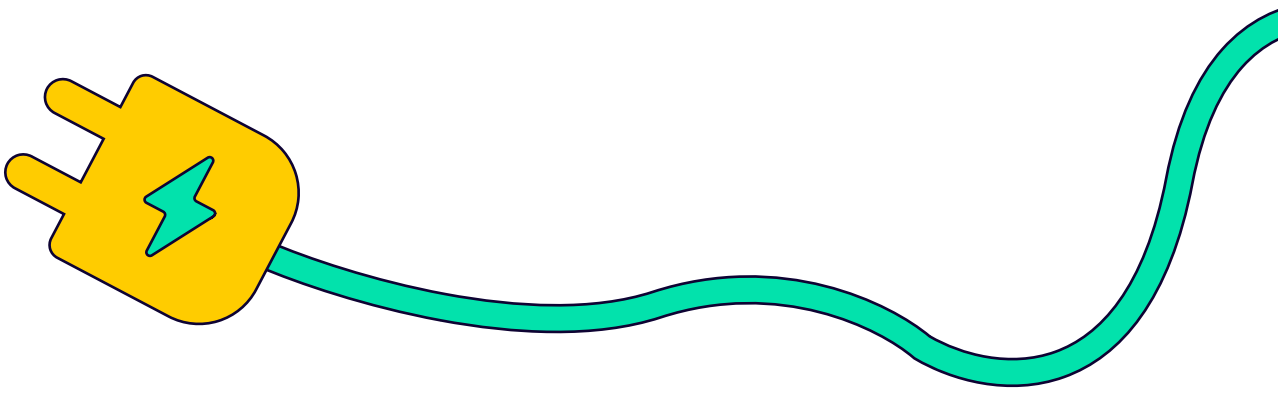
Thanks for Amentum for the inspiration for these excellent graphics: *https://medium.com/amentum/from-walled-gardens-to-community-gardens-c58aca89566a*



The Building Block

An **ImpactDAO** is defined as any DAO that creates net positive externalities to the ecosystem around it.

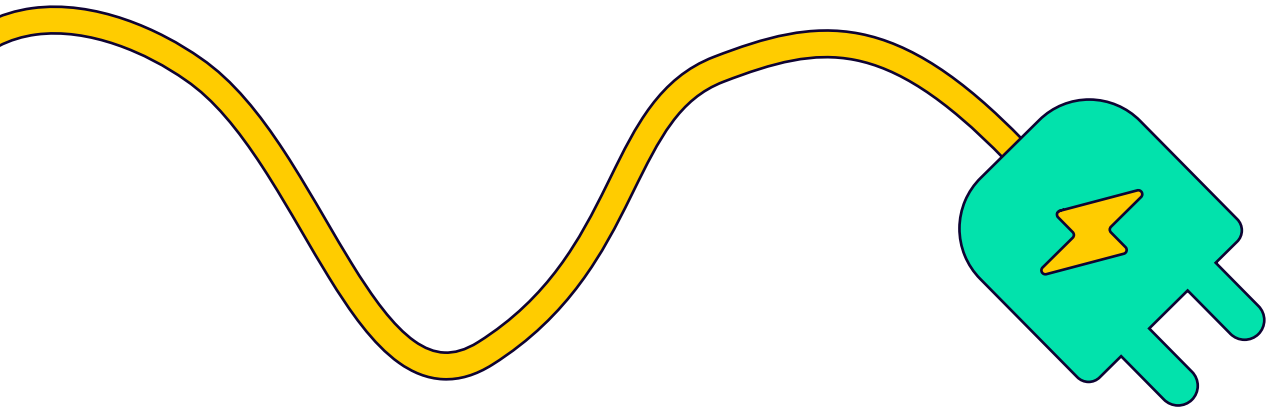
ImpactDAOs are the atomic building block of the Regenerative CryptoEconomic movement.



On Energy Usage

Michael Zargarm, the Founder/CEO of BlockScience, provides this balanced analysis of blockchain-based energy usage:

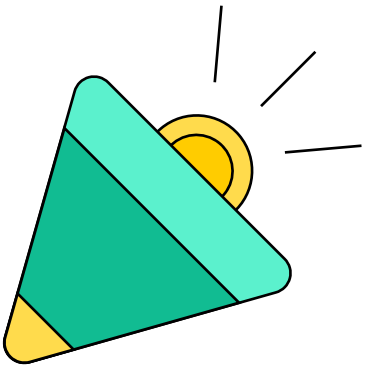
Pretty much every mode of economic production consumes energy. Our global energy appetite is growing (and Bitcoin and more broadly proof of work blockchains) are contributing to that increasing energy appetite. It's true that an increasing appetite SHOULD incentivize more green power research, development and PRODUCTION but experience has shown our response is reactive not proactive. That is to say we remain behind the curve — we need to be shifting off unsustainable power sources not just onto more sustainable ones.



All that said, we should applaud Bitcoin miners who mine with local renewable power by (for example) locating in regions with excess (eg, desert + solar) the same way we treat an other economic production that is ACTUALLY successfully using green energy. At the same time acknowledging that the overall PoW is not special in incentivizing the behavior. It's part of a broader trend in increasing energy appetite so singling it out is also a bit suspect (eg Political).

We should be holding economic actors (including but not limited to miners) accountable for their energy appetites— this means acknowledging those who do the work to source clean power (noting that it's still hard) but also criticizing those who do not do that work (again true for miners but also corporations and governments).

For those not familiar with the economics of energy transmission: moving energy, even with high voltage lines, is lossy. So there are remote areas with high natural energy production where excess exists but transporting it to where it's needed is too expensive and lossy to be feasible. That's the power one can use to mine PoW blockchains in good conscience.



Intended Audience of this Book

This book is a breadth-first tour of ways to frame cryptoeconomic systems to be more regenerative.

The 0th edition is designed for those who already understand at a high level what blockchains are, how smart contracts work, what DAOs are. If this book were a university course, it would be a 401 level course. If that is not for you, that's okay - Welcome to the weird, wonderful & wild world of web3! Spend some time with the numerous & great resources about these fundamentals + come back to this resource after that.

It is possible that an inchoate next-edition of this book could be extended in future editions:
- published in other languages
- highlight the most successful experiments
- extended to a more beginner-friendly audience
- establishing a ratings agency or methodology for regenerative projects
- published, like for real - not just self-published.

The 0th edition is an alpha release

After validating the idea on twitter, I YOLO wrote this book as a side project, between December 2021 - January 2022. They say “If You're Not Embarrassed By The First Version Of Your Product, You’ve Launched Too Late”. Ain’t that the truth!? In the course of writing this book have made many attempts to consult other founders, economists, & designers within (& outside) the ecosystem. But I was not able to include everything I learned. Please excuse that I did not include your favorite idea or DAO! Please excuse brevity, typos, clunky layout or flow, or other imperfections!

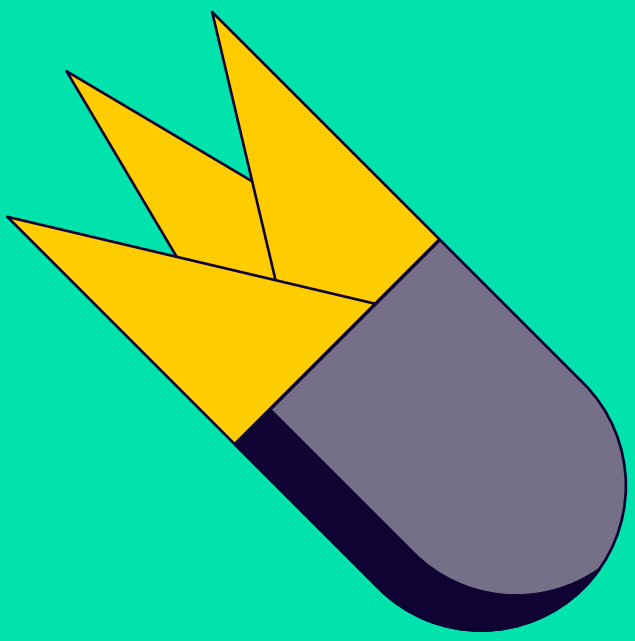
Creating the next edition will be a multiplayer game

The 0th edition of this book was written by myself, Kevin Owocki. I’ve spent many years thinking about, designing, and studying Regenerative Cryptoeconomics via my work founding Gitcoin in 2017 & through the $50mm we’ve raised for building & funding digital public goods since then.

This book represents the limited vantage point of one person. Therefore, the 0th edition of this book is an imperfect vessel for education about Regenerative CryptoEconomics. For the next edition(s), I envision that a diverse group of individuals could co-create resources about the Regenerative CryptoEconomics design space. Inviting a wider set of participants to contribute will enable us to explore the design space in a more inclusive, more full, & more decentralized way. In order to facilitate this:

1. This book is licensed CC BY 4.0. You may permissionlessly fork this book, make changes, and republish them with attribution as long as proceeds go to the public good or charitable causes.

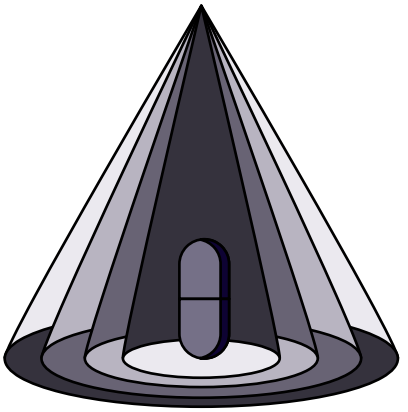
2. If you would like to join the community of writers and educators forming around this book, then please scan this QR code or go to this URL: **https://t.me/+c_BxQmyxXdg2YThh**



Chapter 1
Why
(The Grey Pill)

“All too often, on the long road up, young leaders become servants of what is rather than shapers of what might be.”

— John Gardner



The grey pill = coordination failures

Coordination failure occurs when a group of humans could achieve a desirable outcome by working together, but fail to do so because they don't coordinate their decision making.

Examples of coordination failure

- **Nation-states** refuse to give up Nuclear Arms because they want to defend themselves, despite the existential threat they pose to the world.
- **Consumers** refuse to give up fossil fuel-powered services because they want to get around conveniently, despite the existential threat fossil fuel burning imposes on the world.
- **Users of Open Source Software** consume Open Source Software because they want to build things faster, despite the burnout that cumulative use imposes on OSS maintainers.
- **Individual cells of the human body** live harmoniously pooling their resources for the greater good of the organism; but if a cell defects from this equilibrium, it becomes cancerous—eventually outcompeting all the other cells and taking over the body.
- **Coordination failure can be a self-fulfilling prophecy.** For example, if one firm decides a recession is imminent and fires its workers, other firms might lose demand from the lay-offs & then respond by firing their own workers—leading to a recession.

Coordination failures are Dictatorless Dystopias

Coordination failures are dictatorless dystopias, situations that each citizen including the leadership hates but which nevertheless endures regardless.

From a god's-eye view of a system that has suffered a coordination failure, there is a clear problem. But from within the system, no one actor can create change. Every single citizen hates the system, but for lack of a good coordination mechanism it endures.

Coordination failures are Multi-Polar Traps

A multi-polar trap works as follows:

1. Individual humans want to have a secure digital infrastructure.
2. There is costly work to be done to develop secure open source software, which underpins our digital infrastructure.
3. Since open source software is non rivalrous *(my consuming it does not stop you from consuming it)* and non excludable *(one cannot put clean air behind a velvet rope and charge for it)*, there is no business model for the creation of open source software.
4. This means that each individual actor has a rational incentive to free ride on the system. Why contribute back to a fund the maintenance of this software if I already get it for free? *This is the first trap: the single player trap.*
5. If enough actors choose to free ride, the entire system begins to bear a burden, and if that burden increases to a point of systemic collapse, no one gets these public goods. *This is the second trap: the multiplayer trap.*
6. From a god's-eye perspective, the obvious solution is for everyone to do their part to support Open Source Software—but without a coordination mechanism that makes it rational for everyone to contribute, they do not.

We face global coordination failures

Climate Change is a coordination failure. As individual actors in the world economy, we make decisions everyday to achieve our individual goals. But the actions we take can cause carbon to be emitted, and over time, the collective begins feel the consequences of this - through floods, fires, or increasing global temperatures.

An underfunded & insecure digital infrastructure is a coordination failure. As individual actors in the information ecosystem, we make decisions everyday about what information to consume. Rarely do we think about the free & open source software that underpins that infrastructure. Our global digital infrastructure is not well-funded by governments, as traditional infrastructure is. And those free & open source software providers often do not have a business model - this creates a systemic lack of investment in maintenance of digital infrastructure at precisely a time in which we are increasingly dependant upon it.

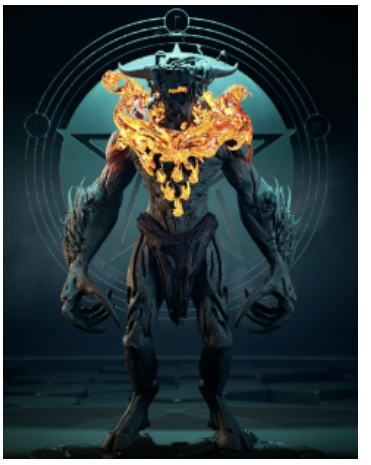
There's many many more: misinformation, inadequate access to education, inadequate access to employment, overfishing, the loss of biodiversity, are all coordination failures.

What's at stake?

When your coastal property floods due to climate change, when an authoritarian is elected to power due to misinformation, when a hospital is held hostage by ransomware because of an insecure internet, each of these create human suffering .

This local suffering is caused by global coordination failure. The scale of the impact of these coordination failures is global, but the impact is local.





Name the enemy - Moloch

Coordination failure occurs when a group of humans could achieve a desirable outcome by working together, but fail to do so because they don't coordinate their decision making. Why is it that when every single citizen hates the system, but for lack of a good coordination mechanism it endures?

From a certain angle, it's almost like there is an all powerful demon out there, manipulating us to prevent our mutual success. This shared psychic manifestation of coordination failure is Moloch - The god of human coordination failure. Moloch is the reason why we can't have nice things. We name Moloch so that we may fight it.

To read more about Moloch, check out this excellent essay entitled "Meditations on Moloch": *https://slatestarcodex.com/2014/07/30/meditations-on-moloch/*

Know thy enemy - Moloch

"Know thy enemy and know yourself; in a hundred battles, you will never be defeated. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant both of your enemy and of yourself, you are sure to be defeated in every battle." -- Sun Tzu, Art of War

The purpose of this book is to articulate the coordination failures we face, so that we may know thy enemy. Once we know our enemy, we are more equipped to defeat it.

Choosing to Face Moloch

As humanity globalizes, our coordination problems are become increasingly globalized. At the same time our ability to deal with these global coordination problems is being challenged. Our generation has inherited decaying infrastructure, declining faith in Institutions, or Institutions that are not enabled for web-scale nor for problems beyond their borders.

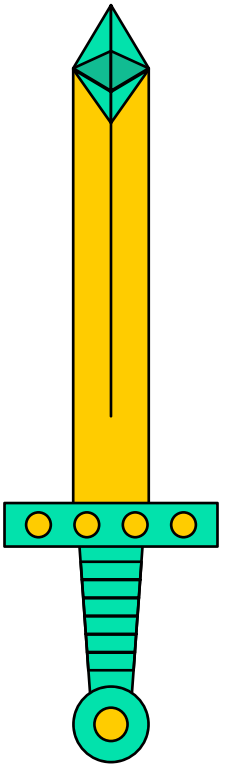
To face Moloch, we must first reject the doomerism we have inherited from our legacy generations & legacy institutions. We need new coordination mechanisms that are equipped to the modern, globalized, world.

We need an incorruptable coordination substrate that is truly global in nature to solve global coordination failures. We have found one. We have discovered a device made of pure coordination, and we choose to use that to fight coordination failure. By fighting coordination failure, we could slay Moloch - the god of coordination failure.

decentralized - cannot be captured by anyone.

sizable - there is $2.1 trillion in market cap in the web3 financial system.

immutable - so that if the founder of a web3 protocol turns evil, then the protocol itself cannot change.



transparent - all code & state is viewable by everyone equally.

programmable - so it can be used to create coordination via novel mechanism design.

global - equally accessible from anywhere in the world.

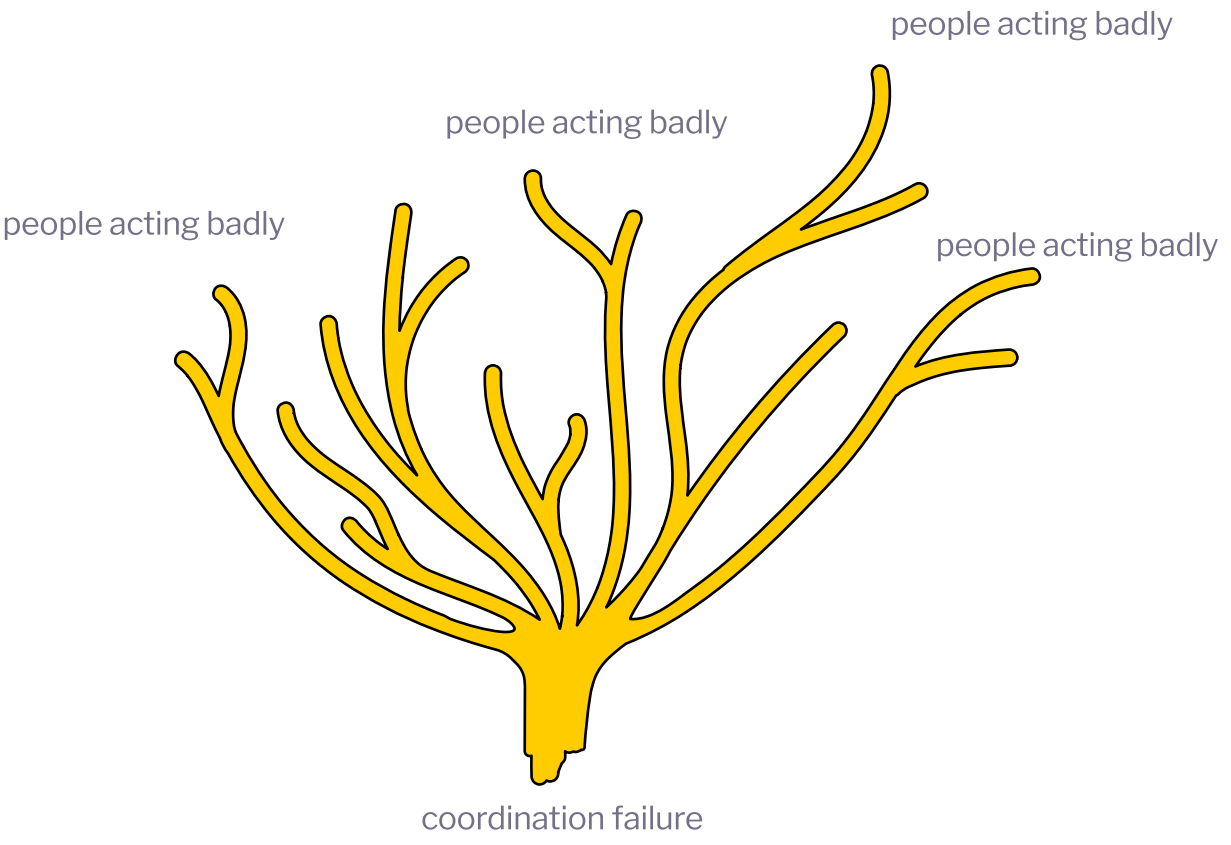
Our Weapon of Choice

Web3 is a global, immutable (incorruptable), transparent, programmable mechanism for human resource allocation. For human coordination. Because web3 is a foundation for coordination, Web3 is a schelling point for the hopeful. We have gathered in the Web3 movement to build a better world. Our central organizing principle is that dont have to live with coordination failures any longer.

Our weapon of choice is novel mechanism design deployed to decentralized blockchain networks.

Is it possible we could slay Moloch? Yes. Is it guaranteed? No. We need to choose it. We'd need to continuously reinforce that choice individually & build systems that reinforce that choice systemically.

All coordination is a choice. What we choose to do when presented that choice is up to us.



Coordination Failure - The Root of Evil

We have established that a coordination failure is a system that no citizen would choose, but for the lack of a good coordination mechanism, it endures.

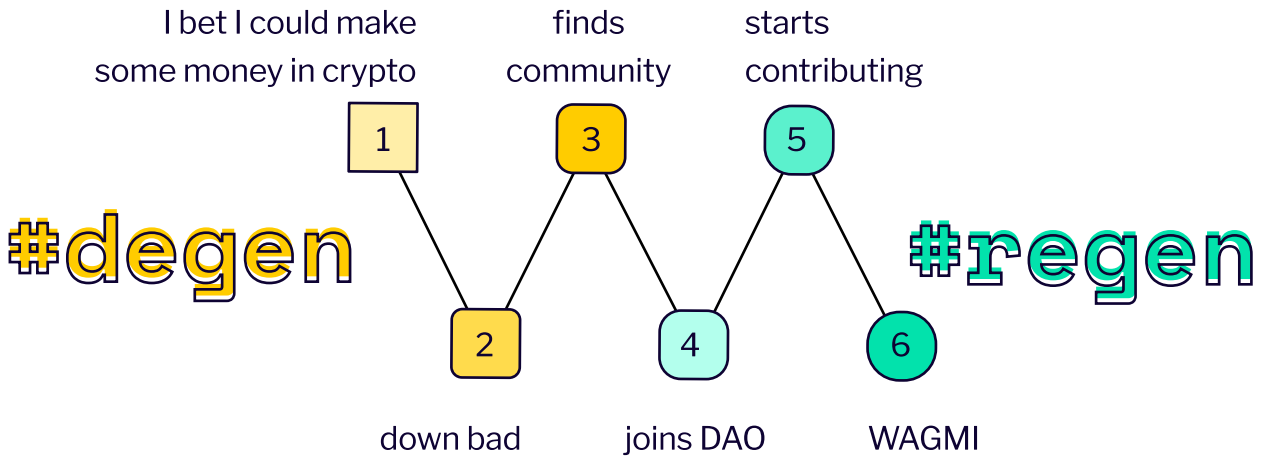
This book takes the position that there aren't many actually people born "bad" out there. Instead, we believe that people are born good, made from 99.9% of the same DNA as you and I, who have been shaped by the systems around them to act poorly towards one another.

Henry David Thoreau once said "There are a thousand hacking at the branches of evil to one who is striking at the root." By aiming to systemically address coordination failures, we hope to strike at the root.

The Degen to Regen Pipeline

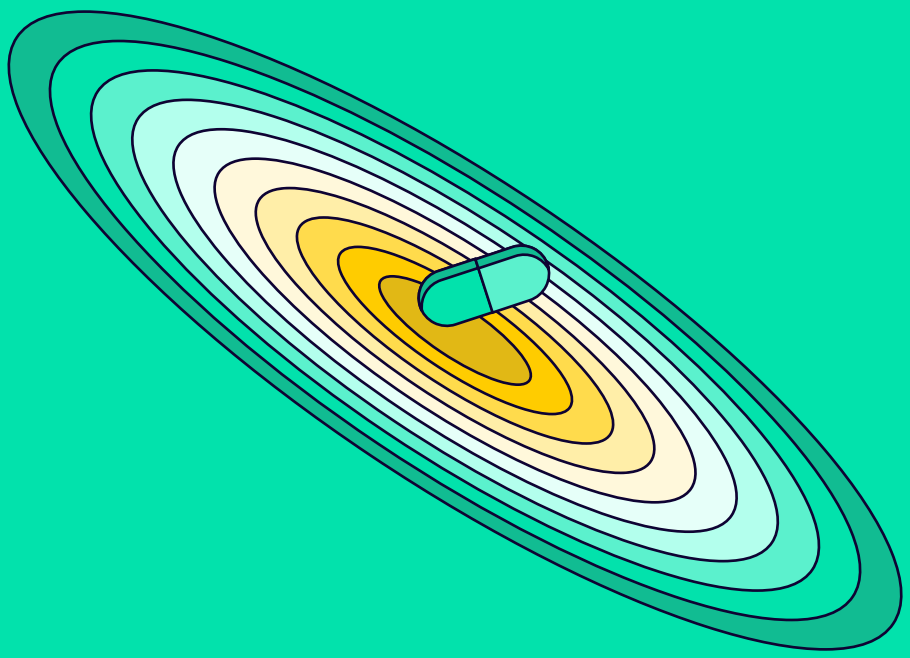
The meme “Degens” came about during the Defi Summer of 2020 - a playful adjective to describe the many many web3 enthusiasts who were yield farming on systems with high APY’s but also (sometimes) high likelihood of failure.

