Web3 Governance

Anthony Lee Zhang

December 1, 2022

Web3 and Governance

- Social Choice
  - Arrow's impossibility theorem, Gibbard-Satterthwaite theorem
  - Shareholder voting and its issues
- Token voting
- Case studies
  - Beanstalk Farms
  - Mango Markets
  - Curve/Convex
  - MakerDAO
- Gitcoin
- Centralized solutions

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  - **Dictatorship:** person 4 chooses (B)

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- **Arrow's Impossibility Theorem:** no social choice rule satisfies all three properties at once!
- Social choice is a hard problem!

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  - I like Applebee's but no one else does, so I'll pretend I like Burger King more than Applebee's, because it has a higher chance of winning
- This is true for **any nontrivial voting rule you use!**

Tl;dr

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- Markets are fairly "easy"!
  - In simple models, competitive markets reach "Pareto efficient" outcomes
- Social choice is very hard!
  - We can prove that there are no "good" mechanisms!
  - We're stuck making tradeoffs among mechanisms we know are "bad"

Shareholder Voting?

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- Shareholder voting in a for-profit organization is an easier problem than social choice, because **we all want to maximize profits:** everyone's incentives are aligned!
- We might disagree on the best business strategy to maximize profits, hence we need voting...
- But the "failures" of shareholder voting are much less bad than the failures of social choice
  - Shareholder voting: end up with a bad CEO
  - Social choice: give 9 people a dollar...

What if we don't just care about money?

TECHNOLOGY

Elon Musk found not liable in trial over Tesla's SolarCity acquisition

The judge said the 'verdict is for the defense on all claims'

By Faiz Siddiqui

Updated April 27, 2022 at 8:05 p.m. EDT | Published April 27, 2022 at 5:04 p.m. EDT

Source

What if we don't just care about money?

"[My] verdict is for the defense on all claims," the judge, Joseph R. Slights III, wrote in his opinion.

Tesla acquired SolarCity for $2.6 billion in 2016. Musk at the time owned a large portion of SolarCity, which was run by two of his cousins. Tesla shareholders alleged Musk was acting in his own interest with the purchase, rather than that of the electric vehicle company, now the world's most valuable carmaker. Shareholders had argued that the acquisition of SolarCity amounted to a bailout of a struggling company in which family members were involved.

[Elon Musk defends Tesla solar deal in court, calls opposing lawyer 'a bad human being']

In his opinion, Slights summarized the plaintiffs' view: that Musk made Tesla's "servile" board greenlight the acquisition of an "insolvent" SolarCity to bail out an investment by him and family members that was not panning out.

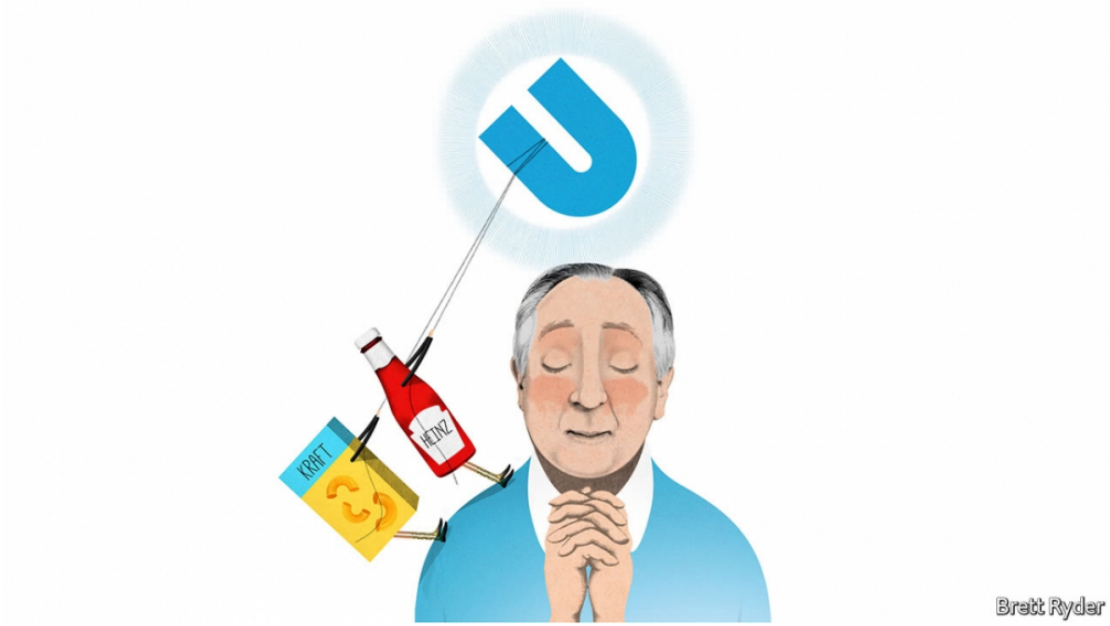
Source

What if we don't just care about money?