Since then the Degen meme has come to mean anyone who is into web3 for primarily short term economic return. Driven by headlines about the bull market, thousands of enthusiasts enter web3 with the intention to make a quick buck.



Anecdotally, I’ve found that many regens came into the ecosystem through this path. Lured by the promise of better economic circumstances for themselves of their family, they tried to enter the ecosystem to make a short term profit.

Over time, they become more enamoured by the promise of a DAO whose mission aligns with their own value set, and their attitude & incentives shifted. They start contributing, they start learning to manage risk & ride the volatility.

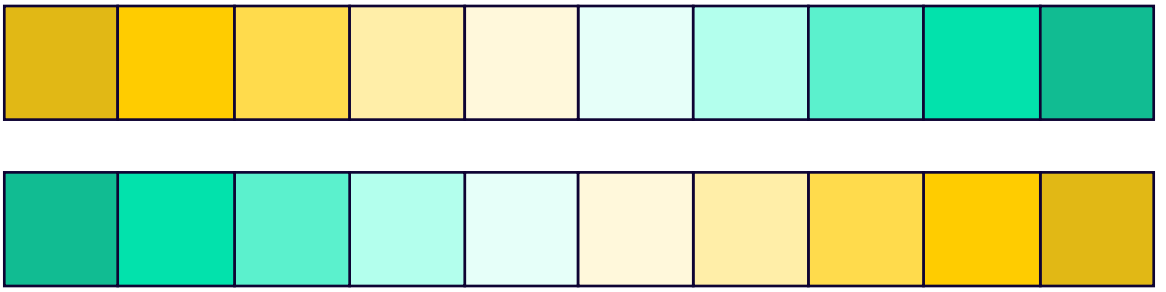


Chapter 2

Who
(Who we BUIDL for)

We build for human thriving.

-- GitcoinDAO Mission Statement.



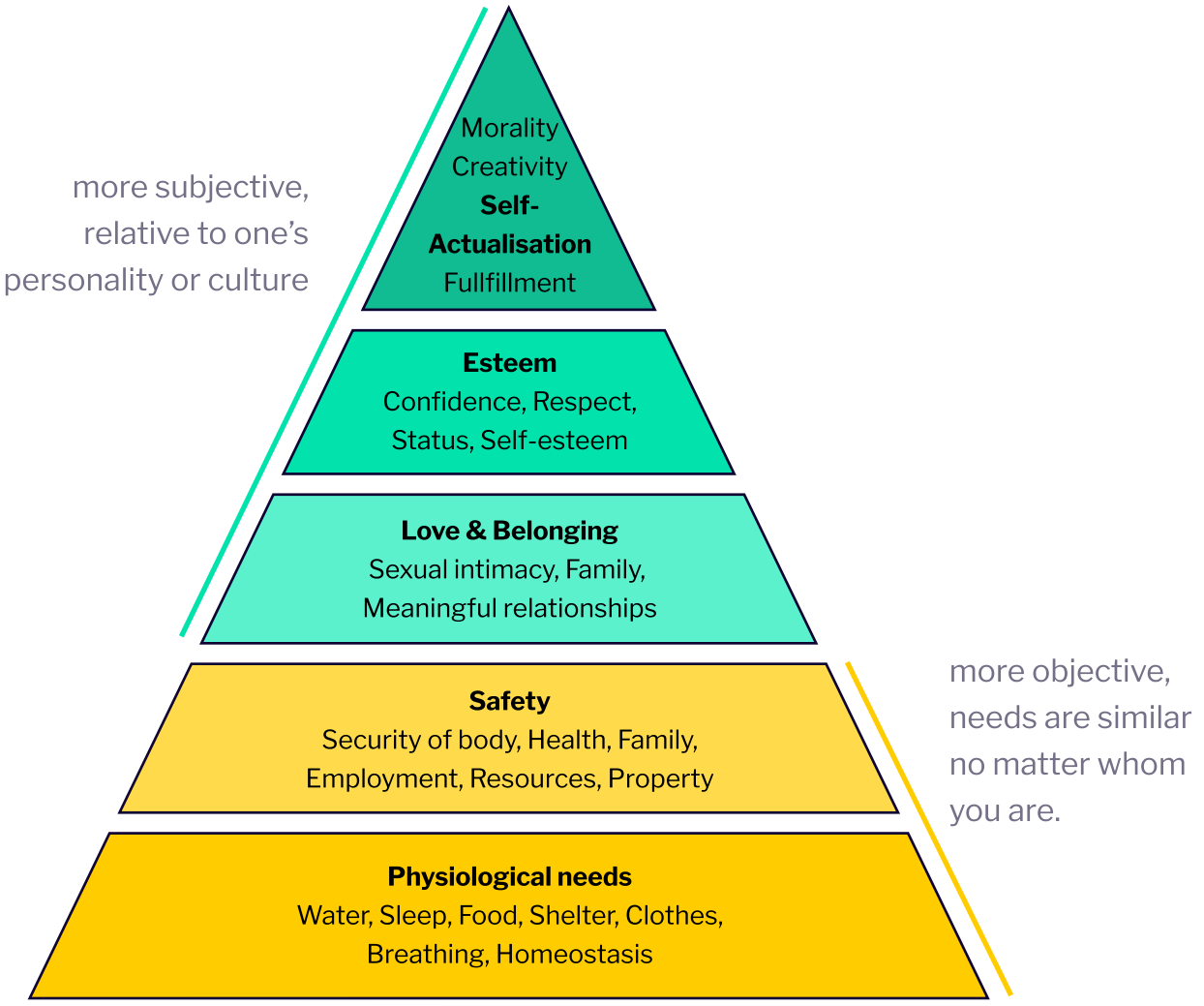
We build for human thriving

The opposite of coordination failure is coordination. To some, optimal coordination creates thriving for a small group of elites. To us, optimal coordination creates human thriving for many.

We are designing a regenerative internet of value to enable the thriving of a diverse global citizenry.

Each individual on earth is a 3-dimensional human, with differing values, cultures, ambitions, backgrounds, geographies, psychological orientations, financial endowments, privilege levels, abilities, & physical or psycological archetypes.

While we celebrate our diversity, we also recognize our opportunity to address the commmon needs that EVERY human has. Beyond just addressing these needs, we aim to enable human thriving.



Maslow's Hierarchy of Needs

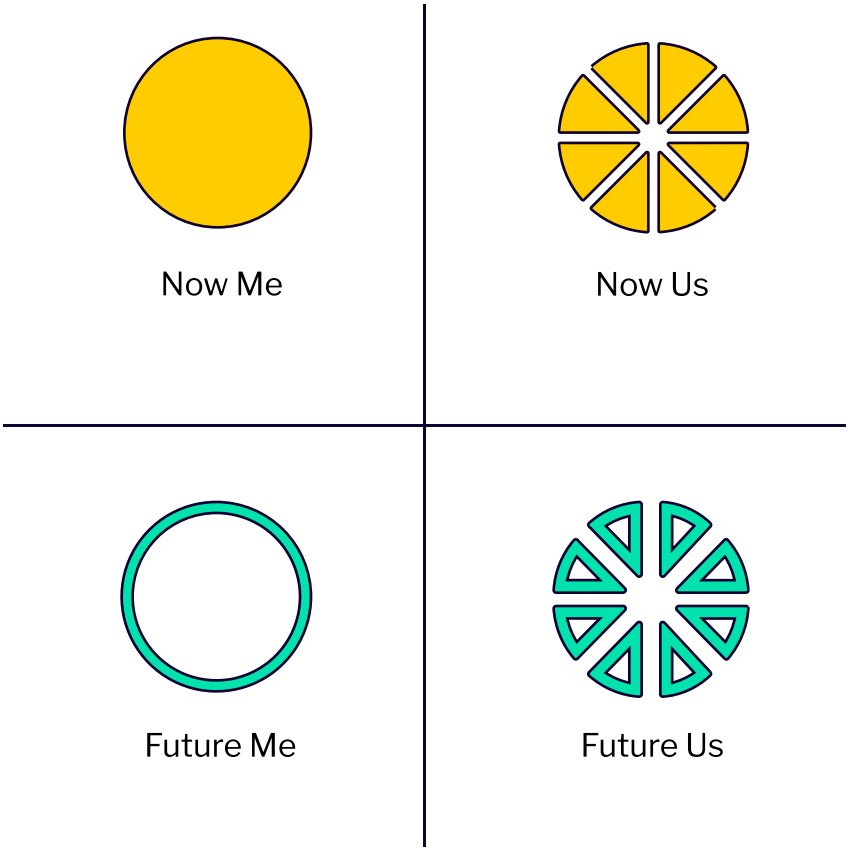
We build for a “bento box” of incentives

Instead of focusing on designing systems for instant gratification (“Now Me”), we propose that Regenerative Cryptoeconomic systems that build for human thriving expand their design goals from gratifying “me” to gratifying “us”, and from focusing on “now” to focusing on the “future.

The result is a bento box of design goals. Instead of designing for “now me”, we design also for “future us”, “future me”, and “now us”.

Yancey Strickler, the founder of Kickstarter, is the author of the theory of Bentoism. Bentoism (an acronym for BEyond Near Term Orientation) is a wider lens for what's valuable and in our self-interest. Bentoism is the theory that self-interest is multi-dimensional.

To learn more about Bentoism, go to the Bento Society’s website at *https://bentoism.org/*



The Bento Box

We build for public goods. The stuff we all use but don't pay for (and sometimes take for granted)

fresh air / herd immunity / open source / public roads / flood control systems / street lighting / open space / lighthouses / parks / journalism / information goods / privacy / public beaches / public television / knowledge

Public Goods are non-excludable and non-rivalrous.

	Excludable	Non-Excludable
Rivalrous	Private Goods (food, clothing, cars)	Common Goods (fish, timber, coal)
Non-Rivalrous	Club Goods (cinemas, private parks)	Public Goods (air, open source software)

We build for needs outside of the financial

One could be fooled into thinking Regenerative Cryptoeconomics is only about finance, but it is not! Finance is a key pillar of human society, and a financial system could be designed that acts as a channel for greater human flourishing and greater combinations of strength & intelligence to come together.

To do that, there are design criteria that must be defined beyond just the financial.

The eight-circuit model of consciousness is a hypothesis by Timothy Leary, that suggests eight circuits of human consciousness and twenty-four stages of neurological evolution.

The 8 Circuits of Consciousness

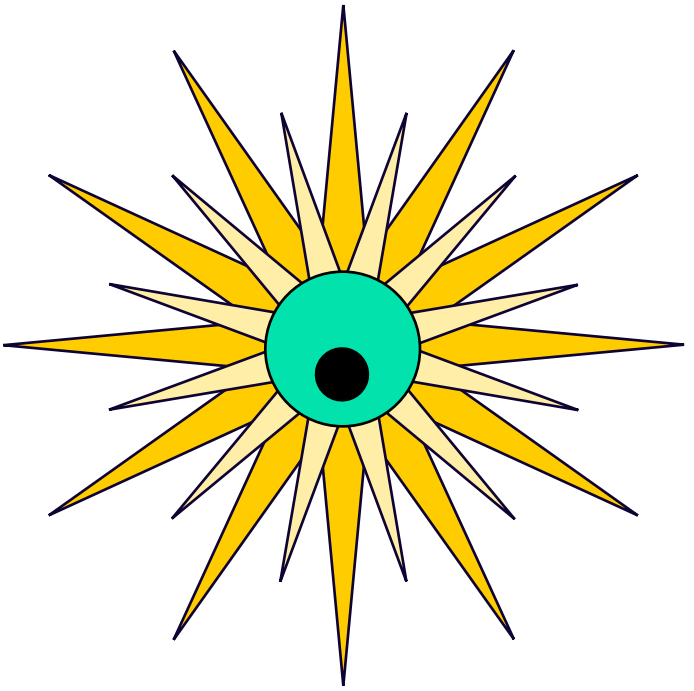
BIO-SURVIVAL (physical intelligence)	NEUROSOMATIC (sensory intelligence)
EMOTIONAL-TERRITORIAL (emotional intelligence)	NEURO-ELECTRIC (metaprogramming / psychic intelligence)
LARYNGEAL-MANUAL (maps and models)	NEURO-GENETIC (evolutionary / mythic intelligence)
SOCIO-SEXUAL (social intelligence)	NEURO-ATOMIC (metaphysiological / spiritual intelligence)

The Eight Forms of Capital

Gregory Landua and AppleSeed Permaculture have published a great resource on the Eight different forms of capital, of which financial capital is only one.

Here is their taxonomy for types of Capital:

Capital	Currency	Complexing to...
Social	Connections	Influence, Relationships
Material	Materials, Natural resources	Tools, Buildings, Infrastructure
Financial	Money	Financial Instruments & Securities
Living	Carbon, Nitrogen, Water	Soil, Living organisms, Land, Ecosystem
Intellectual	Ideas, Knowledge	Words, Images, Intelectual property
Experiential	Action	Embodied experience, Wisdom
Spiritual	Prayer, Intention, Faith, Karma	Spiritual attainment
Cultural	Song, Story, Ritual	Community



We build for the cynics

To the cynics - I wrote this book for you. I've spent time with you, I've broken bread with you, I've been called names by you. Sometimes, I am one of you.

- I understand that there is too much energy expenditure in parts of the web3 ecosystem.
- I understand that there are scams in web3.
- I understand that hypercapitalism can cause harm.
- I understand & believe that some truly awful people have fallen ass-backwards into riches because of early investments in blockchain based systems.
- I understand that you are lacking hope.

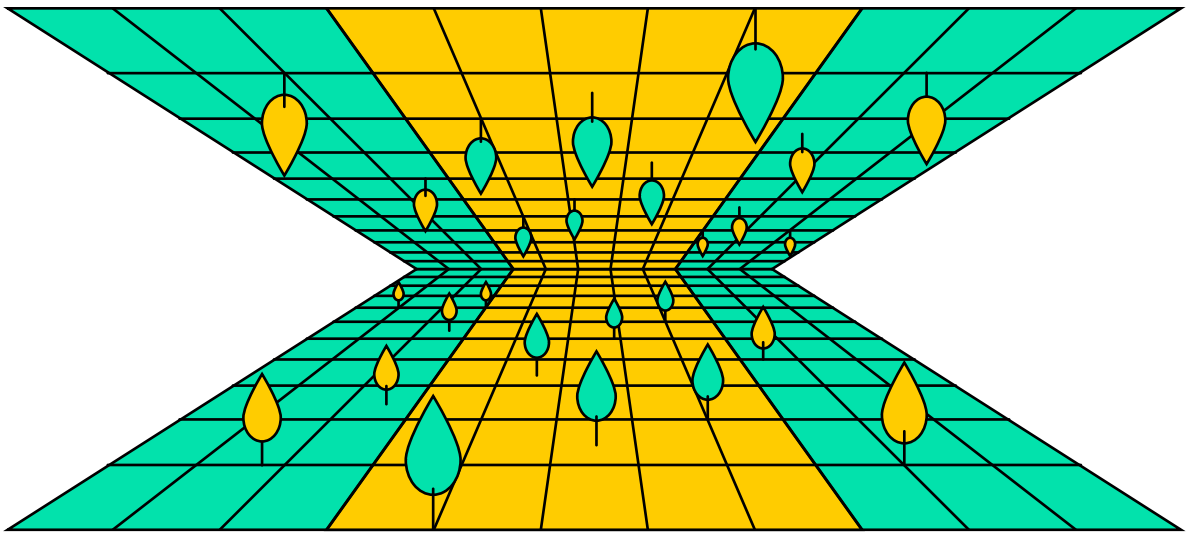
But let's not throw the baby out with the bathwater: there is genuine net-zero emission innovation here that is truly helping people.

After all, if we had listened to the cynics in the late 90s who said things like "the internet is just for porn", we would not have the internet today.

We build to accelerate the good things already happening because of web3.

In many ways, the Regenerative Cryptoeconomics movement is inchoate. But there are a handful of good things that are already happening as a side effect of the web3 movement:

1. There is lots of new pressure being put on big tech to reform. This market-based pressure is complementary to (& separate from) regulatory pressure.
2. There is new pressure to invest in central bank digital currencies & other means of creating more digital democracy.
3. There is an incredible community of talented & civic-minded individuals, and that has opened the conversational space around new political economies.
4. Lots of money has poured into privacy tech that wouldn't have otherwise.
5. Access to western financial instruments like the dollar in places that traditionally would not have had access.



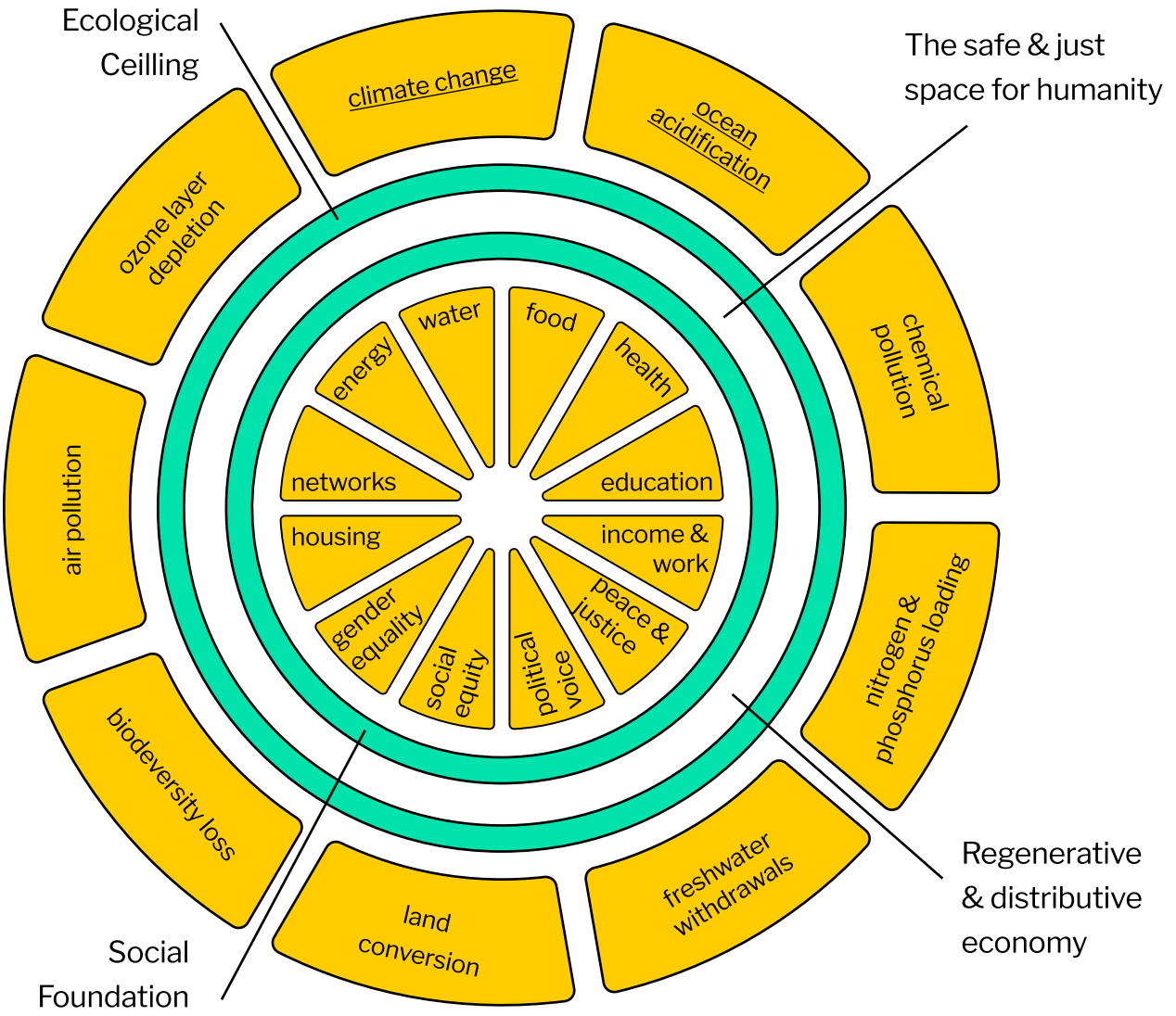
We build for The Infinite Garden

The web3 ecosystem has been described as an “Infinite Garden”

The vibrant communities of developers, entrepreneurs, artists and crypto enthusiasts who are traversing a new economic design space, are rapidly evolving strategies to cooperate, compete, or coexist with one another.

The boundaries between these projects is sometimes not clear - All of these different diverse fauana are growing all over each other, each trying to create as much success for themselves and their own ecosystem as possible.

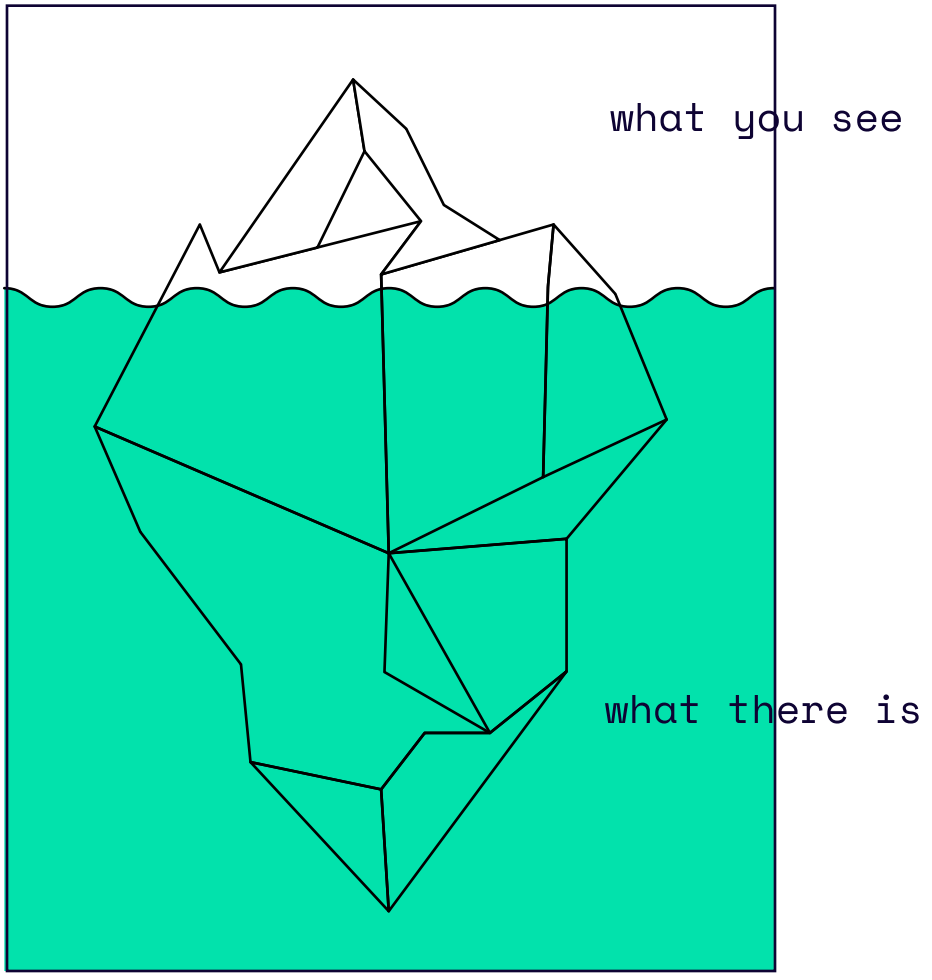
We are in a cambrian explosion of finance, where every paradigm changing project launch can lead to hundreds of copycats. Each project implosion can lead to hundreds running in another direction. We are speed running the evolution of this ecosystem until we get to the crypto-equivalent of mammals.