Schumpeter

The parable of St Paul

Unilever is the world's biggest experiment in corporate do-gooding



Print edition | Business Aug 31st 2017

Source

What if we don't just care about money?

PAUL POLMAN runs Europe's seventh-most valuable company, Unilever, worth $176bn, but he is not a typical big cheese. A Dutchman who once considered becoming a priest, he believes that selling shampoo around the world can be a higher calling and detests the Anglo-Saxon doctrine of shareholder primacy, which holds that a firm's chief purpose is to enrich its owners. Instead Mr Polman preaches that companies should be run "sustainably"—by investing, paying staff fairly, and by making healthy products with as little damage as possible to the environment. This is actually better for profits in the long run, he argues: society and shareholders need not be in conflict.

w.economist.com/news/business/21727908-unilever-worlds-biggest-experiment-corporate-do-gooding-parable-st-paul

The parable of St Paul

Mr Polman's beliefs were tested in February when Unilever received a bid from Kraft-Heinz, a ketchup-to-hot dog gorilla controlled by Warren Buffett and 3G Capital, a fund known for ripping costs out of multinationals. If, in its own mind, Unilever is a good corporate citizen, then it sees Kraft as an angry American with no interest in the planet, heavy debts, no growth, very little foreign presence, and an obsession with self-harming cost cuts.

Source

The Laziness Problem

- It takes time and effort to figure out what the profit-maximizing action is!
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- When shareholding is concentrated, free-riding problem is alleviated somewhat
  - See Shleifer and Vishny, Large Shareholders and Corporate Control
- Problem is worse with large index funds, which have slim expense ratios and invest little in monitoring companies by design
  - See for example this LSE blog post

Voting With Your Feet: Path-Dependency of the Investor Base

Trading and Shareholder Democracy

Journal of Finance, Forthcoming
European Corporate Governance Institute – Finance Working Paper No. 631/2019

63 Pages • Posted: 3 Oct 2019 • Last revised: 22 Apr 2022

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There are 2 versions of this paper

Date Written: April 20, 2022

Abstract

We study shareholder voting in a model in which trading affects the composition of the shareholder base. Trading and voting are complementary, which gives rise to self-fulfilling expectations about proposal acceptance and multiple equilibria. Prices and shareholder welfare can move in opposite directions, so the former may be an invalid proxy for the latter. Relaxing trading frictions can reduce welfare, because it allows extreme shareholders to gain more weight in voting. Delegating decision-making to the board can help overcome collective action problems at the voting stage. We also analyze the role of index investors and social concerns of shareholders.

Shareholder Voting: Summary

- **Social choice** is an "unsolvable" problem
- **Shareholder voting** in for-profit corporations is easier, because we can assume some degree of incentive alignment: everyone wants to make money

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- **Social choice** is an "unsolvable" problem
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- But, a number of issues:
  - ESG, or "funneling": things break when you can run firms in a non-profit-maximizing way
  - Laziness and free-rider problems: no one wants to put the effort in to figure out what to do
  - Path Dependency: possibility of selling and leaving implies multiple possible equilibria, where some leave and remaining take over
  - Tradability of votes leads to potentially worse "takeover attacks"