We build for DONUT Economy

The donut economy framework, developed by Kate Raworth, is a way of understanding sustainable development visually. It combines the concept of planetary boundaries (the outer layer) with the concept of social boundaries (the inner layer). In between the planetary boundaries & the social boundaries, there is a safe space for humanity - to consume “just enough” resoources to meet social goals without crossing the planetary boundaries.

There are web3 projects that are working to tokenize resources in both layers, which - in sum - would allow markets to create the balance between the layers of the system.

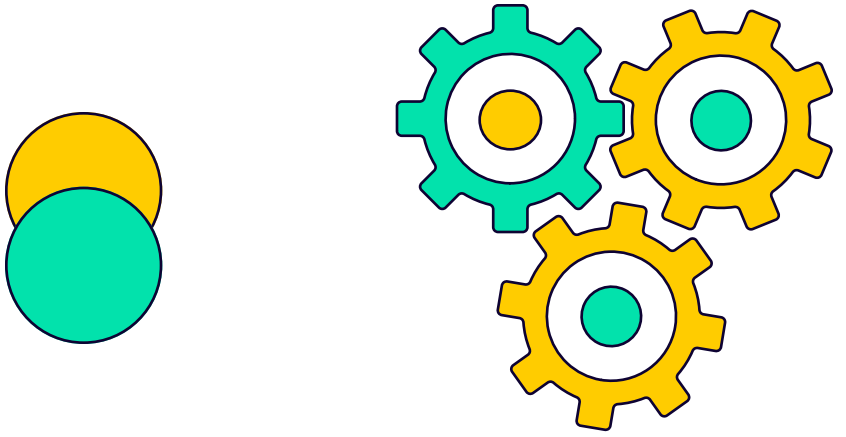


We build to understand the Hyperobject

Hyperobjects are objects which have a vitality to them but you can't touch them. Their effects may be experienced even if they cannot be necessarily touched.

A hyperobject can be an aggregation of networked individuals with the potential to produce profound & unescapable shifts in the conditions of existence.

Web3 is a hyperobject. Many cryptoeconomic systems are hyperobjects themselves.



We build for

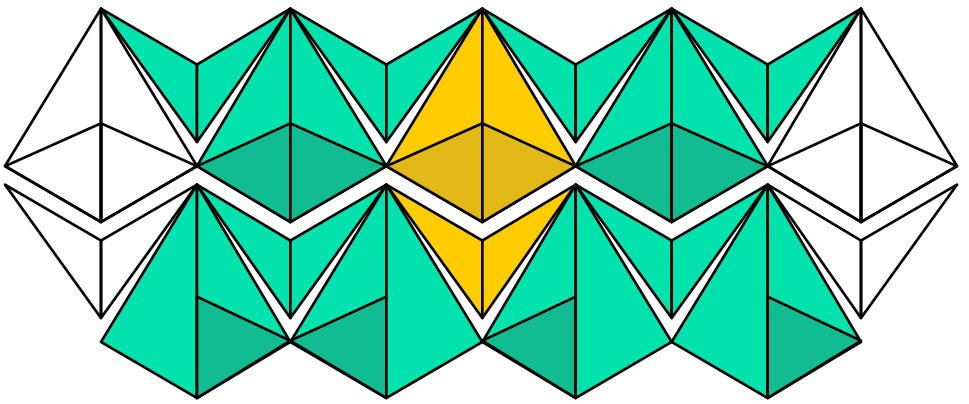
Change of Self & Change of System

When designing coordination mechanisms one should be aware of the delicate (and sometimes complicated) interplay between the systems being designed and the actors who will inhabit those systems.

In 2017, during the ICO boom, there was an overemphasis on “change of system” - thousands of token designers took Charlie Mungers famous quote “Show Me the Incentive and I’ll Show You the Outcome” literally, and assumed if you took a human + you put in a token, you get out an outcome. Turns out, human beings don’t work that way. This is an example of an overemphasis on “Change of System”.

Conversely, it is possible to overemphasize “Change of Self”. In a system with 100s or millions of actors, Change of Self can be a powerful agent of change - but it can also be a drop in the ocean.

This book advocates a balanced approach - it would be prudent for mechanism designers of Regenerative Cryptoeconomics to design their systems around individuals.



We build for a diverse tapestry of values

One interesting opportunity in web3 is to allow different communities to come up with their own currencies that reflect their own local values. By allowing communities to participate in value system creation, we allow them to articulate what is important to them.

The larger a currency may be, the more it reflects global or commodified values. The smaller it is, the more it reflects local values. The end result of an internet of all these local community currencies is like a tapestry of different value systems - Each tapestry weaves the different socio/cultural/economic and ecological games / norms / crypto economic primitives into a tapestry which represents the diversity & breadth of human value systems today.

This journey leads us from the more objective, international sources of trust, to the more subjective and local. From the cryptographically verifiable energy expenditure in a remote data center that is today's Proof-of-Work, to the communally verifiable delivery of life sustaining care work that is tomorrow's Proof-of-Care and Proof-of-Plant and Proof-of-Open-Source-Contribution.

Game B

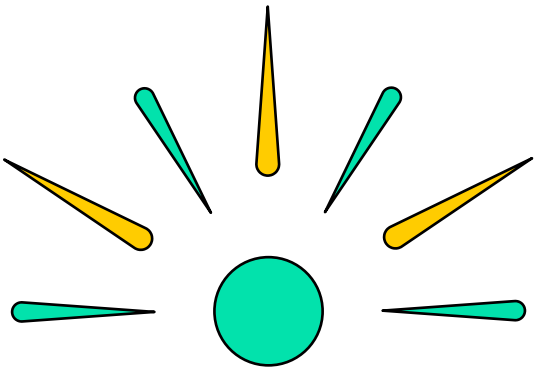
We build for Game B

“Game B is a memetic tag that aggregates a myriad of visions, projects and experiments that model potential future civilisational forms.

The flag on the hill for Game B is an anti-fragile, scalable, increasingly omni-win-win civilisation. This is distinct from our current rivalrous Game A civilisation that is replete with destructive externalities and power asymmetries that produce existential risk.

Yet Game B is not a prescriptive ideology (or an ideology at all): while the eyes of Game B players may be fixed on the same flag, the hills are multitudes and the flag sits atop each, and no player individually is equipped to map a route in advance.” ~Game B Wiki

To learn more about Game, B, checkout the Game B wiki at *https://www.gameb.wiki/i*



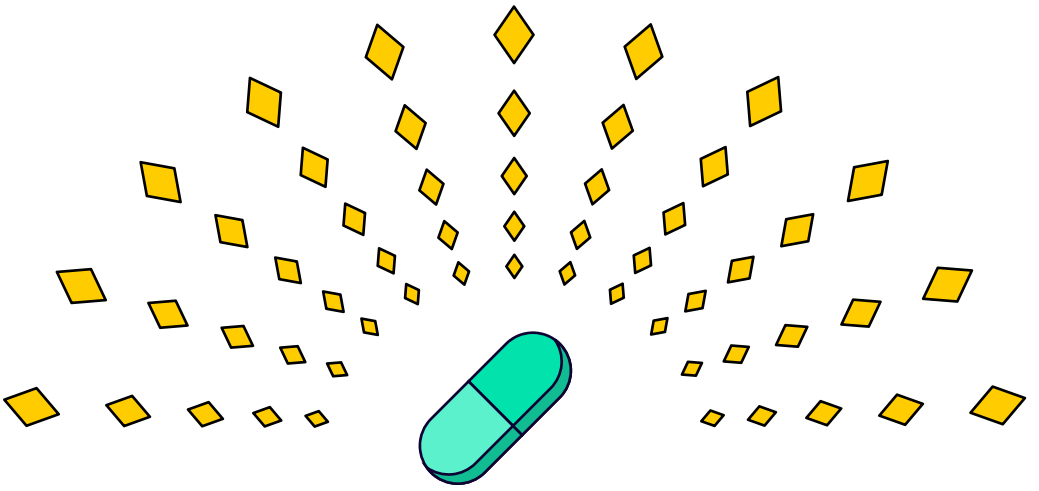
We build for the homesteaders of the Metaverse

In 2021, the Metaverse has become a hot buzzword - meaning many things to many people. To us, the Metaverse is a world increasingly intermediated by the digital.

In web 2, there are no digital property rights. We were all serfs on Facebook or Twitter or Googles land. In the web3 metaverse, the hope is that there is true ownership of the digital by the individuals who inhabit it.

How does the web3 metaverse get built without the massive warchests that the tech giants use to subsidize the buildouts of their metaverses?

Regenerative Cryptoeconomics at scale would ensure a funding of digital infrastructure that is not owned by any tech giant. By providing funding for the public good to homesteaders in the metaverse, Regenerative Cryptoeconomics will make it more likely that the web3 metaverse wins.



We build for human thriving

We build for a “bento box” of incentives

We build for public goods

We build for needs outside of the financial

We build for the cynics

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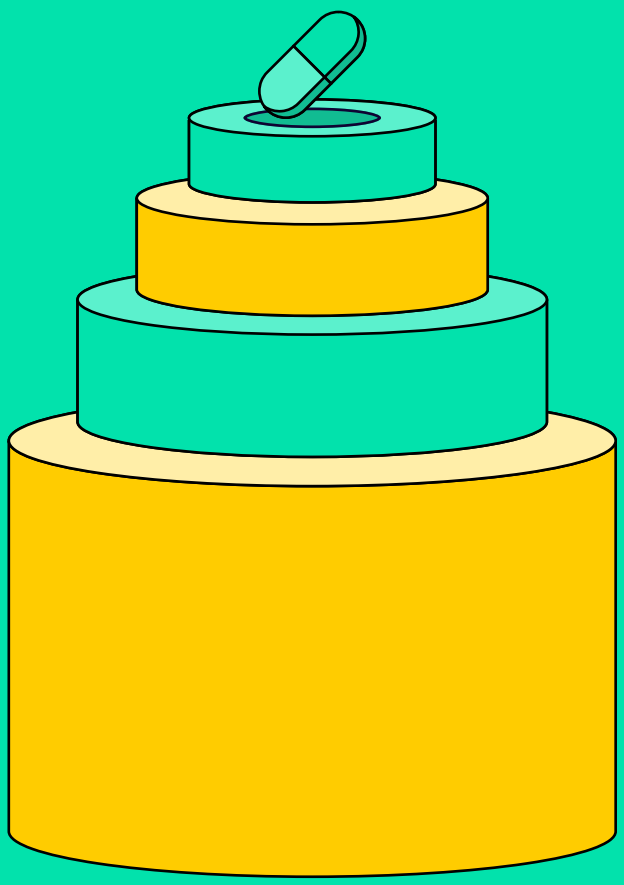
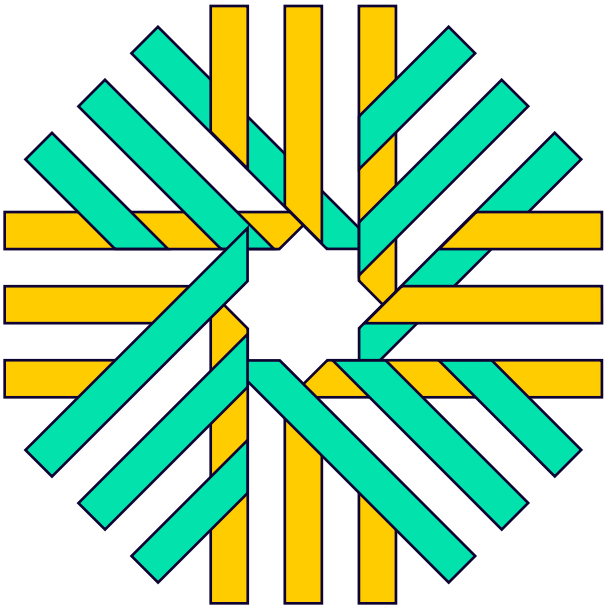


Chapter 3

When
(Our Moment of Opportunity)

We are called to be
architects of the future,
not its victims.

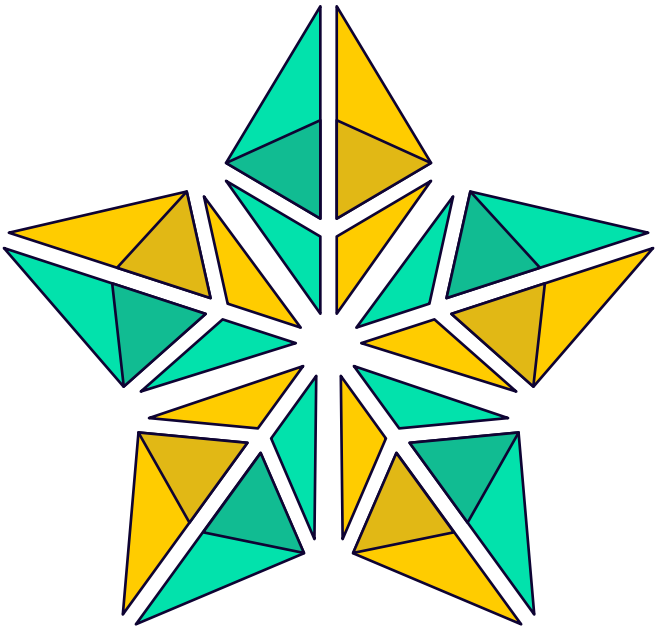
-- R. Buckminster Fuller



Web3 is a Schelling Point for the hopeful

We reject the doomerism left to us by the legacy generations & legacy institutions. We believe that Web3 is a schelling point (a gametheoretic focal point) for the hopeful & we have come together to build a better world around it.

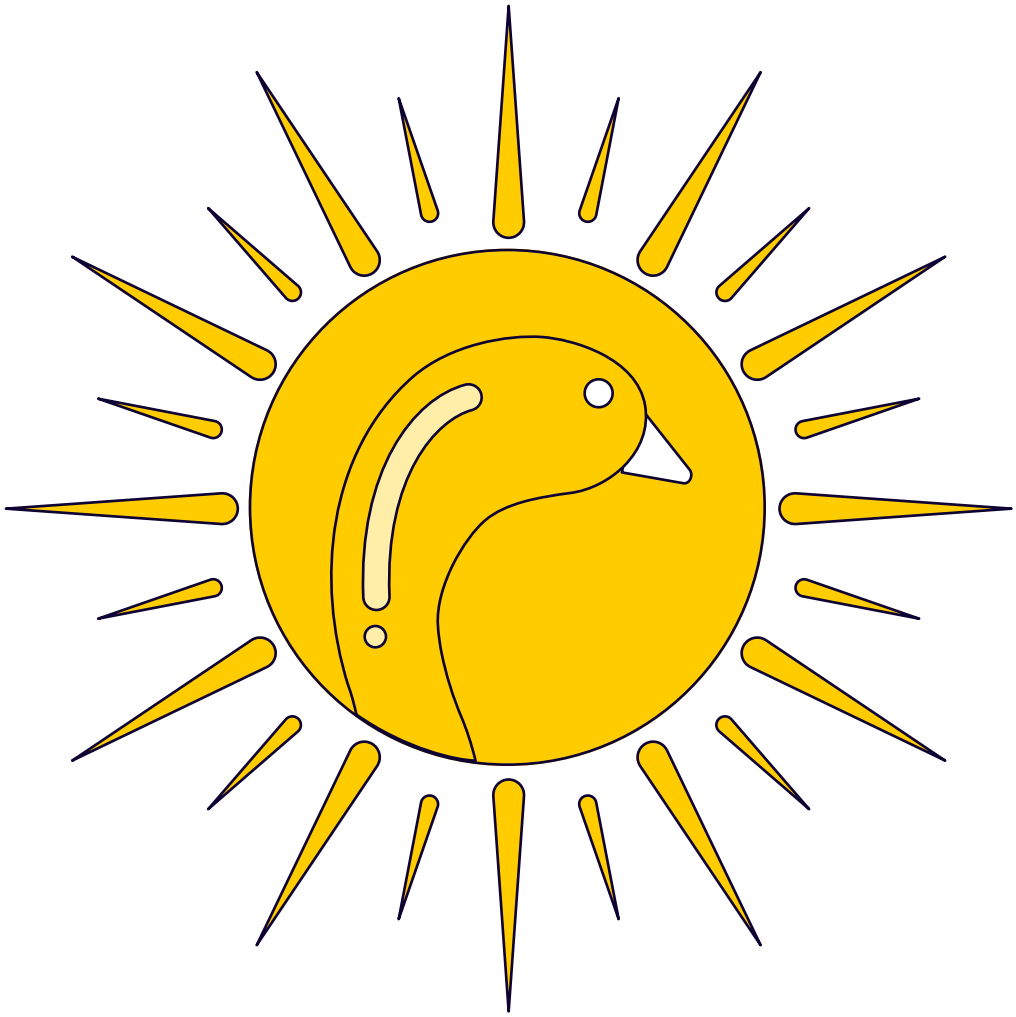
Our weapon of choice is novel mechanism design deployed to decentralized blockchain networks. By co-creating this schelling point, we will reconnect with why we're *actually here* & accelerate the narrative of regenerative cryptoeconomics.



Web3 is a more solid foundation for human thriving

Web3 is a global, transparent, immutable, programmable substrate for finance. This is our moment to build infrastructure for regenerative financial infrastructure for the world.

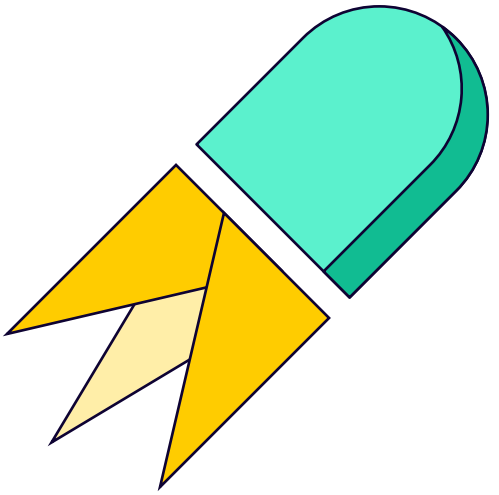
The goal of this book is to document & teach the game theoretic concepts behind regenerative cryptoeconomics.



$2.1 Trillion

Value of the Open Source Financial System

(as of Jan 2022)

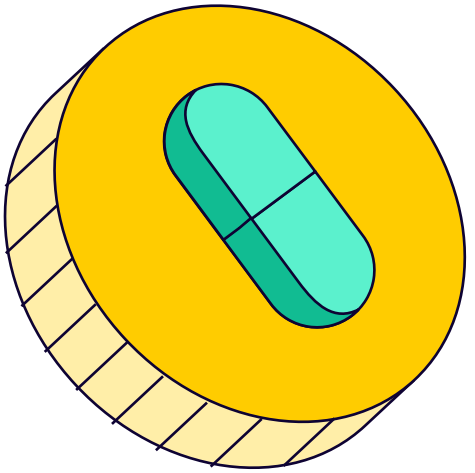


What if we could use all of this capital for good?

The idea, from first principles:

1. There's $2.1 trillion in market cap in blockchain based networks.
2. It's all built on open source software (a public good).
3. We can redirect some of that capital to support the public good.

All of the money that used to go to some back office on wall st in the old financial system will now go to Open Source Software. Given the rational need to prevent black swan events (like hacks, unexpected downtime, etc) by supporting the digital infrastructure beneath our digital assets, It should be possible to build an aqueduct to financially support the most necessary public goods.



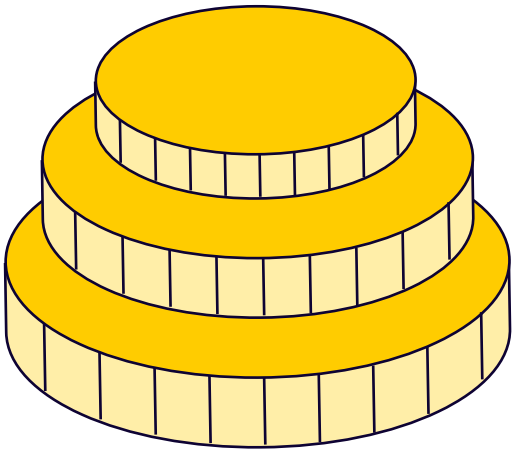
With programmable money, we can program our values into our money

The idea, from first principles:

1. We value Public Goods.
2. With programmable money, we can program our values into our money.
3. We can make Public Goods sustainable financially.

With a Turing-complete smart contract programming language, programmers can now design economic systems around their values.

This is of course a double edged sword, as value-systems can vary widely. By aligning incentives of many participants, system designers can create economies that externalize good as widely as possible.

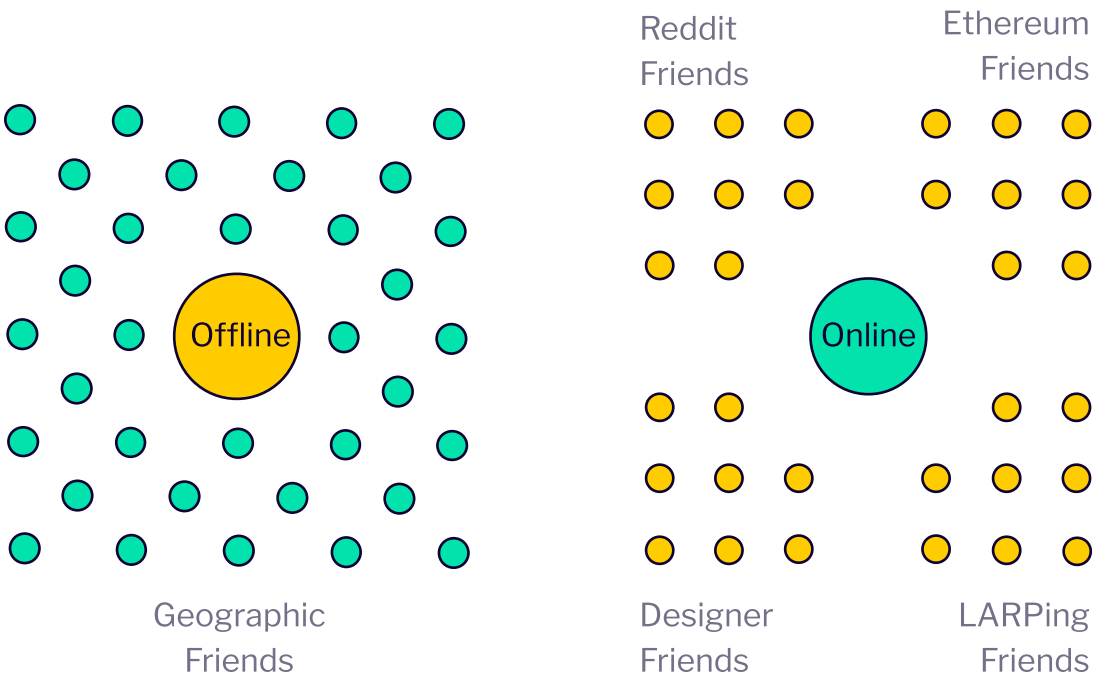


We can create new non-skeumorphic use cases of finance

The idea, from first principles:

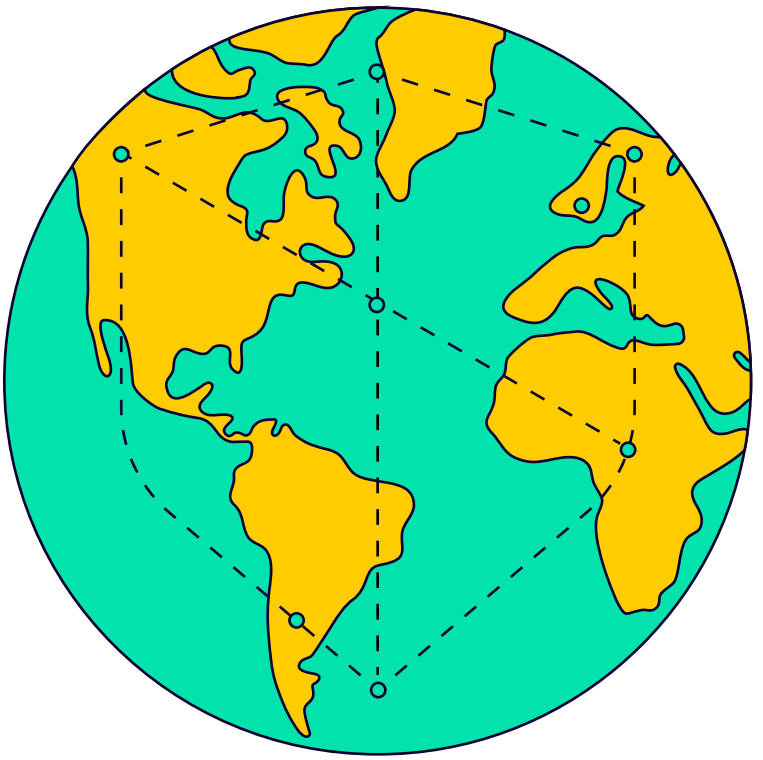
1. The internet brought us novel uses of **information services**.
(For example, we now use IM, twitter, RSS, or Email more than we use the postal system)
2. The blockchain can bring us novel uses of **financial services**.
3. What kinds of novel uses of finance will emerge? Which of those will be able to fund public goods or other human thriving?

Skeuomorphism is the design concept of making items represented resemble their real-world counterparts. The most interesting & revolutionary uses of regenerative cryptoeconomics will be non-skeumorphic (they could not have existed before crypteconomics did).



In the past, Trust Networks were local

In the old world, trust was oriented around relationships which were based upon our geographic locations. On the internet, we have niche interests, and our networks of relationships are built around them.

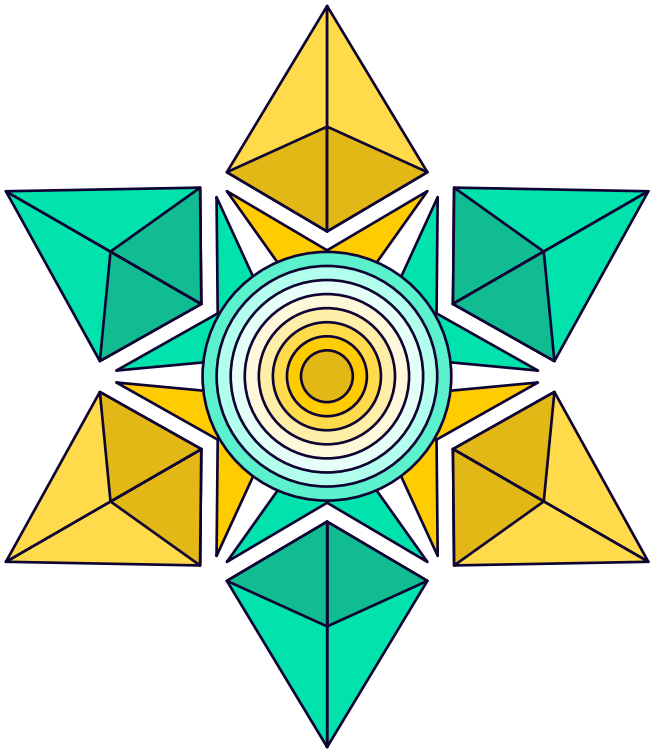


We can now Build Global Trust Networks

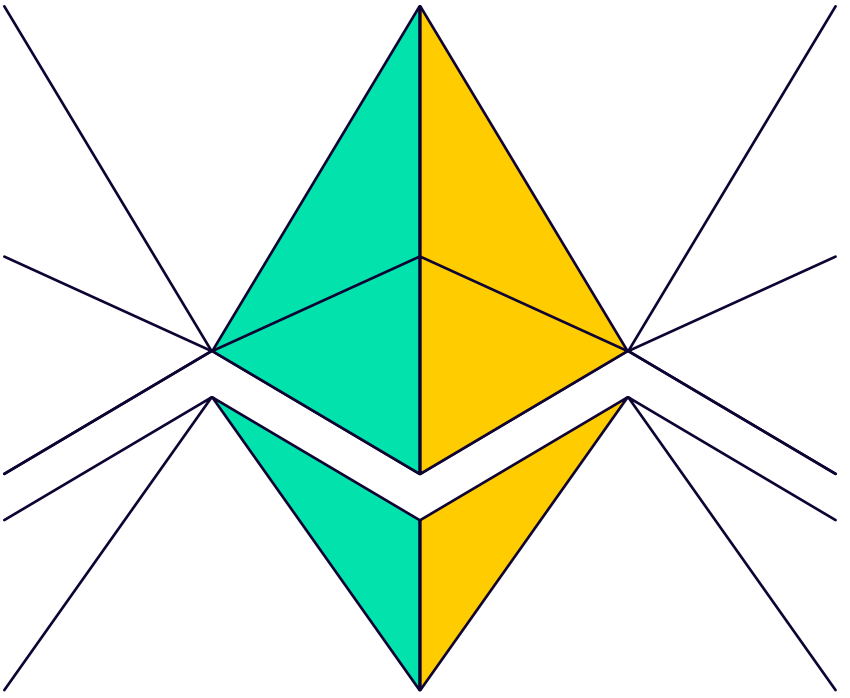
Niches are the new nation states. Each niche has its own network of participants, and could one day have infrastructure for public good build around these global trust networks.

Local Networks <> Global Networks

As trust begins to flow world wide, but we retain our physical presence, there will be numerous confrontations between (and integrations between) digital/global networks of actors + physical/local networks of actors.



We can build a financial system that acts as a channel for greater human flourishing and greater combinations of strength & intelligence to come together.



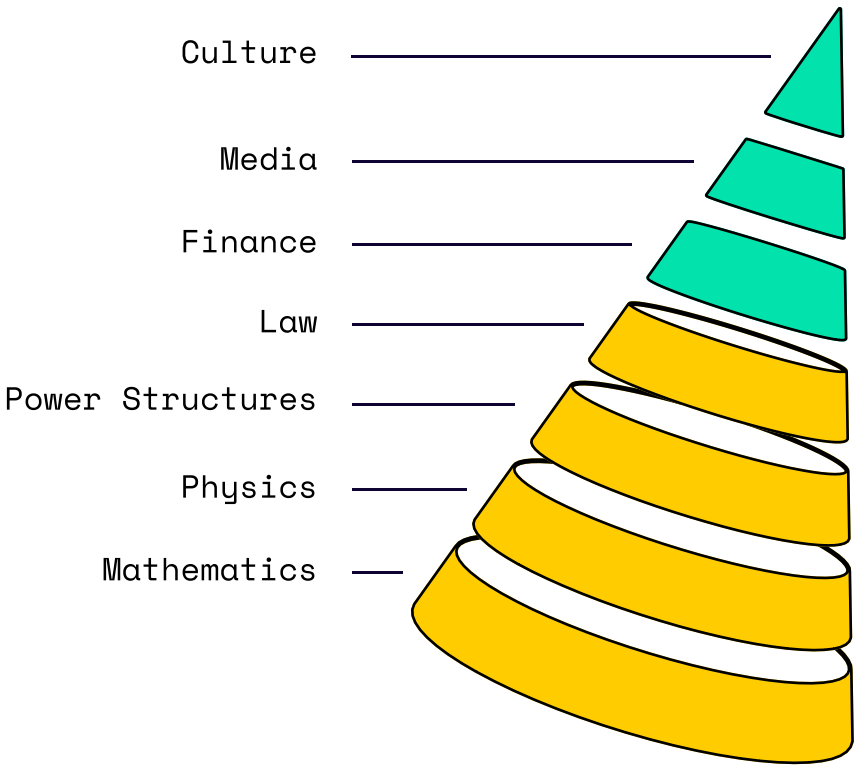
No more tail wagging the dog

As humanity upgrades its infrastructure for the digital age -- the questions we must ask are “Is the new financial system better than the old one?”

1. Is it transparent?
2. Is it fair?
3. Is it accessible?
4. Is it captured by elites? (old elites, or new elites)
5. Is it in service of the many or the few?
6. Does it invest in outcomes beyond quarterly profit cycle?
7. Does it reduce suffering or increase it?
8. Is it in service of greater combinations of human intelligence and strength to come together, or is it only in service of itself?
9. Who is designing it and what are their incentives?

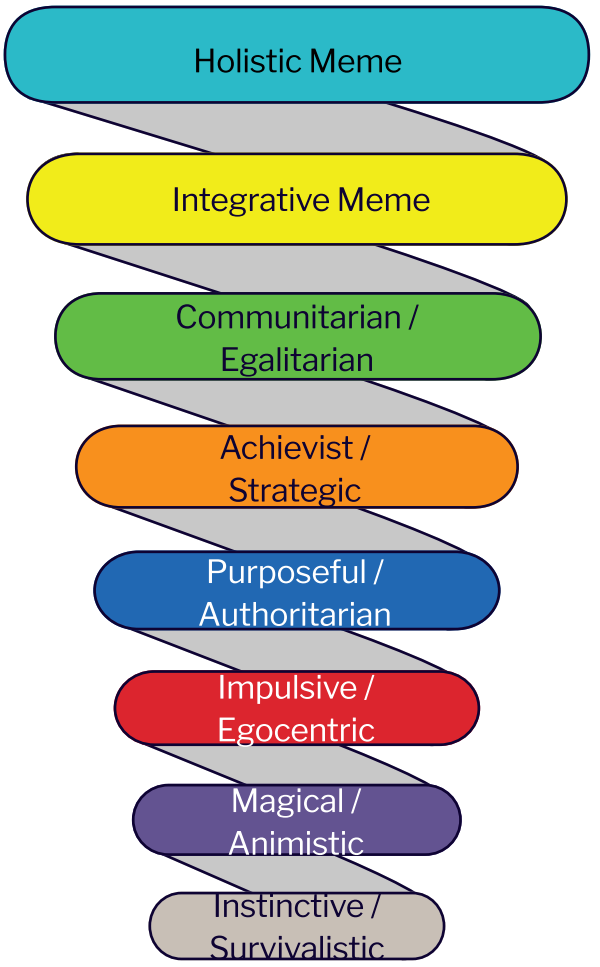
The Constraints Stack

Let us take a moment to articulate the constraints stack of human civilization, from mathematics to culture,



Regenerative Cryptoeconomics traverses the stack from finance & law up.

Because cryptoeconomics can help monetize culture, media, or finance in novel ways, it can be used to rewrite these portions of the stack to be more transparent, immutable, credibly neutral, and global in nature.



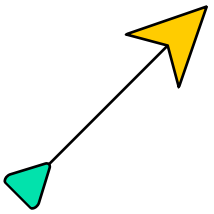
Spiral Dynamics

Spiral Dynamics is a model of the development of individuals, organizations, and societies, developed by Dr Ed Beck and Chris Cowen.

Spiral Dynamics describes how worldviews & value systems emerge from the interaction of life conditions & the people in them. Each value system is neither positive or negative, but is a response to the local environment. Each value system may also be a response to the problems of the previous system.

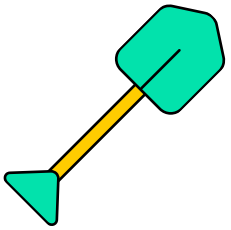
The scope of Spiral Dynamics is quite broad, and is therefore beyond the purview of this book, but there are many other excellent resources out there availabile - including a book by Ed Beck and Chris Cowen.

The Four Social Revolutions



Hunter-Gatherer

The primary means of subsistence are wild plants & animals. Humans are nomadic & non-hierarchical.

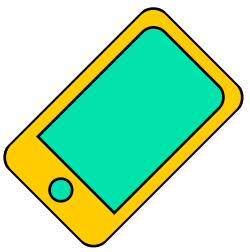


Agricultural

The primary means of subsistence is the cultivation of crops. Humans settle down & become hierarchical.

Industrial

The primary means of subsistence is industry - the mechanized manufacture of goods. Social hierchies and division of labour become more complex.



Information

The primary means of subsistence is services or information-services. Social hierarchies & culture become even more complex.

From the Industrial => Information Age

As humanity transitions from the Industrial Age to the Information Age, we are in for profound shifts in how society self organizes itself.

The first was the internet. The internet of information (1990s - present) changed everything in society that relies on information because computers could now send information across a network without an intermediary. Everything that relied upon information (media, entertainment, politics, news) changed drastically as a result.

The internet of value (2009 - present) could change everything in society that relies on value. Computers can now send value across a network without an intermediary. Anything that relies on value transfer (finance, art, gaming, work, public goods funding) could change drastically as a result.

These shifts come at a time when there is profound mistrust in the Industrial Age institutions that our parents & grantparents relied upon.

As technological evolution exponentially compounds, and our democratic institutions evolve on a much slower timescale than the technology that is powering the choices of citizens (or consumers) that participate in government, we have seen massive disillusionment on behalf of individuals who feel that he system no longer works for them.

Will democratic institutions be able to upgrade themselves to become more web-scale and internet-native?

In this regard, many of us are following the lead of Audrey Tang - the digital minister of Taiwan.

Digital Democracy in Taiwan

Audrey Tang's first initiative was called the g0v project, and it swapped out the "o" for a 0 (a zero) in the governments top level domain "gov.tw" to view more accessible & interactive versions of these government websites. The project was open source, which invited contributions from across the country. And the projects were used million times per month.

Another inititaive, vTaiwain, used social media paradigms to create digital petitions. Petitions with over 5000 signatures were brought to the premier and government ministries to be adressed. Changes implemented through this system include access to income tax software for non-Windows computers, and changes to cancer treatment regulations.

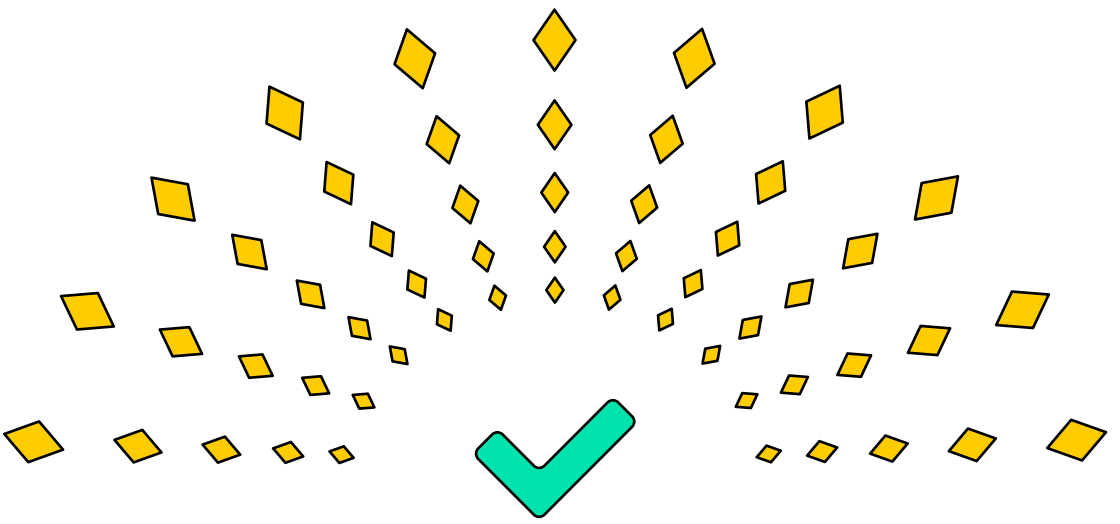
Tang practices radical transparency, and all of her meetings are recorded, transcribed, and uploaded to a public website. She also publicly responds to questions sent through another website. Tang is a fervent believer in open data, open governance, and civil society-government collaboration.

High Bandwidth Democracy

We are at a critical moment - when we face seemingly-insurmountable challenges from growing economic disparity, climate change, and a global pandemic. Our governing systems are stifled with deepening polarization & that is halting progress.

Taiwan is seen as a model for how democracies could be upgraded for a more digital-forward population - an important example of a more digital democracy in a world that is turning more authoritarian.

To get involved in conversations about how to upgrade democracy for the 21st century, we recommend checking out the RadXChange movement at https://www.radicalxchange.org/



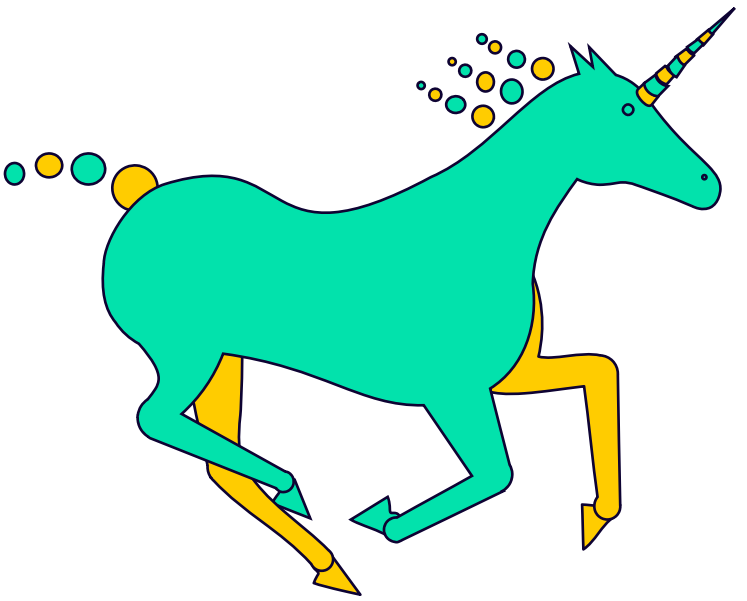
The consent of the governed

In political science, the idea of the consent of the governed is foundational. A government's legitimacy and moral right to use its power is only justified (and lawful) when consented to by the people or society in which that political power is exercised.

This is in contrast to the divine right of kings, which had historically been invoked.

One problem with the powerful web2 platforms is that they do not seek the consent of their userbase for any of the changes that they roll out to the platform, nor do they allow their users to exit the system without a high cost.

Regenerative cryptoeconomic systems aim to do better, by allowing users of the system to govern the system (along with other stakeholders), and to provide the ability to exit from the system if they disagree with changes. The ideal outcome is that these foundational investments in the consent of the governed create healthier communities over the long term.

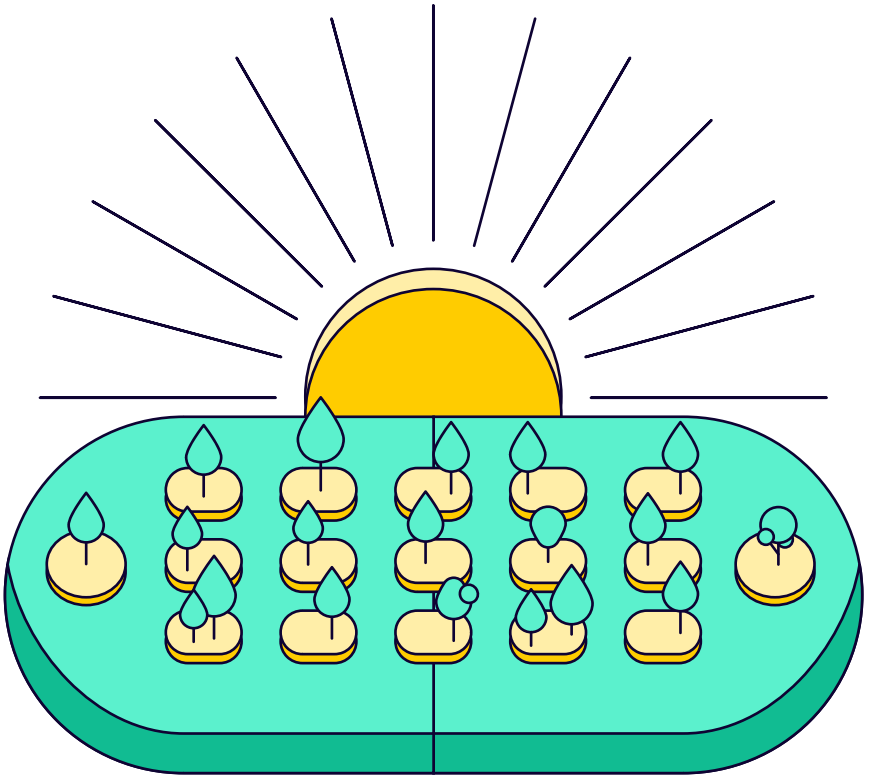


We can go to the Quadratic Lands

The Quadratic Lands is a mythical place where we've rewritten the laws of economics to support public goods, prevent coordination failures, and create human thriving.

It's a place where the distance between value creation & value capture has been collapsed, and so people work on things that create value, instead of just those that can capture it.

By practicing Regenerative CryptoEconomics, we can build a vessel to the Quadratic Lands.

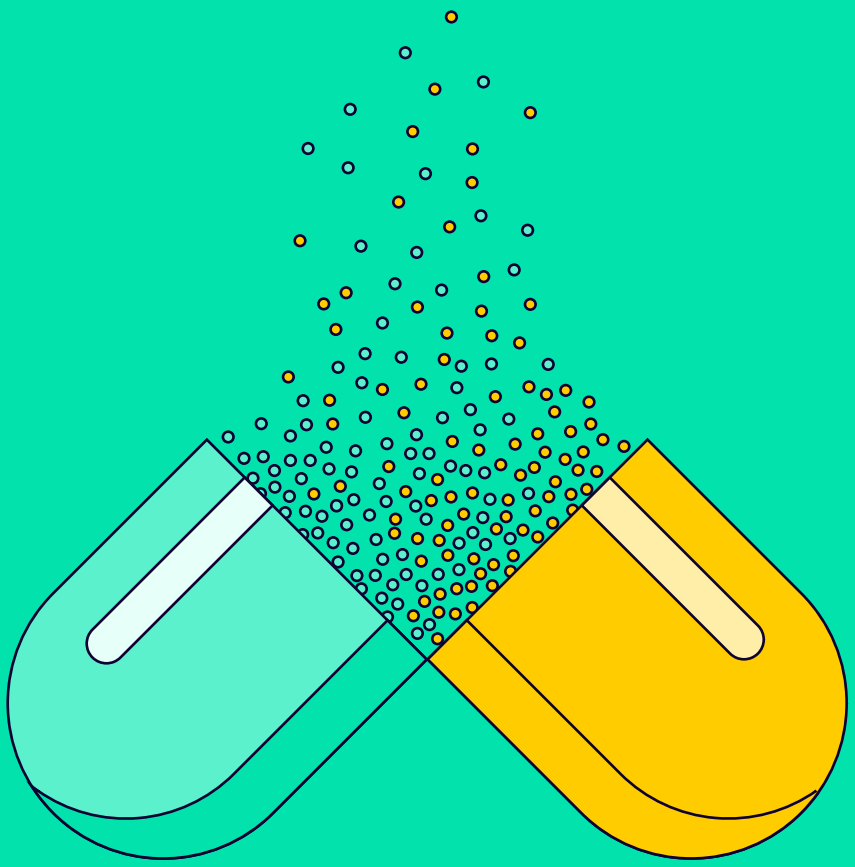


We can build a more SolarPunk future

Solarpunk is an art movement that envisions how the future might look if humanity succeeded in solving major contemporary challenges with an emphasis on sustainability, climate change and pollution.