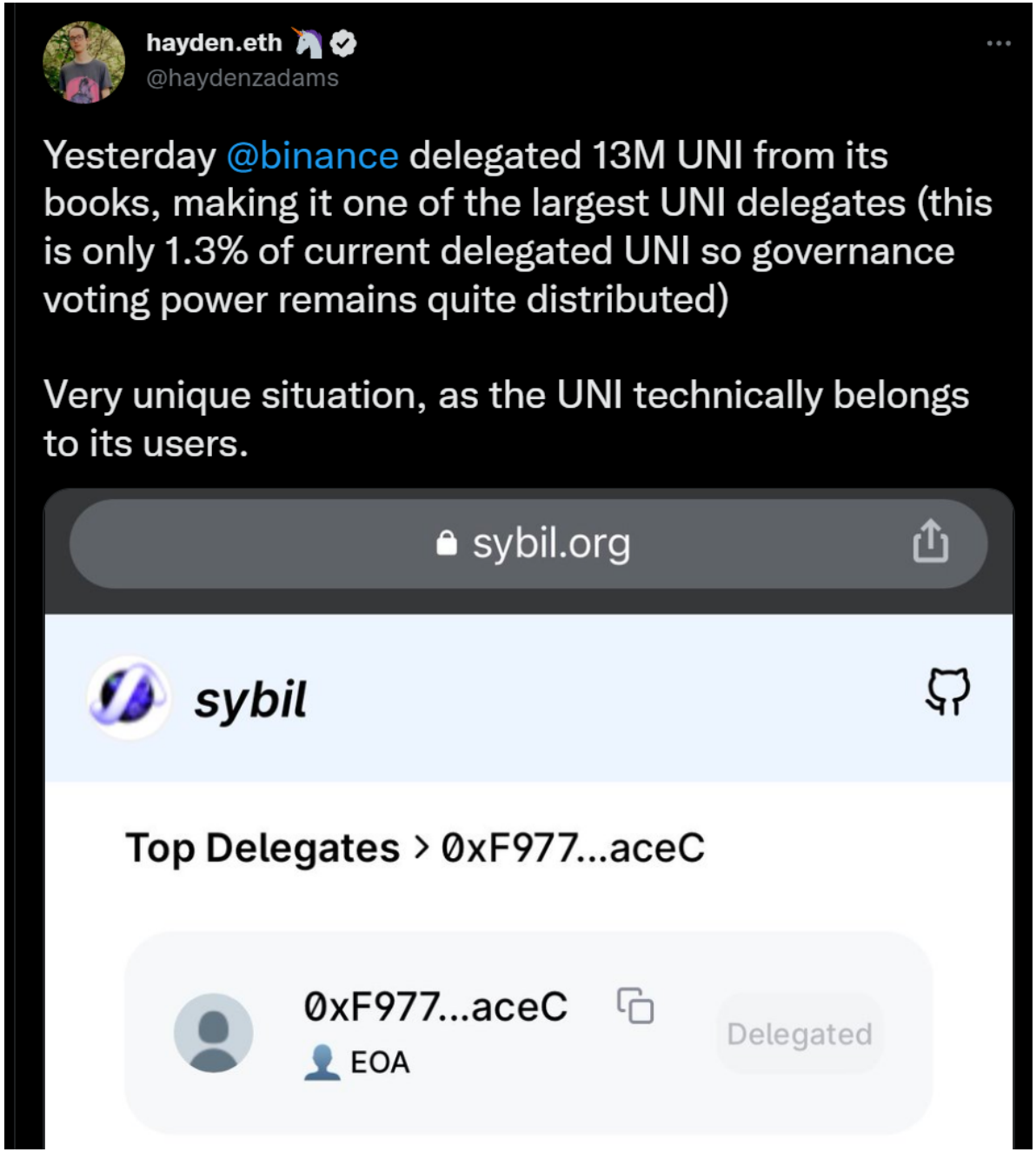
Tokens

- Tokens are a bundle of rights:
  - Monetary (Sell token for $$$!)
  - Utility (ETH used to pay gas)
  - Governance (MKR, UNI, CRV used to vote)
- Not everyone values all rights!

Delegation

- VCs hold a bunch of tokens, caring about the monetary value of tokens
- Don't have the resources to research + vote using the tokens!
- Hence, often delegate to student blockchain groups!
- UChicago has delegated tokens for MakerDAO, Compound, Aave, Uniswap, and possibly others...
- If interested in helping out, join ChicagoDAO discord, and see their website

Other Delegators...?



Other Delegators...?

Source and Source

Case Study: Beanstalk Farms

- Beanstalk is an algo-stable protocol: holds a bunch of assets as reserves
- Has equity-like governance token, which can be printed based on providing liquidity to BEAN-3pool Curve pool
- Equity allows passing of arbitrary code changes
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  - Pass new code, send all money to private address