Solarpunk is optimistic and fundamentally “high tech” and “high life”. It emphasizes a deep integration between, rather than separation of, technology and the environment in addition to convivial conservation, self-sustainability, and social inclusiveness.

By practicing Regenerative CryptoEconomics, we can build a more solarpunk future.



Chapter 4

What (Designing Coordination Games)

It's all coordination,
and it always has been.

-- Anon

Coordination Games

A coordination game is a type of simultaneous multiplayer game found in game theory.

It describes the situation where a player will earn a higher payoff when they select a coordinated path of action relative to another player's actions.

Coordination games are built around Nash equilibria.

Nash equilibria

A nash equilibrium is a way to define an optional solution to a game involving two or more players.

If each player has chosen a strategy & no player can increase their own expected payoff by changing their strategy while the other players keep their own strategies unchanged, then it can be said that set of strategy choices constitutes a Nash equilibrium.

If a unique Nash equilibrium exists for a game, then all players can be rationally expected to converge to the state represented by the equilibrium

It is possible for multiple nash equillibria to exist in a game. See if you can spot the nash equilibria in the games to the right.

	Left	Right
Left	8,8	0,0
Right	0,0	8,8

Pure Coordination

	Contribute	Defect
Contribute	8,8	0,0
Defect	0,0	5,5

Assurance Game

	Football	Shopping
Football	8,5	0,0
Shopping	0,0	5,8

Battle of the Sexes

	Stag	Hare
Stag	8,8	0,7
Hare	7,0	5,5

Stag Hunt

How to read these boards: Each square in these games represent the payoff for each player if that cell is selected. The higher the score the better.

The Prisoners Dilemma

The Prisoners Dilemma is a category of coordination game where the incentives of players diverge - and without a mechanism for coordination between players, a rational player will choose their own benefit at expense of other players.

Here's how it works: Imagine two members of a criminal organization are arrested and imprisoned. Each prisoner has no means of communicating with the other.

Suppose the prosecutors lack sufficient evidence to convict the pair on the primary charge, but they have enough to convict both on a secondary charge.

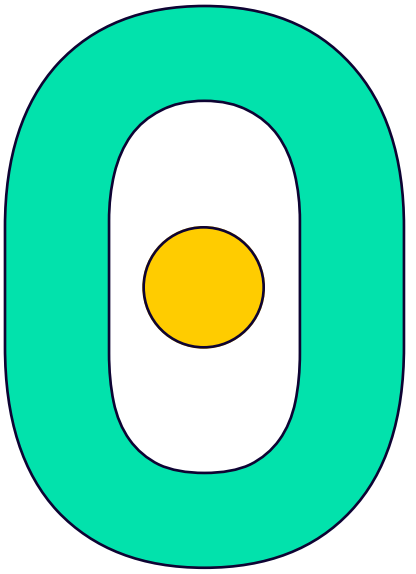
Simultaneously, the prosecutors offer each prisoner a bargain. Each prisoner is given the opportunity either to betray the other by supply evidence that the other committed the crime, or to cooperate with the other by remaining silent. The possible outcomes are:

- If player A and player B each betray the other, each of them serves 2 years in prison
- If player A betrays player B but player B remains silent, player A will be set free and player B will serve 3 years in prison
- If player A remains silent but player B betrays player A, player A will serve 3 years in prison and player B will be set free
- If player A and player B both remain silent, both of them will serve only 1 year in prison (on the lesser charge).

As betraying the other player offers a greater reward than cooperating with them, all purely rational self-interested prisoners without the ability to coordinate will betray the other. Only mutual cooperation would yield greater reward - but with no way to coordinate towards that, it is not likely to happen.

Prisoner's dilemma payoff matrix

B / A	B Stays Silent	B Betrays
A Stays Silent	-1 / -1	0 / -3
A Betrays	-3 / 0	-2 / -2

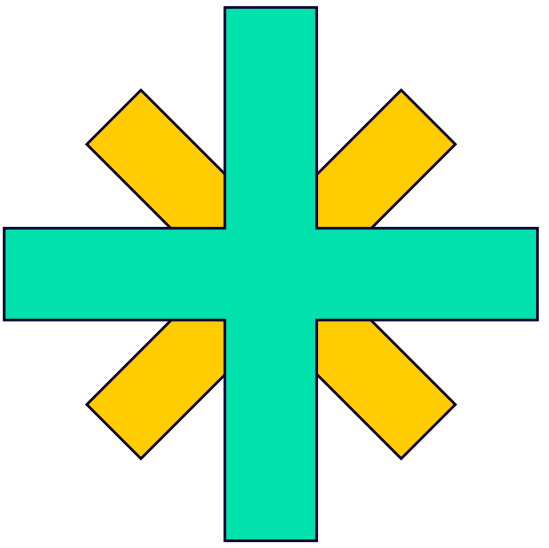


ZERO Sum Games

A zero-sum game is a type of game in game theory where if one party loses, the other party wins, And visa versa.

Zero-sum games can include only 2 players or many many participants.

In financial markets, the investment mechanisms futures & options are considered zero-sum games. This is because the contracts represent agreements between 2 parties and, if 1 investor loses the wealth is transferred to another investor. In a zero-sum game, it is not possible for one party to advance its position w/o the other party suffering an equal and opposite loss.



Positive Sum Games

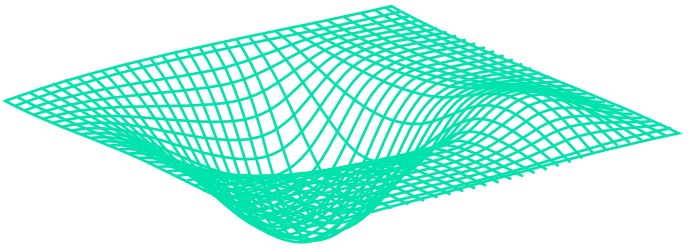
"Positive-sum" games, in game theory, are those games in which the sum of winnings & losses is greater than zero (net positive).

LIke Zero-sum games, Positive-sum games can include just two players or many many participants.

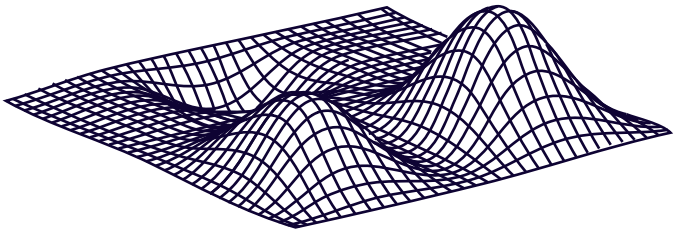
In positive sum games, it is possible for multiple parties (or all parties) to mutually benefit. As Regenerative Cryptoeconomics emphasizes games that are net-positive, it often involves designing positive sum games.

Private goods
economic incentive gradient

Public Goods
economic incentive gradient



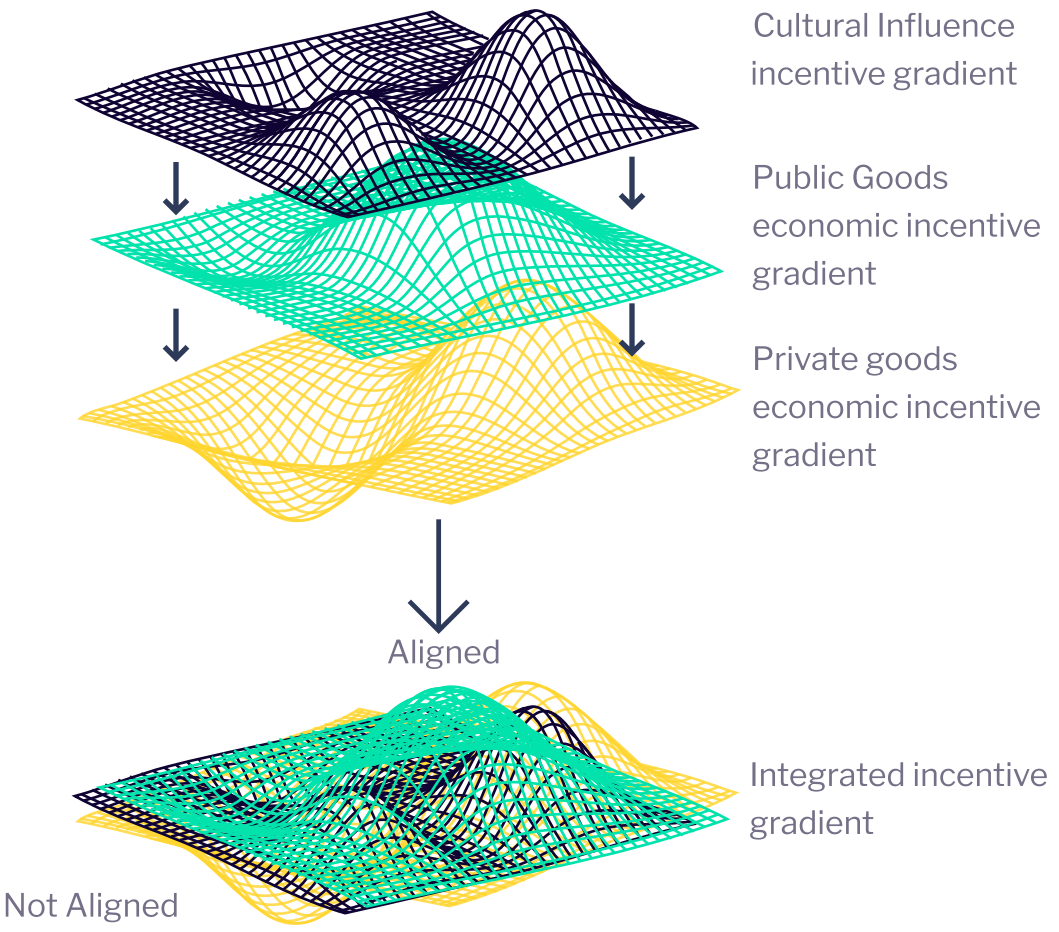
Cultural Influence
incentive gradient



In the past, incentive systems were fragmented.

Charlie Munger once famously said "Show me the incentive and I'll show you the outcome".

As members of the world economy, we are subjected to many different incentive systems daily. We try to maximize our bank account balances so we can purchase private goods. We recycle to maximize our positive impact on public goods.



We can create new Augmented & Integrated Incentives Systems

Often times these incentive systems align, other times they are misaligned.

With programmable blockchain-based economic systems, there is a new opportunity to design cryptoeconomic incentive systems to be aligned with one another. When incentive systems are aligned, more economic agents will take the aligned actions than before.

What if we could align the incentive systems between public, private, and common goods to create more human thriving?

Our mind's limit: Dunbar's number

Dunbar's number is a cognitive limit to the number of people with whom one can maintain stable social relationships. Dunbars number was first proposed by Dr. Robin Dunbar, who proposed that humans can only comfortably maintain 150 total stable relationships.

A stable social relationships is defined as a relationships in which an individual knows who each person is and how each person relates to every other person.

Dunbars number has since been broken down further into:

1. 5 close friends
2. 15 super family
3. 50 clan
4. 150 tribe

Beyond these limits, stable social relationships have not been traditionally possible.

Technology is a bicycle for the mind

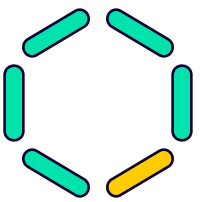
Steve Jobs once famously called computers a bicycle for the mind - because computers allowed one to become more efficient & go further in ones thinking - similar to how a bicycle allows one to go physically further.

If computers are bicycles for our mind, do they offer more efficient thinking? More efficient communciation? More efficient trust?

If so, it should be possible to maintain stable social relationships with a higher number of people.

If technology could 5x the number of stable social relationships the median human can have, how would that change the social/economic graph of the world?

Dunbars Number: an upper limit on your stable social relationships

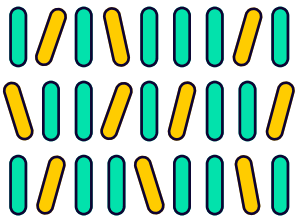


5

Close Friends

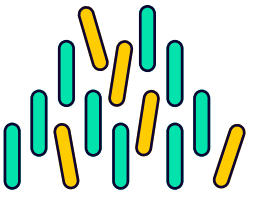
15

Super Family



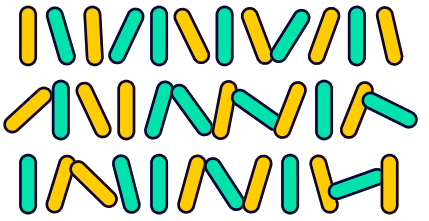
150

Tribe



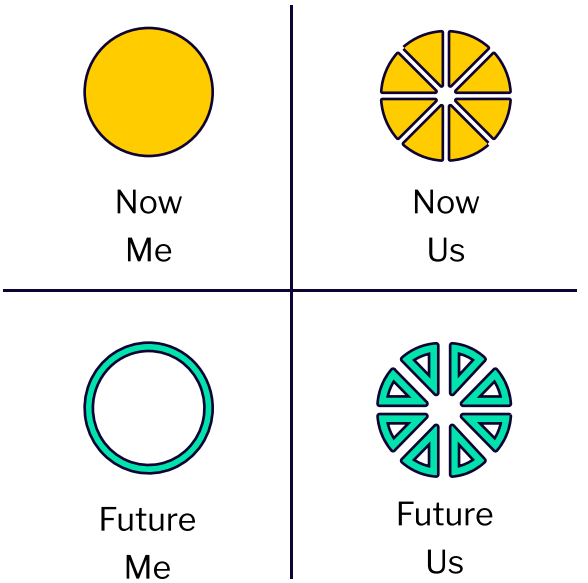
50

Clan



Over

150

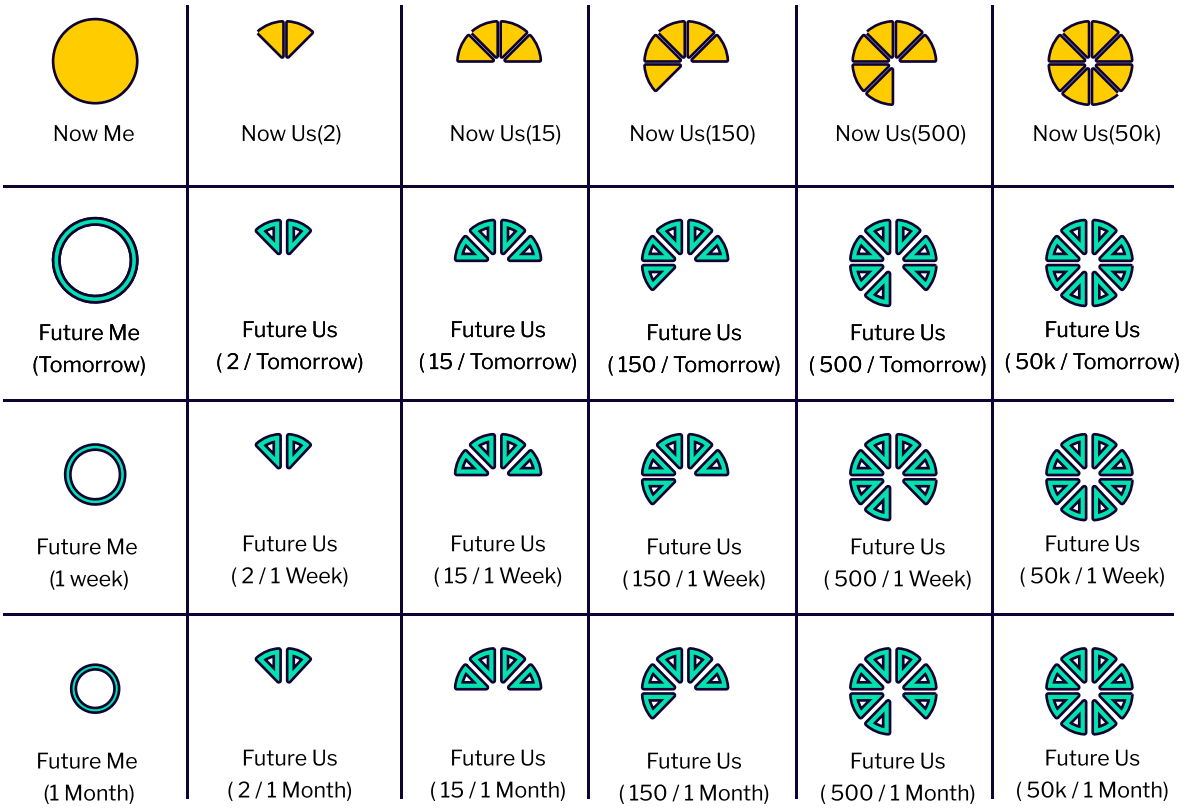


Bentoism: Beyond Near Term Orientation

Yancey Strickler, the founder of Kickstarter, is the author of the theory of Bentoism. Bentoism (an acronym for BEyond Near Term Orientation) is a wider lense for what's valuable and what is in our self-interest. Bentoism is the theory that self-interest is multi-dimensional.

Instead of focusing on designing systems for instant gratification (“Now Me”), we propose that Regenerative Cryptoeconomic systems that build for human thriving expand their design space from “me” to “us”, and from “now” to “future.

To learn more about Bentoism, go to the Bento Society’s website at *https://bentoism.org/*



Expanding The Bento Box

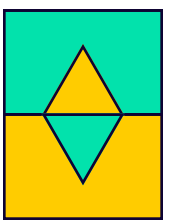
Traditional Bento Boxes contain 4 cells: Now Me, Now Us, Future Me, Future Us. This concept could be further extended with more granularity.

- “Future” could mean Tomorrow, 1 Week, 1 Month, 1 Year, 1 Decade, 1 Century, or anything in between.
- “Us” could mean 2 people, 5 people, 15 people, 50 people, 150 people, an entiee city, nation, or world, and everything in between.

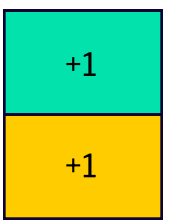
When designing coordination games it is possible to create games that are net-positive across this entire expanded bento box.

Designing for the evolution of trust

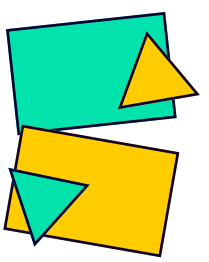
Three things to build towards:



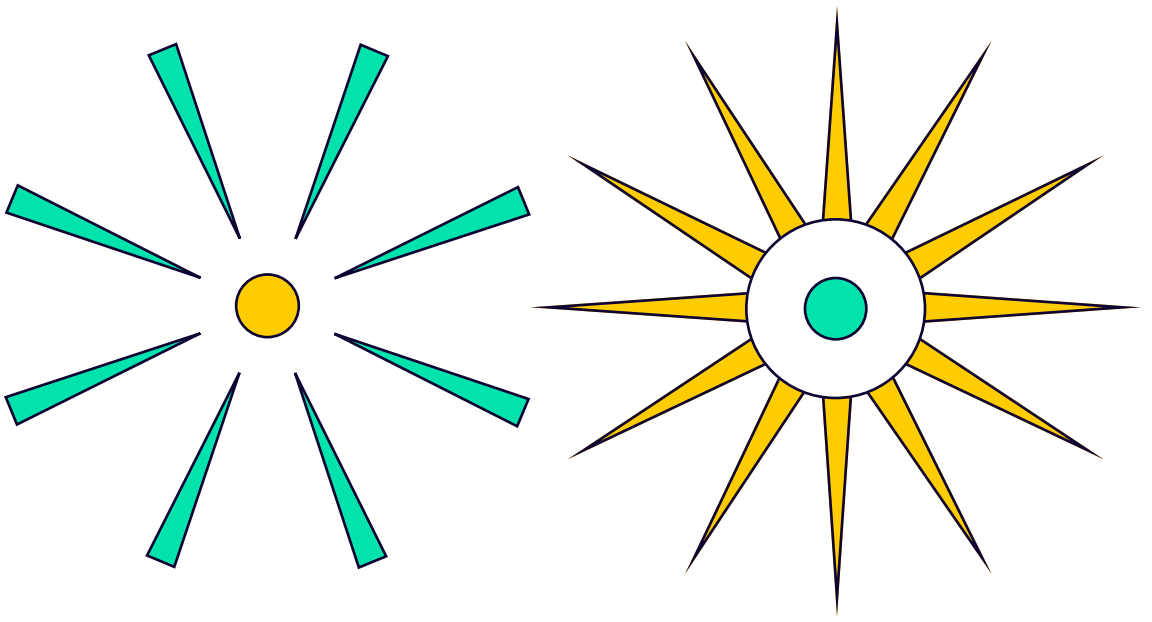
Repeat Interactions



Possible Win-Wins



Low Miscommunication

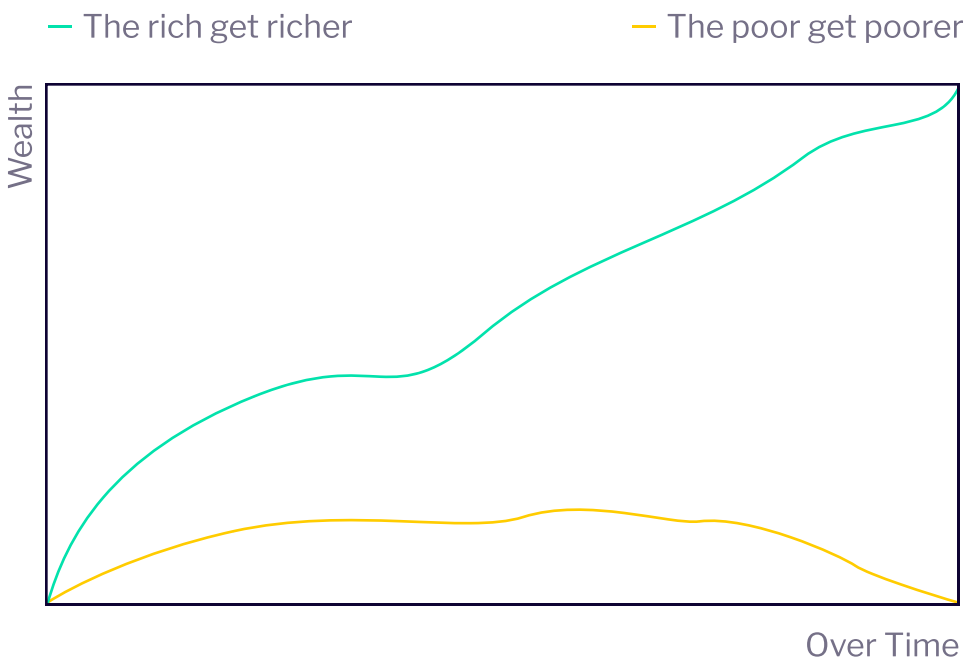


When Designing Coordination Games

To build mechanisms that are not fragile, design for mechanisms that are easier to defend than to attack (eg cheaper to coordinate than to defect) .

Examples:

- **In ETH2 Proof of Stake** this principle is at work, because it is cheap to defend the system and costly & risky to attact it.
- **In our information environment, the incentives are broken.** This is because it is cheap to spread misinformation but costly to correct it. This is captured by the old trope “A Lie Can Travel Halfway Around the World While the Truth Is Putting On Its Shoes”.



The Matthew Effect

The Matthew Effect of accumulated advantage, is sometimes summarized by the adage "the rich get richer and the poor get poorer".

The concept is applicable to the cumulative advantage of economic capital - but can also apply to matters of fame or status or other types of resources.

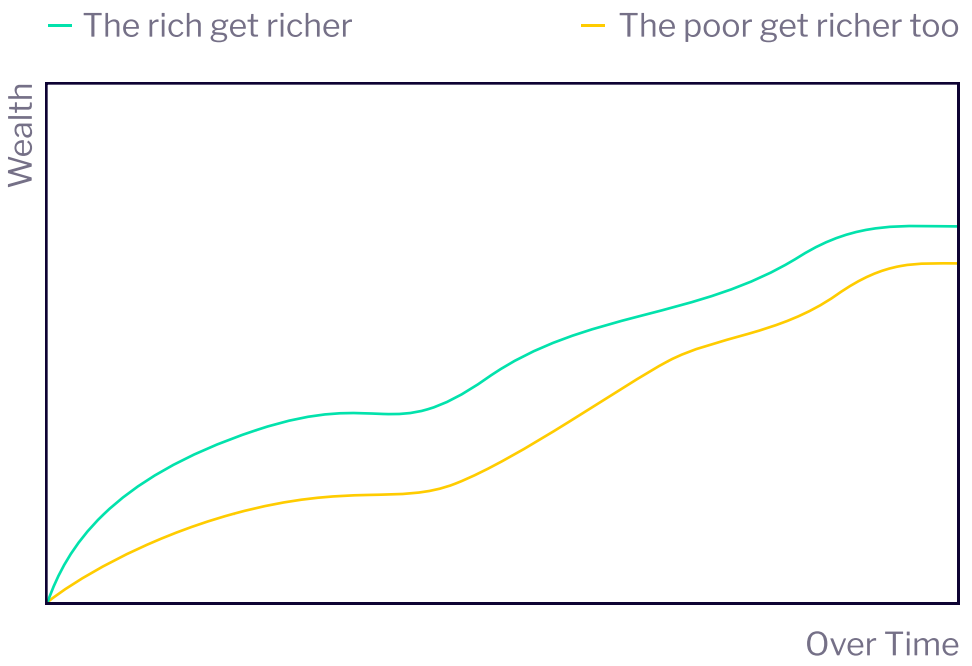
Because the Matthew Effect is a repeatable pattern in human social systems, economic systems will typically consolidate in the hands of a rich elite.

Beating the Matthew Effect

The Matthew Effect is a fundamental law of economic systems, but that doesn't mean that it cannot be mitigated.

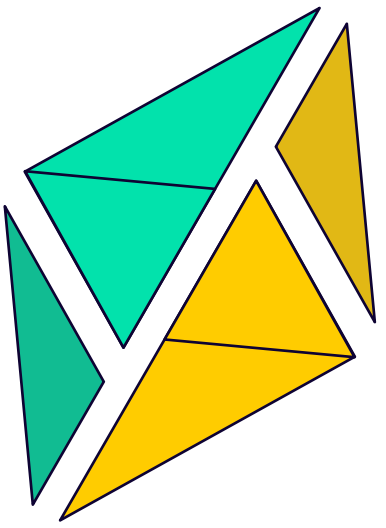
Just as the Wright brothers defied physical gravity when they invented the airplane, we can build economic systems that counter-act the Matthew Effect. Web3 founders can defy economic gravity (in this case, the consolidation into the hands of the rich & the few) with thoughtful design.

By building Regenerative Cryptoeconomic systems that (1) do not externalize harm (2) favor one-person-one-vote instead of one-token-one-vote or (3) leverage other regenerative mechanisms, we can design to compensate against (or fundamentally counteract) the Matthew Effect.



Public Goods are non-excludable and non-rivalrous

	Excludable	**Non-Excludable**
Rivalrous	Private Goods (*food, clothing, cars*)	Common Goods (*fish, timber, coal*)
Non-Rivalrous	Club Goods (*cinemas, private parks*)	Public Goods *(air, open source software)*



Free Rider Problem

If you give people the choice to support public goods or not, rationally self-interested people without a coordination mechanism will often free ride on public goods. If enough people free ride, the whole system collapses due to lack of support. This is why many Regenerative Cryptoeconomic problems attempt to solve the free rider problem.

Public Good Funding Administration Problems

1. Administration of public goods can be high overhead.
2. Governments are not efficient vehicles to administer public goods.
3. Governments are coercive.
4. Anytime you've got a pot of money, you could have the capacity for corruption in the administration of said goods.

Many Regenerative Cryptoeconomic problems attempt to solve these problems by creating efficiency, verifiability, & scale in administering funding campaigns.

8 Principles for Managing A Commons

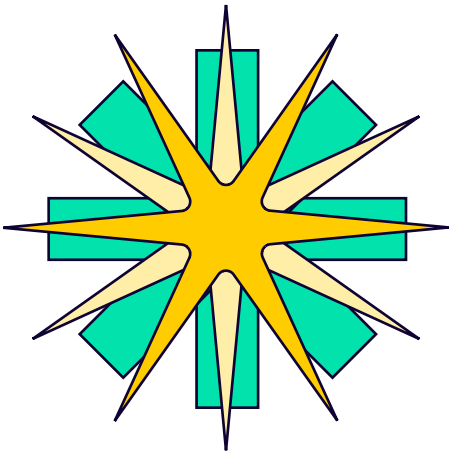
Elinor Ostrom was an American political economist whose research centered around the governance of common resources.

Her research focused on common natural resources like fishing , timber, irrigation water for farmland, land for grazing, but also more intangible resources, like information.

For each of these resources, it is expensive to control and fence in consumption. The problem with these types of resources is that may be are over-exploited, or at least their care and/or sustainability can often by overlooked by users.

Ostrom showed that, within communities, rules or institutions can emerge to ensure a sustainable & shared management of resources. Importantly, these institusions were bottom up and efficient from an economical point of view

1. Clearly defined boundaries
2. Congruence between appropriation and provision
3. Collective choice arrangements
4. Monitoring
5. Graduated sanctions
6. Conflict resolution mechanisms
7. Minimal recognition of rights to organize
8. Nested enterprises



On Legitimacy

Vitalik Buterin, the founder of Ethereum, describes **legitimacy** in one of his blog posts:

> "Legitimacy is a pattern of higher-order acceptance. An outcome in some social context is legitimate if the people in that social context broadly accept and play their part in enacting that outcome, and each individual person does so because they expect everyone else to do the same."

Legitimacy is a pattern that emerges naturally in many coordination games, and it informs each agent in a coordination's mental model for what they can expect other agents to do.

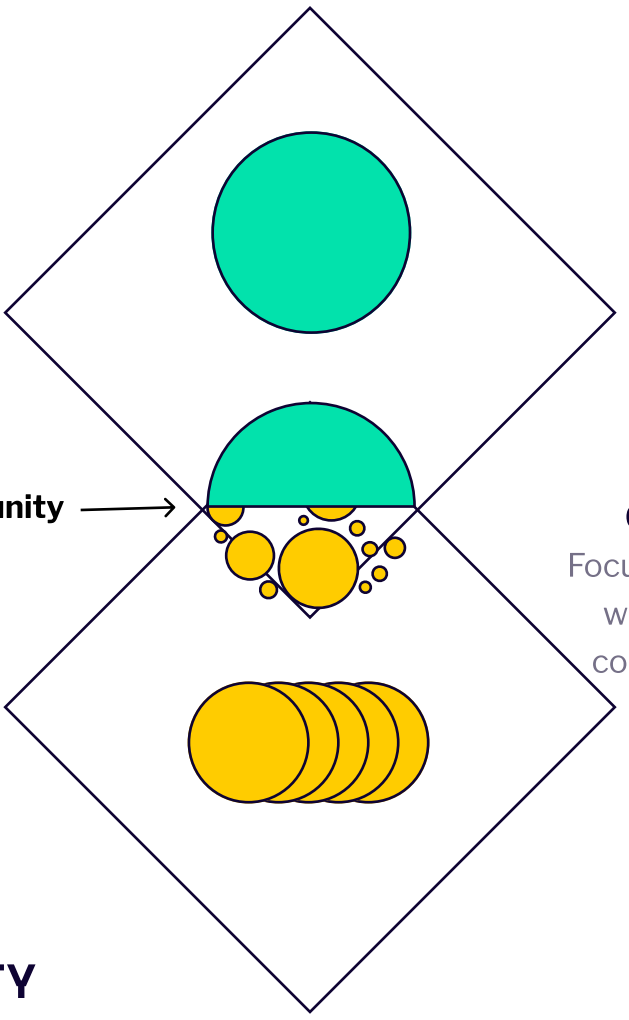
The ways legitimacy is created or destroyed are:

1. Legitimacy by brute force
2. Legitimacy by continuity
3. Legitimacy by fairness
4. Legitimacy by process
5. Legitimacy by performance
6. Legitimacy by participation
7. Legitimacy by process

When designing Regenerative Cryptoeconomic systems, legitimacy is an important design goal. For more on Legitimacy, check out Vitalik's excellent blog post at https://vitalik.ca/general/2021/03/23/legitimacy.html

INDIVIDUALISM

Individualism stresses individual goals and the rights of the individual person.



COLLECTIVISM

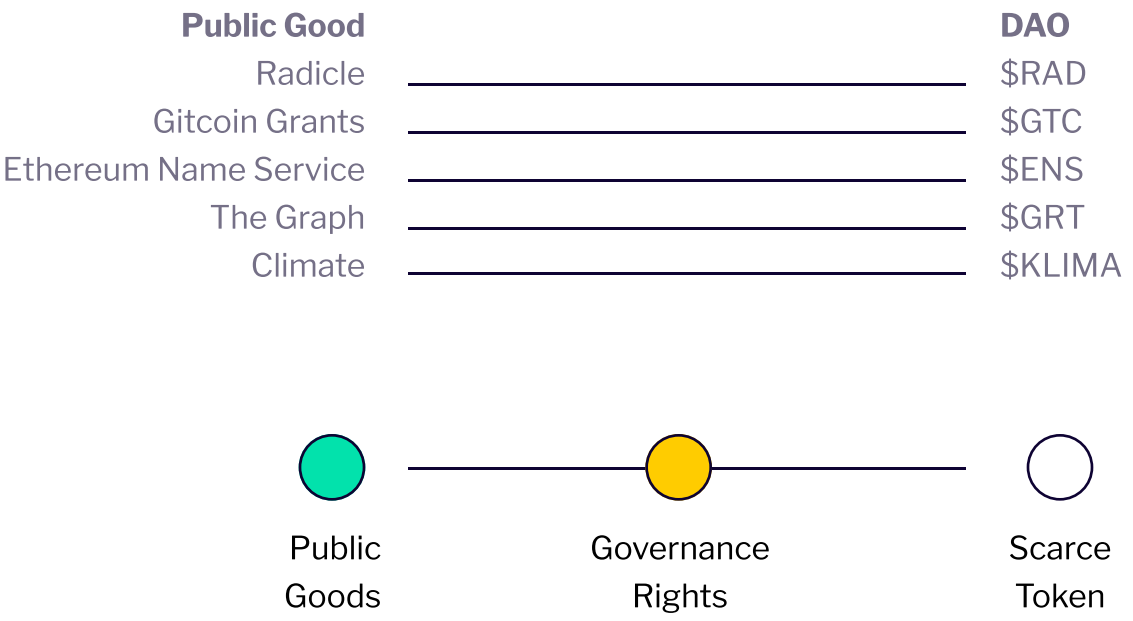
Focuses on group goals, what is best for the collective group, and interpersonal relationships

OPPORTUNITY

In the analogue financial system, its hard to fund public goods (a collectivist favorite) without taxes (which individualists loathe).

In web3, we can design new mechanisms which fund public goods without taxation. Since this creates an opportunity for a healthy mixture of autonomy and interdependence, it also creates an opportunity to build cultural bridges between individualists & collectivists.

When desiging Regenerative Cryptoeconomic mechanisms, look for expression of individual preferences within the context of the larger community/collective.

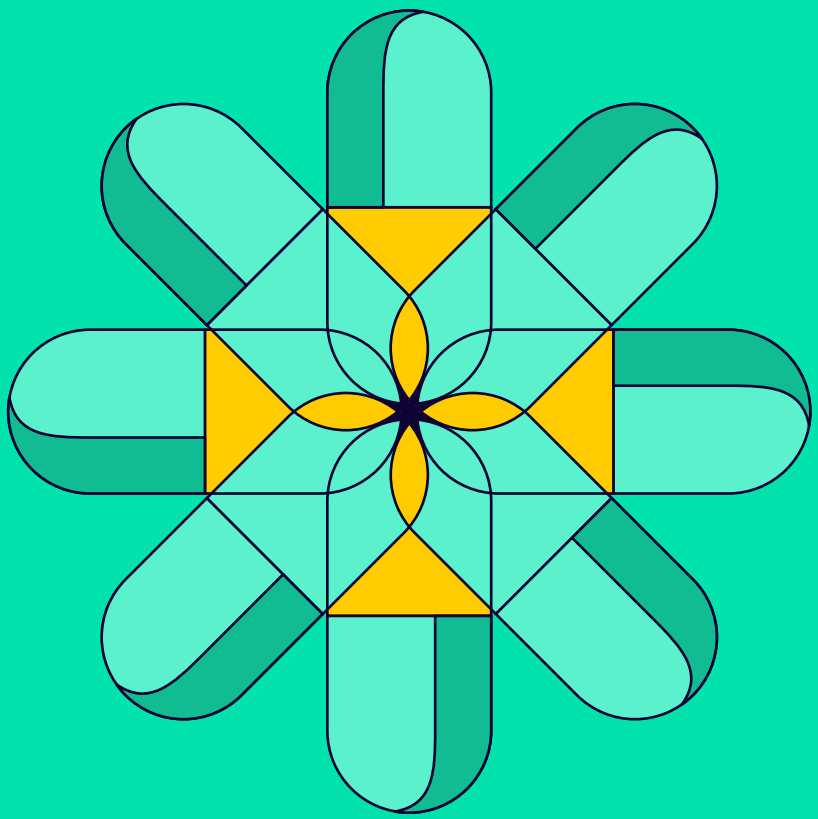


DAOs = Unbundled Governance of Public Goods

In the legacy world, many public goods (if they are maintained at all) are bundled into a handful nation-state government. In the digital world, public goods can be unbundled into many DAOS that interoperate with one another.

Within the DAO ecosystem in 2022, many projects are beginning to emerge that export public good.

One example is ENS, a system that supports the discoverability of actors in the Ethereum ecosystem with a freely available public good (ENS). They have released a scarce governance token called $ENS to govern the system.

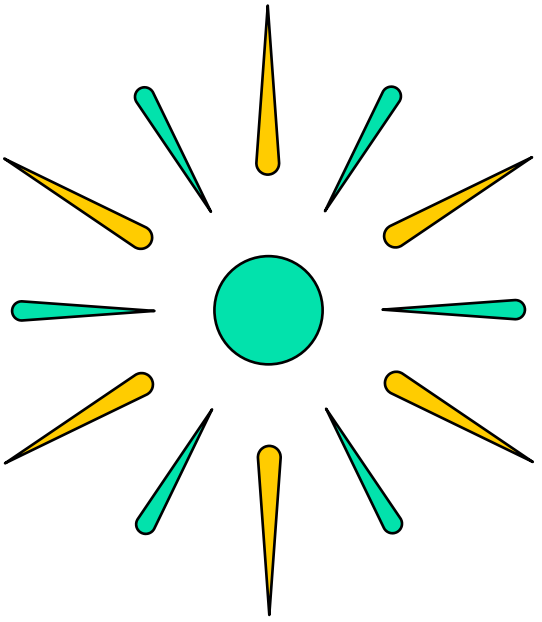


Chapter 5

How (Coordination Mechanisms)

Our weapon of choice is novel coordination mechanisms deployed to decentralized blockchain networks.

-- Anon



Uncoordinated Attack

Leading to Defeat

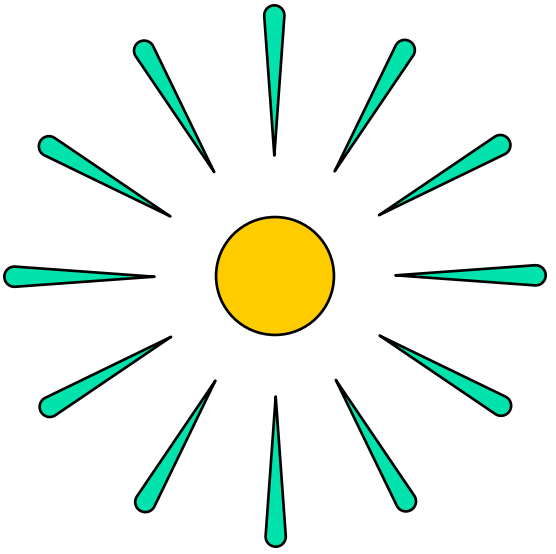
The mechanism that started it all

To understand the opportunity that web3 presents, you must understand the breakthrough that created the opportunity that is web3.

The root problem with conventional (fiat) currency is all the trust that's required to make it work. A central bank must be trusted not to debase the currency, each individual bank must not lie about its balances - but the history of fiat currencies is full of breaches of that trust.

To remove the trust inherent in the financial system, Satoshi Nakamoto, the inventor of Bitcoin, needed to solve the Byzantine's general problem.

The Byzantine Generals problem describes the difficulty that decentralized systems have in agreeing on a single truth - and was a problem that plagued monetary systems for a long time until the invention of Bitcoin.



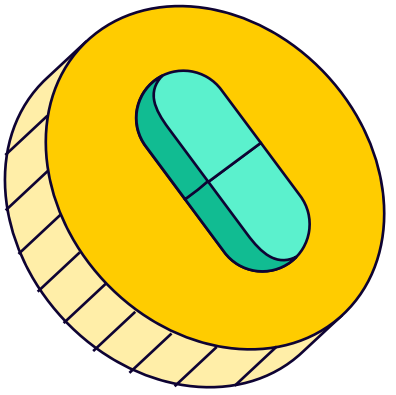
Coordinated Attack

Leading to Victory

Byzantine Generals' Problem

The game theory behind this problem is as follows: Several generals are besieging a town called Byzantium. They have surrounded the city, but they must collectively decide to attack. If all of the generals attack at the same time, they win. But if they attack at different times, they lose. The messages between the generals may have been intercepted and deceptively sent by their enemies. How can the generals organize to solve the problem?

Bitcoin solved this game theoretic problem by using a Proof of Work mechanism to establish a clear, objective ruleset for the blockchain. In order to add information (or blocks), to the blockchain, a member of the network must publish proof that they invested work into creating the block. This work imposes large costs on the creator, and thus incentivizes them to publish honest information. Because the rules are objective, there can be no disagreement or meddling with the information on the Bitcoin network. The ruleset governing which transactions are valid and which are invalid is also objective, as is the system for determining who can mint new bitcoin



Funding Generation Mechanisms

Inflationary Rewards - A web3 based system can creates inflationary rewards from its monetary supply & use those funds to support public goods. This can be powerful if demand for the system is growing faster than inflation, but dangerous inflationary devaluation can occur if not.

Philanthropy - the generous donation of money to good causes for altruistic reasons - typically the desire to promote the welfare of others. Early Gitcoin Grants Rounds were funded this way.

NFT Sales - the birth of NFTs has given art a business model, and for those with cultural capital, the creation of cultural assets in the form of NFTs has proven to be an effective way to raise money for the public good. Gitcoin Grants Round 9 - 11 were partially funded this way.

Sequencer Fees - The Optimism L2 network has pledged to donate 100% of their early sequencer fees to the public good of the Ethereum network. Since Optimism does $100k/day in sequencer fees, this has been a very successful way of funding public goods.

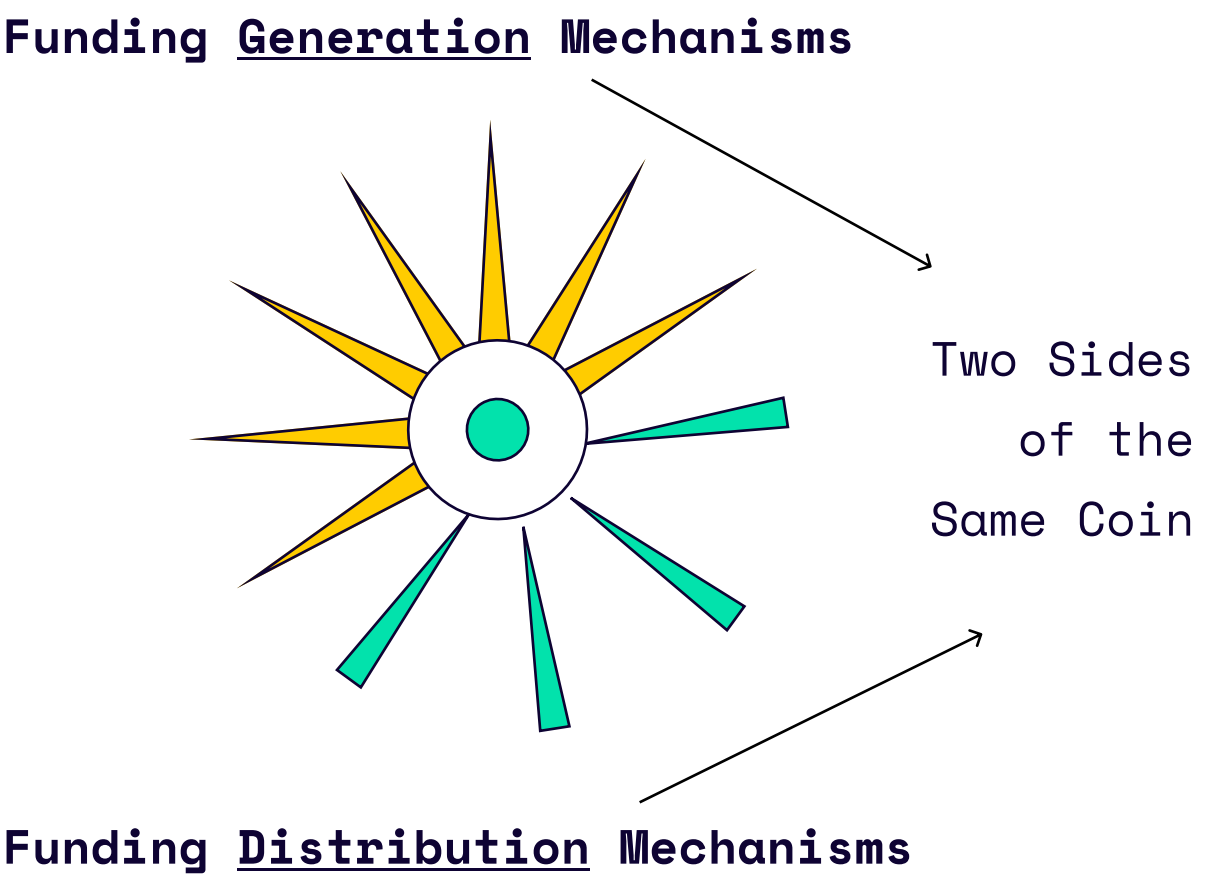
Transaction Fees - Prominent DEFI Protocols have implemened fee switches into their protocols, which if turned on, could be a power funding generation mechanism for the public good.

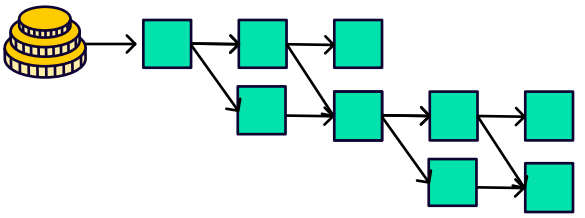
Funding Generation Mechanisms cont'd

Data as Labour - What if we treated the consumers of the web as creators & owners of their of data?

Web2 is funded by advertising, and web2 advertising networks like Facebook have become hugely profitable by selling advertising. What kind of new opportunities would it provide to fund regenerative economics to give everyday citiens of the web the ability to route economic upside for their data?

Any other economically exothermic mechanism - Any other mechanism that's used in DeFi, NFTs, DAOs, or otherwise to generate protocol revenue could be directed to public goods.





Funding Distribution Mechanisms

Quadratic Funding - a way to allocate the distribution of funds (for example, from a government's budget, a philanthropic source, or collected directly from participants) based on quadratic voting (defined on the next page).

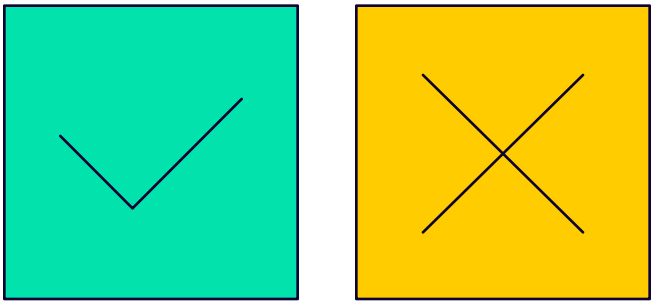
Retroactive Public Goods Funding - A scheme to retroactively reward those who have contributed to public goods based upon what a group of domain experts vote on. The core principle behind the concept of retroactive public goods funding is simple: it's easier to agree on what was useful than what will be useful.

MolochDAO - A Minimum Viable DAO design that invented a "ragequit" - a means for members to exit the DAO by exchanging their shares for a pro-rata claim on the treasury's assets. Ecosystem participants can fund a MolochDAOs & easily exit their funds via ragequit if they disagree w. the DAO's decisions.

Web of Trust - The creation of a graph data structure of who trusts who, upon which data bout who is creating the most value can be gleaned. This intersubjective data can be used to allocate tokens. Used by CoordinAPE, SourceCred.

Universal Basic Income - a sociopolitical financial transfer concept in which all citizens of a given population regularly receive a legally equal financial grant without a means test. Typically designed to give participants stable financial footing from whicih to pursue other goals.

Aqueduct- a conduit built to transfer water. In the internet of money, aqueducts have been set up to directly transfer 1% to projects like Gitcoin, Radicle Drips, or the Protocol Guild. Some projects that receive aqueducts decide to pay their revenues forward to other projects, creating a series of multi-level aqueducts.



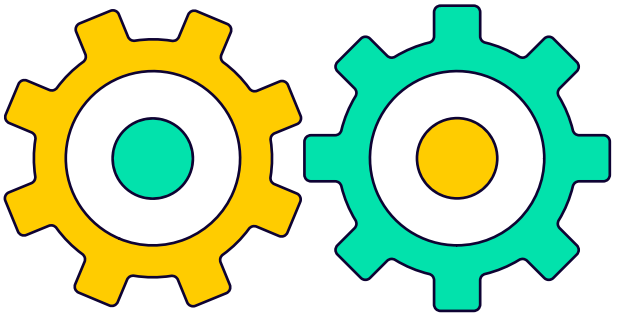
Voting Mechanisms

Ranked Choice Voting- an electoral system in which voters rank candidates by preference on their ballots.

1. If a candidate wins a majority of first-preference votes, he or she is declared the winner.
2. If no candidate wins a majority of first-preference votes, a candidate with the fewest first-preference votes is eliminated. First-preference votes cast for the failed candidate are eliminated, elevating the second-preference choices indicated on those ballots.
3. A new tally is conducted to determine whether any candidate has won a majority of the adjusted votes.
4. The process is repeated until a candidate wins an outright majority.

Quadratic Voting - a collective decision-making procedure which involves individuals allocating votes to express the degree of their preferences, rather than just the direction of their preferences. By allowing the voting mecahnism to take into account the degree of prefrences, a more optimal expression of preferences can be achieved.

Conviction Voting offers a novel decision making process that funds proposals based on the aggregated preference of community members, expressed continuously. By allowing the voting mecahnism to take into account conviction, a more optimal expression of preferences can be achieved.



Mechanisms cont'd

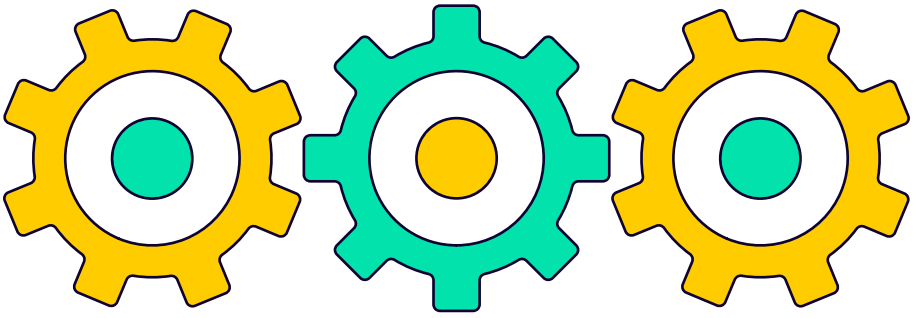
Staking - a way of putting tokens at risk in order to express conviction in a specific thing (at an individual level) or secure a system (at a system level). Staked funds are subject to slashing if stakers or they objects they stake upon misbehave.

Bonding Curve - A scheme in which the price of a token is determined by its supply. The more tokens that have been distributed, the higher the price + visa versa. Typically used as an elegant mechanism to manage scarcity + price.

Community Inclusion Currencies (CICs) are assignable credit obligations redeemable for goods & services. These can be issued by communities to develop sustainable local markets when National Currencies are scarce.

Fractal DAO protocols, They make 'subsidiarity' easier to implement; Subsidiarity is critical for scalable informed participatory governance. Orca, 1hive Swarms are examples.

Natural Capital backed Assets. Strictly necessary to align regnerative finance with physical/natural world, not just social/economic world. CurveLabs and Kolectivo (formerly CuraDAO) are piloting these.



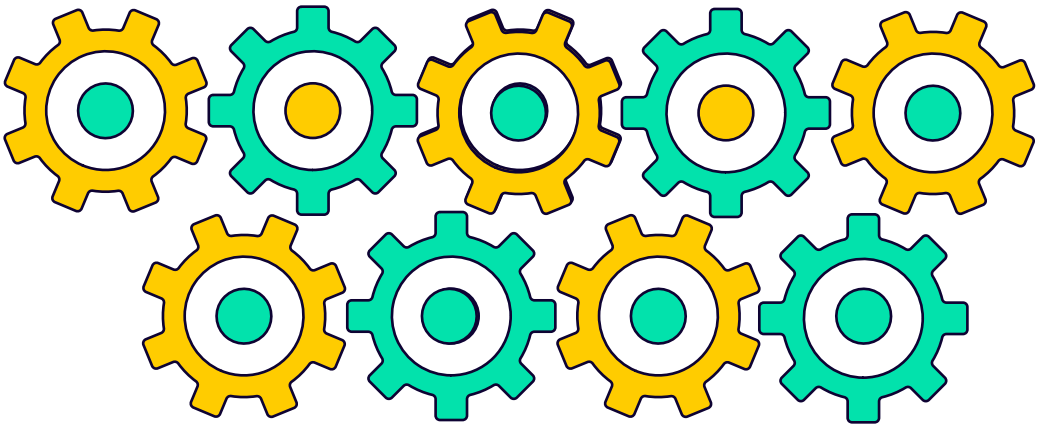
Mechanisms cont'd

Multisig Wallets - Multisig wallets allow a group of n people to control the actions of a cryptocurrency wallet if m of the n people agree on a single transaction, on a transaction by transaction basis.

Worker co-ops - A co op is a group of workers who have united to meet their common needs and operations through a jointly owned enterperise. Co-ops have been around for a while, but what is new in web3 is the opportunity to allow them to hit webscale or go global.

Data co-ops - A group organized for sharing pooled data from online consumers between two or more companies. Within a data co op, members offer their data to the collective - which creates an opportunity for more economic leverage for the sale of one's data than any individual collective member could have..

Miner Extractable Value - the maximum amount of value that can be extracted from the block production process (in excess of the standard block rewards and fees). Tangibly, this means that block producers can reorder transactions in order to front-run others transactions - which in some cases can lead to a lot of profit.

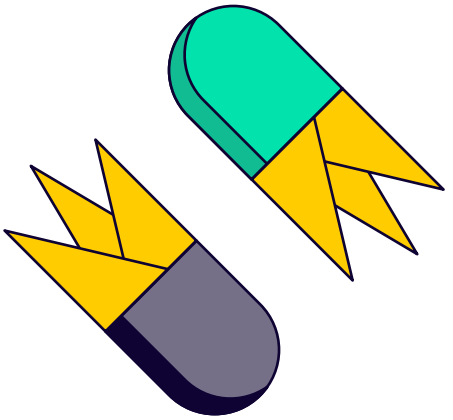


Mechanisms cont'd

Harberger tax - a mechansim that allows an ecosystem to strike a balance between pure private ownership & total commons ownership of a resource.

1. Citizens value their own property and pay tax on that value. A self-assessed tax.
2. At any point in time, anyone else can buy the property from you at that price, forcing a sale.

Lossless Lotteries - A way of running a lottery such that even if you do not win the lottery, you get to keep the price of admission into such lottery. By allowing users to stake funds in a lottery, and then using those funds to generate yield and rewarding the winner of the lottery with those yields, lossless lotteries are able to create a positive sum way of generating funds for winners (but without taking funds from the losers).

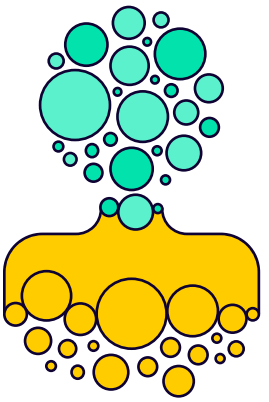


Unsolved Problems & Opportunities

Money Legos - Composability is the interoperability of different pieces of the internet of money such that they could be assembled like legos. Each new money lego is a freely available public good for any builder to use - creating an opportunity for each net-new builder in the space to “stand on the shoulders of giants”. It’s what creates the conditions that allow for the creation of exponentially more unique combinations of mechanisms over time.

Moving beyond 1:1 coin voting is an opportunity to create more cartel-resistant forms of governance. There are inequalities and incentive misalignments even in the absence of attackers (these systems can be dominated by the rich & powerful), and (outright attacks through various forms of (often obfuscated) vote buying in 1:1 coin voting systems.

Closing the gap between value creation & value capture remains a huge opportunity for funding public goods. The more people can worry about value creation & less they worry about value capture from business models, the more they are focusing on the public good. Mechanisms that measure value creation & reward participants for that value creation are possible with more objective (or intersubjective) measurement of value creation.



Unsolved Problems & Opportunities cont'd

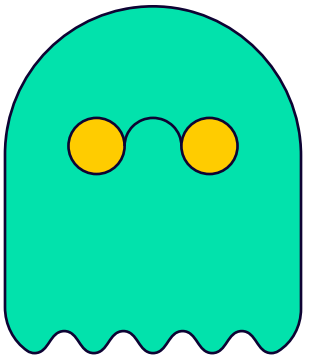
Decentralized Reputation Systems - Because so much value transfer in the world depends on the reputation of the parties in the transaction, it could be argued that Identity is an important part of the internet of value.

- When I get a job, I want to know who I am working with.
- When I loan someone money, I want to know their history of repayments.
- When I invest in a company, I want to know the founder's reputation to understand their character.
- When I get into an Uber, I want to know that my driver's reputation is free of major incidents.
- When I log in to my social feed, I want to know the credibility of the content/ authors I see.

Proof of Personhood - If we could find a cryptoeconomic way to prove unique human-ness, we could move the internet of finance from "one token one vote" to "one human one vote" and unleash a wave of digital democracy. With proof of personhood, the ecosystem could move to DAOs built on one-human-one-vote. This unlocks use cases like:

1. quadratic funding
2. one-person-one-vote or quadratic voting DAOs
3. Gini coefficient measurements
4. UBI

+ other use cases we havent discovered yet!



Unsolved Problems & Opportunities cont'd

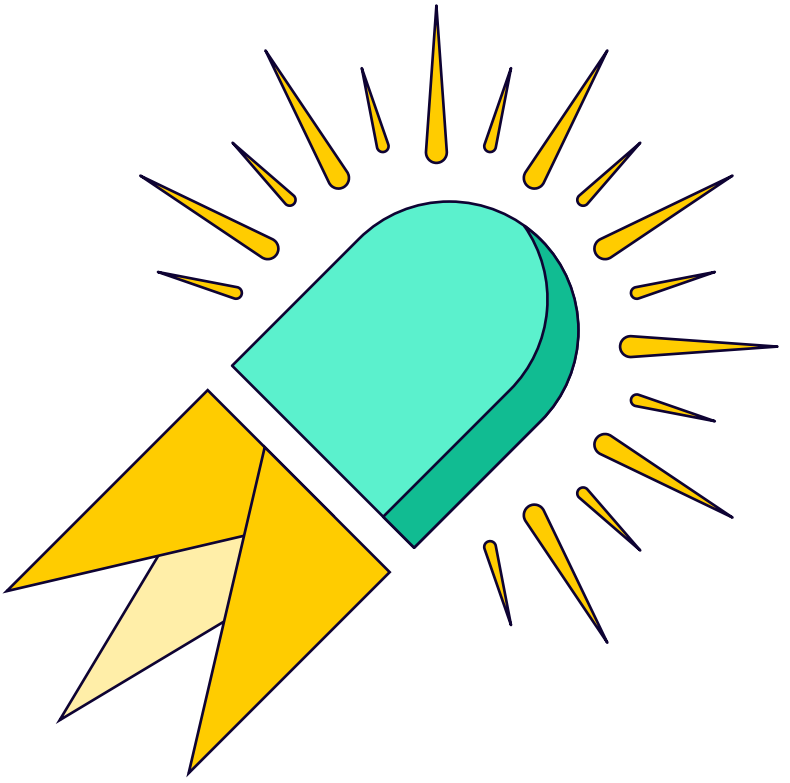
Privacy! Privacy! Privacy! - To prevent many dystopian outcomes, Privacy must be baked in to these mechanisms from the start.

The old world model of privacy is broken. The new world privacy model will be built around zero knowledge proofs, eg you will be able to prove attributes about yourself without revealing any more personal information about yourselves.

Persistent Pseudonomous Identities will be a thing -- People will need practical ways to let people build deep long standing reputations without practically doxxing their real world identities. Organically, ETH addresses with long complex history of transactions, NFTs and ENS are nice but its time frame, frequency and diversity transactions that are hard to fake / duplicate.

Other unsolved problems may exist, especially in systems with :

- High wealth inequality
- High levles of plutocracy or collusion
- High energy Inefficiency (In some networks)
- High misinformation & tribalism or dependance on Web2 Social Media
- Highly extractive economics
- Lack of education
- Lack of access
- Lack of diversity

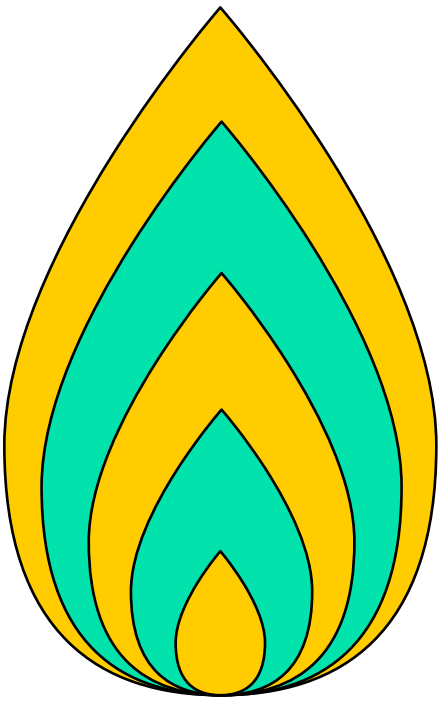


Unsolved Problems & Opportunities cont'd

ImpactDAO Ratings DAO - ImpactDAOs are the atomic unit of the Regenerative CryptoEconomics movement. The positive externalities produced by each ImpactDAO, when stacked upon each other, will hopefuly create an entire Regenerative CryptoEconomics stack.

But how are we to know which ImpactDAOs are truly having impact and which are just marketing? *"don't trust, verify"* is a mantra among cryptographers, how can we apply this to the growing field of ImpactDAOs?

Having an ImpactDAO Ratings DAO, which catalogued the positive and negative externalities of each ImpactDAO, would be an import piece of infrastructure (provided that it is governed in a transparent & credibly neutral way, to gain the legitimacy needed to be seen as impartial)

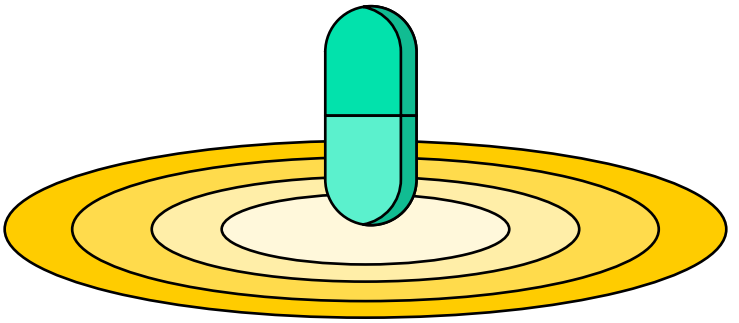


Starting small with healthy culture

It would be possible to overemphasize to creation of an academically perfect system, and in doing so, forget about the cultural & memetic needs of a community.

Starting with small pods of culture that are themselves healthy is a must. As a founder, your actions inform the actions of the first 5 people in your project. Those 5 inform the next 20, which informs the next 100, and so on.

Peter Pan, the founder of MetaCartel, one of the most prominent & first DAOs in web3, is a shining example of this. He formed MetaCartel as a series of “pods” with their own individual culture, vibes, and mission. Metacartel is not a single monolithic group. Each pod had its own mission, goals, and focus and tightly curated culture. They each started small + only grew when they were ready. Once they grew, they retroactive gave away governance rights based upon the values they had set early.



Meta-patterns

Here are a few meta-patterns you will find across different regenerative cryptoeconomic systems:

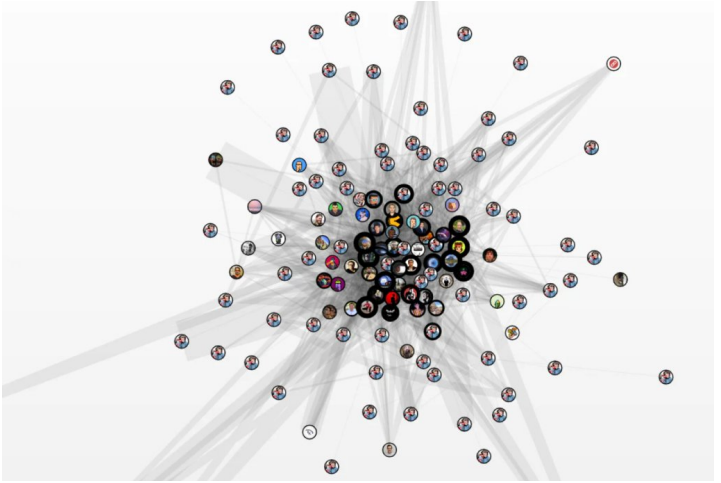
- **pluralism**: skin to biodiversity. The more pluralism there is across an ecosystem, this creates more antifragility as it grows.
- **expressivity**: eg the collection of primitives available should be reach enough to allow actors to express organizations we've not thought of yet.
- **simplicity/legibility**: individual primitives should be relatively simple, you can combine them into more complex assemblages.
- **standardization**: a sufficiently large library of legible primitives that you can almost always find a known simple/legible component that meets your needs, will accelerate innovation.
- **modularity/composibility:** this comes pretty naturally from simplicity and standardization, and assuming you collection of primitives is sufficiently expressive you can create assemblages that do just about anything.
- **symmetry between value creation & value capture** - when the value creation of a system is disconnected from the value capture, there will be an inherent misalignment between the incentives of actors in the system to focus on the capture of value instead of the creation of it. Therefore regenerative cryptoeconomic systems aim for symmetry between value creation & value capture.

Robust Signal Emission

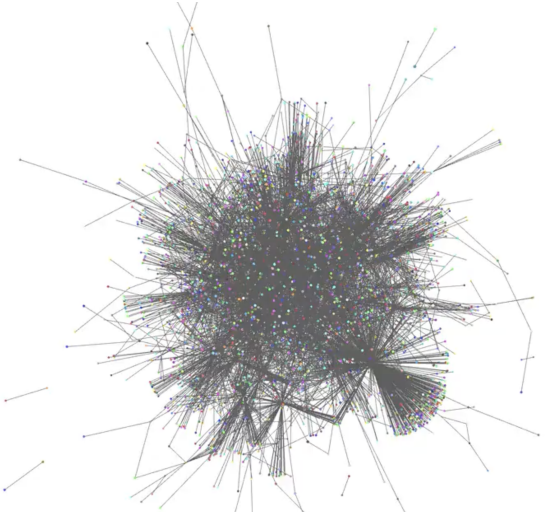
An alternative to governance via voting (which has historically had issues with plutocracy and low voter turnout) is robust signal emission.

The measurement of value creation via robust signal creation is a powerful way to allocate funds to an ecosystem of participants at scale.

By measuring what communities of participants within an ecosystem value, an intersubjective consensus of the value creation from that ecosystem is created. This intersubjetive consensus can form the basis of a distribution of retroactive tokenized rewards.



CoordinAPE Gift Circle for BanklessDAO Season 1



The economic graph of Gitcoin Grants Round 11

Robust Signal Generation

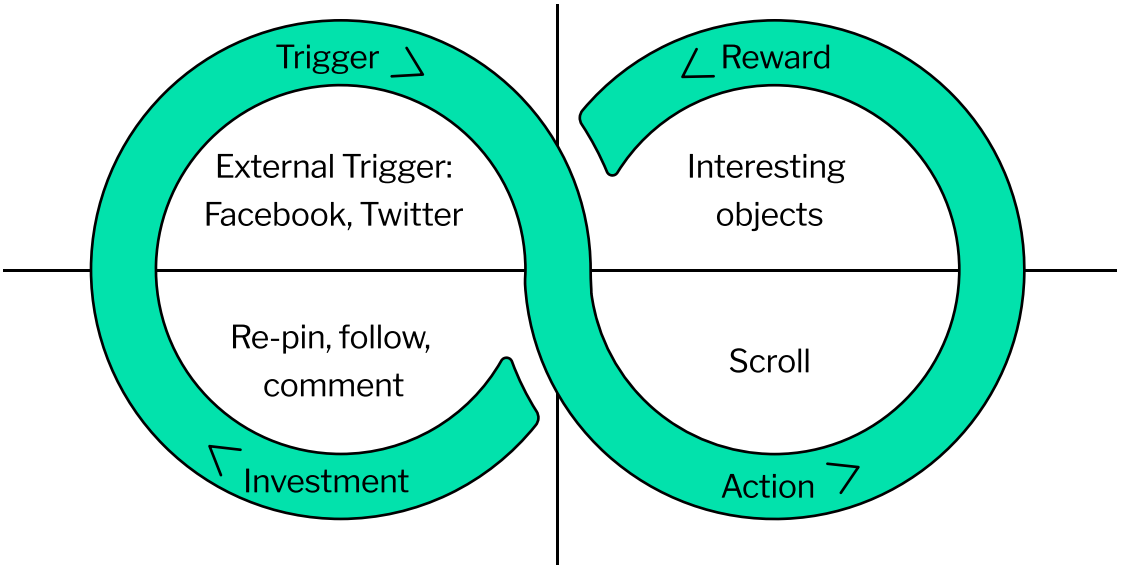
Of course, in order to create a robust set of signals, one needs to have an active ecosystem of participants.

To that end, there are a number of engagement hacking techniques that were pioneered in the web2 days, which also work in the web3 space.

While they are not regenerative in nature themselves, they can be assmebled into regenerative cryptoeconomic systems wherein their data emissions can be analyzed for regenerative purposes, and we include them on this basis.

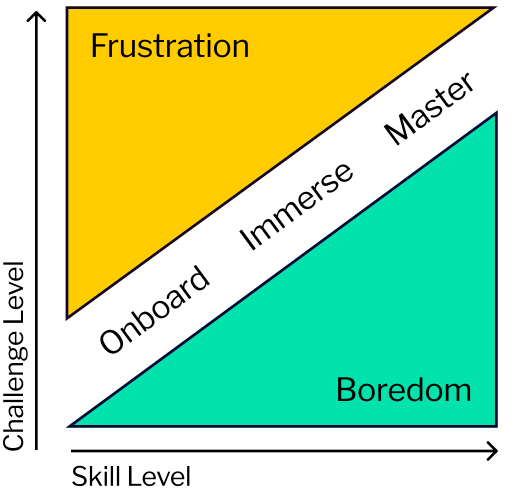
User Engagement Feedback Loop

Widely articulated by Pintrest, this articulation of a feedback loop of user engagement is designed to keep users engaged by triggering their interest to perform some action, for when they are given a reward + are prompted to make further investment of time or other resources.



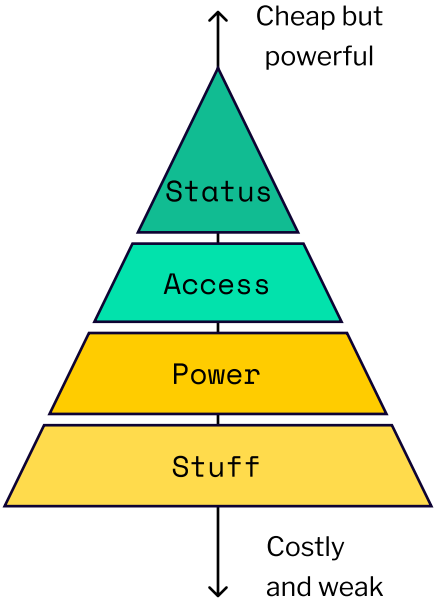
Balancing Challenge + Skill

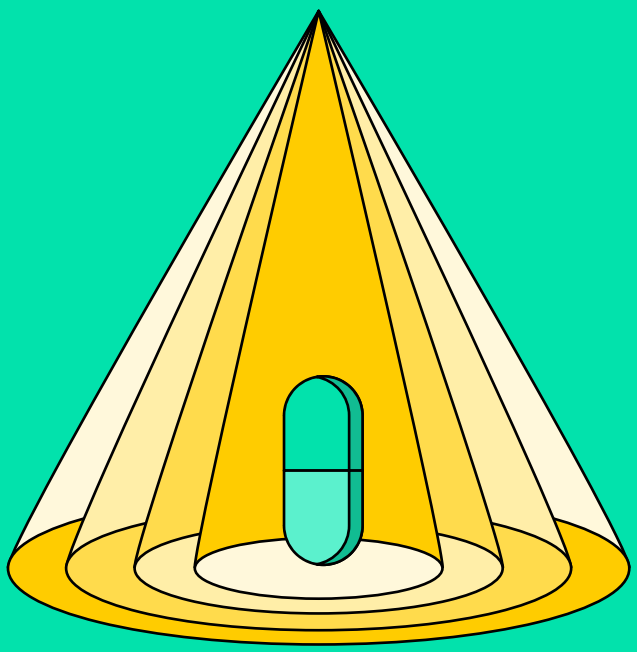
When onboarding users into a system, cryptoeconomic or otherwise, be careful to balance between challenge and skill. Too far to one side, and the user gets bored. Too far to another, and they get frustrated.



Reward Types

As users become more immersed in systems, cryptoeconomic or otherwise, different types of rewards can be deployed at differnt times in the funnel.





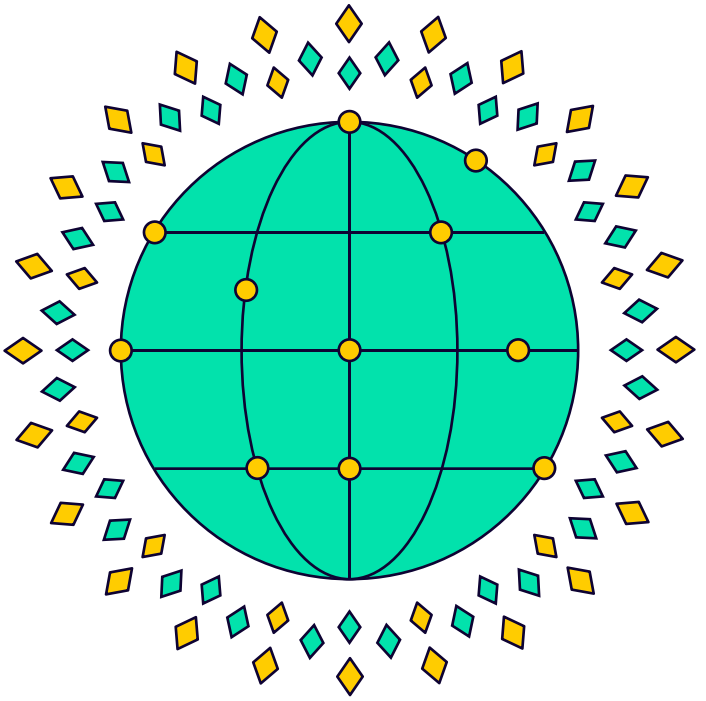
Chapter 6

Looking Forward (Civilizational Scale Regenerative CryptoEconomics)

As humanity transitions from the industrial age to the information age, our old institutions are decaying.

In this overton window, we have a once in a lifetime opportunity to build new, better, fairer institutions.

-- Anon



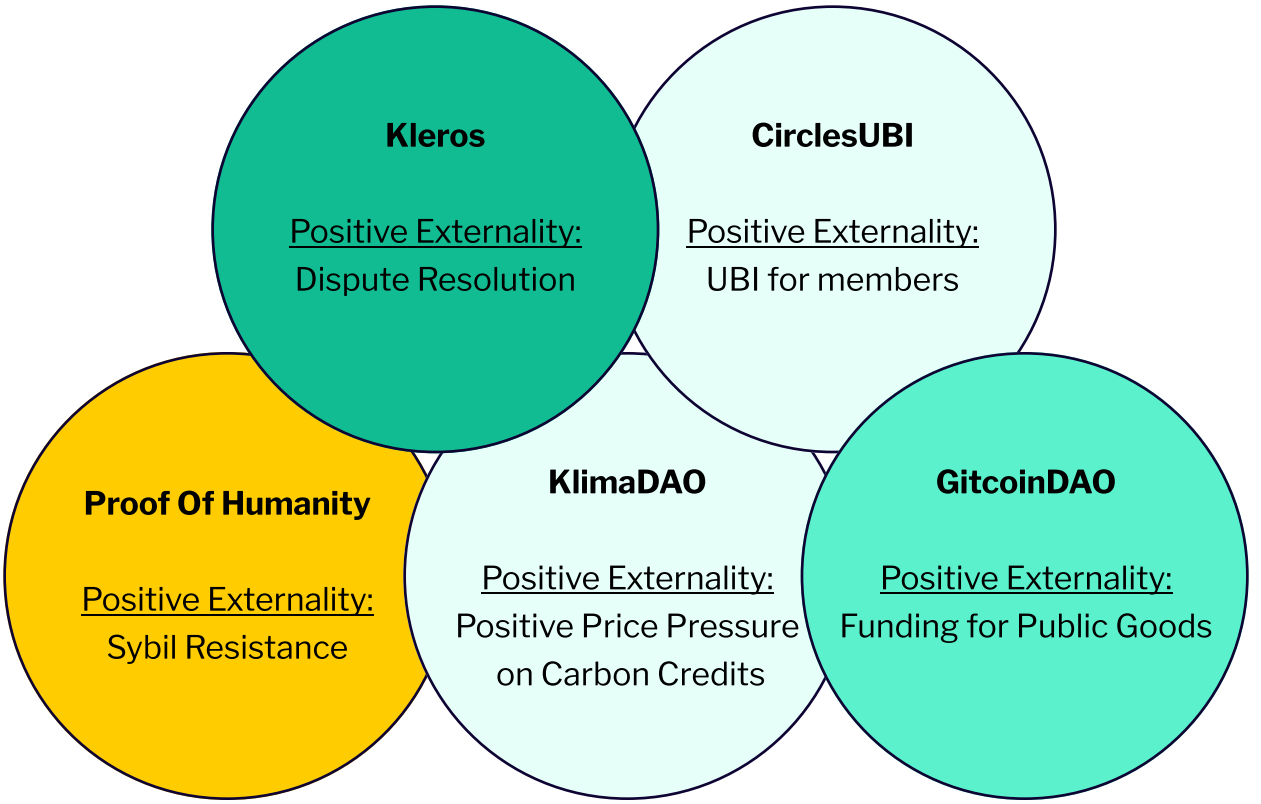
What is an ImpactDAO?

A **DAO** is a Decentralized Autonomous Organization; some DAOs are like global companies. Some are protocols. All of them use blockchains as a trust anchor.

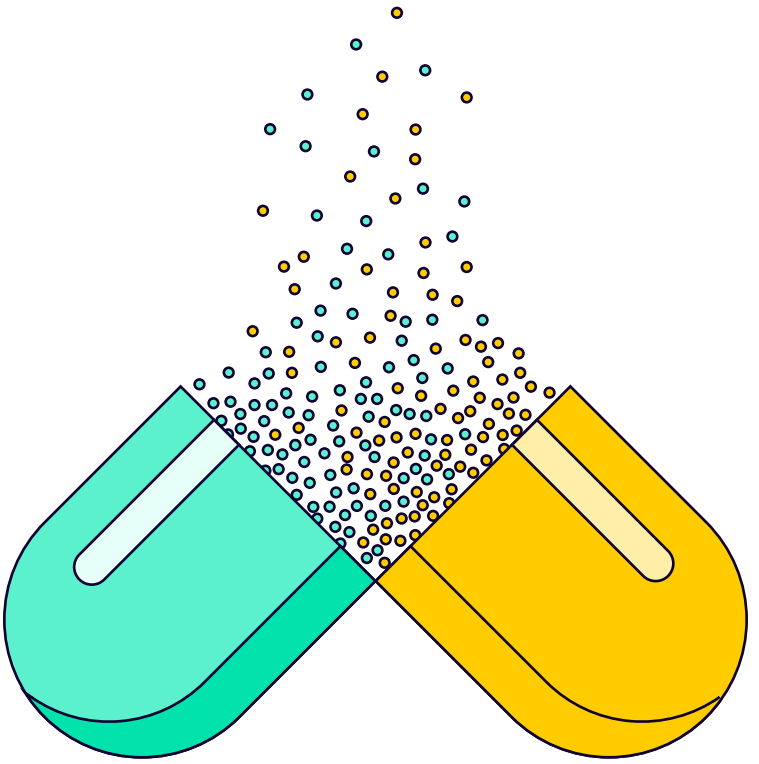
An **ImpactDAO** is any DAO that creates positive externalities for the ecosystem in which it resides.

ImpactDAOs are the scalable building block of a more regenerative economic infrastructure.

Examples of ImpactDAOs



One powerful attribute of clusters of ImpactDAOs is how the positive externalities flow between them. For example, Sybil Resistance flows from Proof of Humanity into GitcoinDAO, which in turn has funded projects in the Proof of Humanity Ecosystem, including KlimaDAO.



Two Ingredients for an ImpactDAO:

Mechanism & Funding Source

ImpactDAOs can vary in mechanism & funding source

ImpactDAO	Mechanism	Funding Source
Gitcoin Grants	Quadratic Funding	EF, DEFI DAOs, NFTs
MolochDAO	Pooled Funds + RageQuit	EF, Consensys
TEC	Tokens on Bonding Curves	Fundraising
Proof Of Humanity	Web of Trust	Inflation
Retroactive Public Goods Funding	Badge holders	Optimism Sequencer Fees

The diversity in the mechanisms & funding sources for ImpactDAOs creates a pluralism (and anti-fragility) in the way public goods are funded.

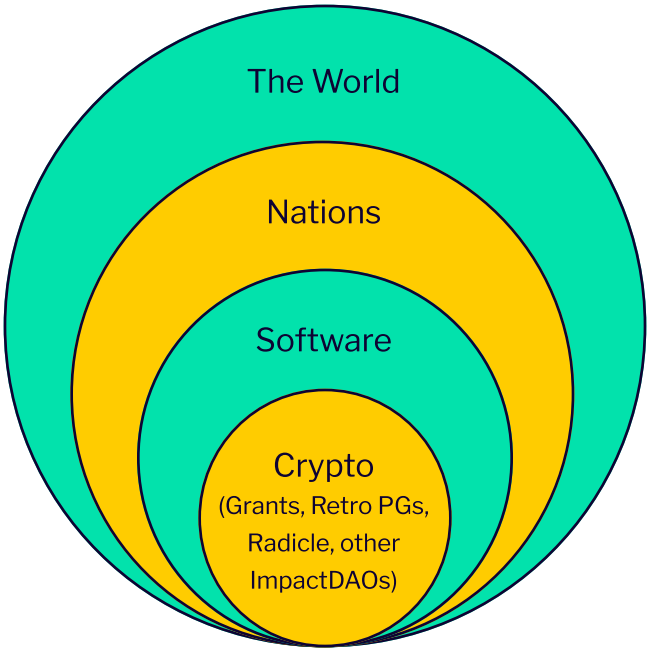
The Big Idea

1. Build a parallel opt-in system for funding digital native public goods, which operates at greater efficiency at a greater scale.

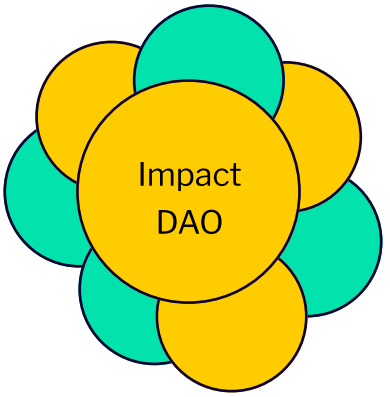
2. This parallel opt-in system could increasingly support non digital public goods.

3. As more people quit their private jobs to work on public good, energy in one public good seeps into another, a sense of 21st century native civic pride emerges, momentum compounds outwards in a virtuous cycle of growth.

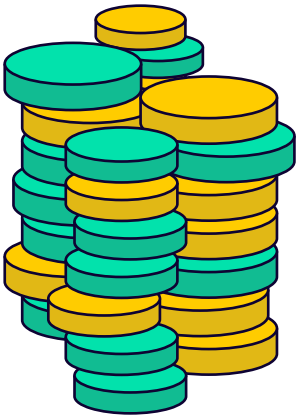
4. More global public goods get funded. Over decades, economies & democracies all over the world get upgraded be higher bandwidth for the digital age, creating more human thriving.



ImpactDAOs can stack



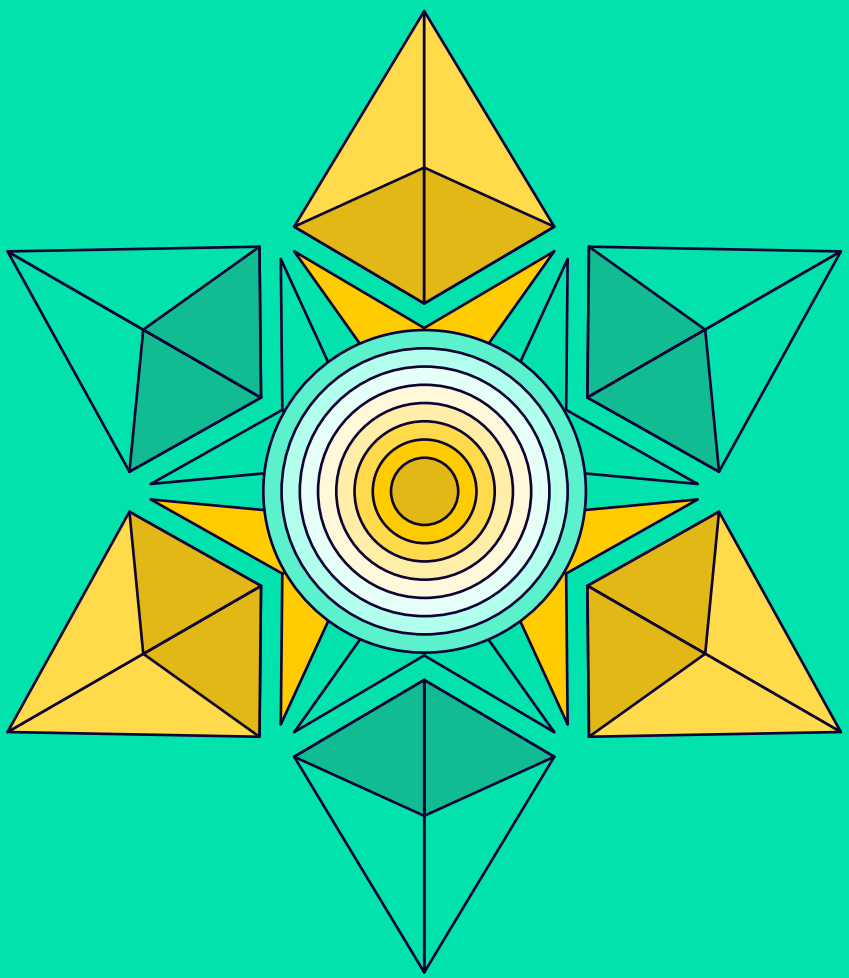
Each ImpactDAO benefits from all the stacked ImpactDAOs supporting their work.



Each ImpactDAO benefits when public goods below them in the stack are funded.

Scalability: ImpactDAO stacking is how growth compounds, momentum builds, and regenerative cryptoeconomics eventually becomes inevitable.

Pluralism: Because each ImpactDAO can have a different mechanism or funding source, this leads to a more pluralistic public goods funding infrastructure.



Chapter 7
Git Involved

All coordination is a choice.

We have to choose the future we want in the day to day choices we make - not only in the types of assets we buy, but also in where we put our scarce time, attention, and skills.

-- Anon

Contribute to the next edition of this book

If you would like to join the community of writers and educators forming around this book, then please scan this QR code or go to this URL:

https://t.me/+c_BxQmyxXdg2YThh

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Join the fight against Moloch

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Thank you to the following organizations & people who have made the work that GitcoinDAO has done possible with their generous financial contributions:

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Learn more about how you can financially
support public goods on Gitcoin @

https://gitcoin.co/grants/12/gitcoin-grants-official-matching-pool-fund

IT’S ALL COORDINATION

An inchoate virtous cycle

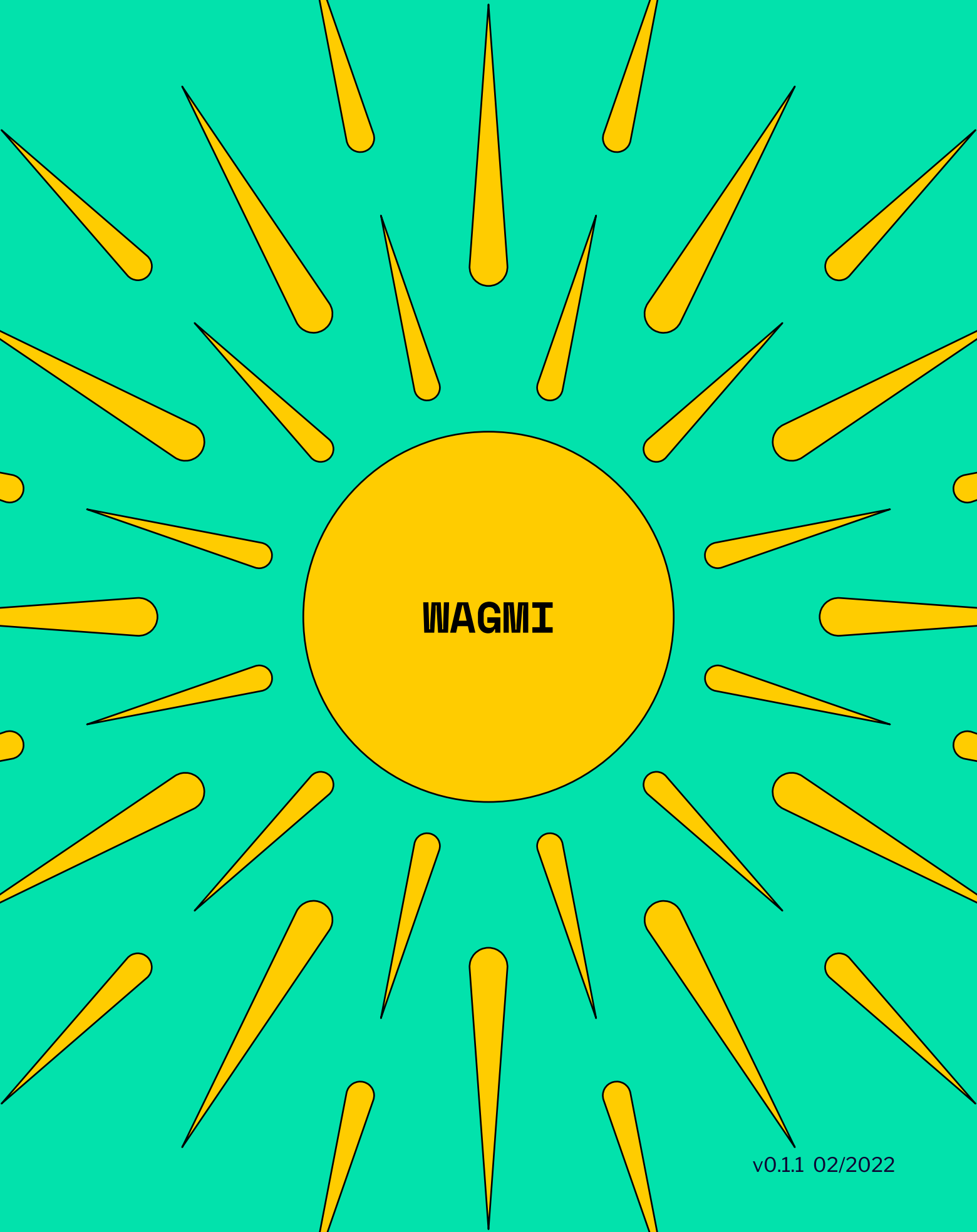
All coordination is a choice. To win this coordination game, we need to choose to coordinate to make this into a multiplayer game. Once the multiplayer game is bootstrapped, we need to choose coordinate to win it. Once we win it, we must coordinate to maintain its legitimacy.

We do these things not for their own sake, but as a means to create human thriving. If we collectively all take the green pill, we create a more solarpunk world. If we collectively do not, we continue to maintain the status quo. Regenerative CryptoEconomics is here, it's important, and it's happening. But it is also inchoate. To grow, it needs you.

The overton window is open. Join the movement. Do what your skills & abilities uniquely enable you to do. Spread the word. Build something. Learn from your mistakes, & throw it out & build something else. Host a meetup. Be honest about where we're winning & also where we fall short. Do what feels right to you. Do your own research. Beware any charistmatic leader who claims to have all the answers (including me). The leader is the person who knows what to do next.

And whatever you do, remember to coordinate.

- @owocki



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