See Rekt coverage, my tweet thread, a blog post, and blog post

Case Study: Mango Markets

- Mango Markets is a defi "everything protocol": margin trading, perps, collateralized lending...
- Basic structure of attack: (see Rekt post)
  - Enter large long MNGO position
  - Manipulate MNGO price upwards through spot trading, paper gains of $420mil
  - Borrow all $116mil of Mango's assets against manipulated MNGO
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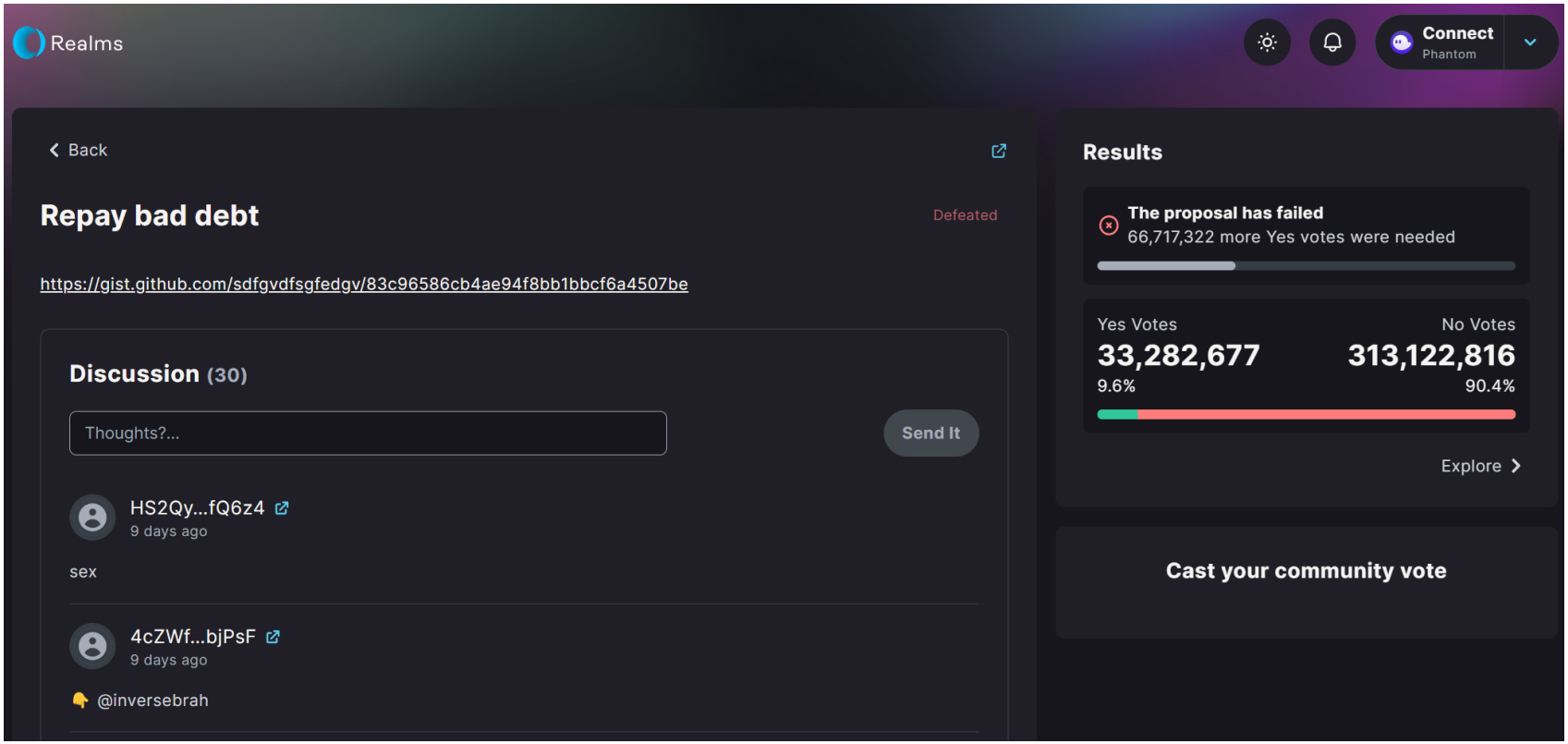
- Hacker then used his hacked MNGO tokens to vote for the proposal...

Mango Markets



Source

Mango Markets

9KM7h...bcN5n
10 days ago

No | 1 Mango

You exploit +$100M and want to return only part of it ? Seems you funded your account from FTX (maybe you did a fake KYC & VPN for each FTX login... otherwise it's better for you to return all funds to the team)

47BDB...b5GoC
10 days ago

You're disgusting. What you did is wrong in every way possible. The responsible thing to do would have been to disclose the vulnerability to the team, NOT EXPLOIT IT. I hope the law enforcement community shows you ZERO MERCY. You still have the opportunity to make this right. Return the funds & disappear, or risk (90%+ certainty) spending many, many years as someones bitch in jail. Karma will find you, it always does.

GJByq...W4Ay2
10 days ago

I hope you know that many of us are individuals trading on Mango as a full time job, trying to generate income without becoming corporate drones, and this affects our real lives. I'm not a company or a gambler, trading on Mango is my main source of income. It's my fault for having too much money on Mango but I hope you can at least sympathise with single individuals like me who just lost most of their savings and their main source of income. Please message me through proton which is a secure/private platform at mangomarketmaker@proton.me

DfCHM...r6Ty9
10 days ago

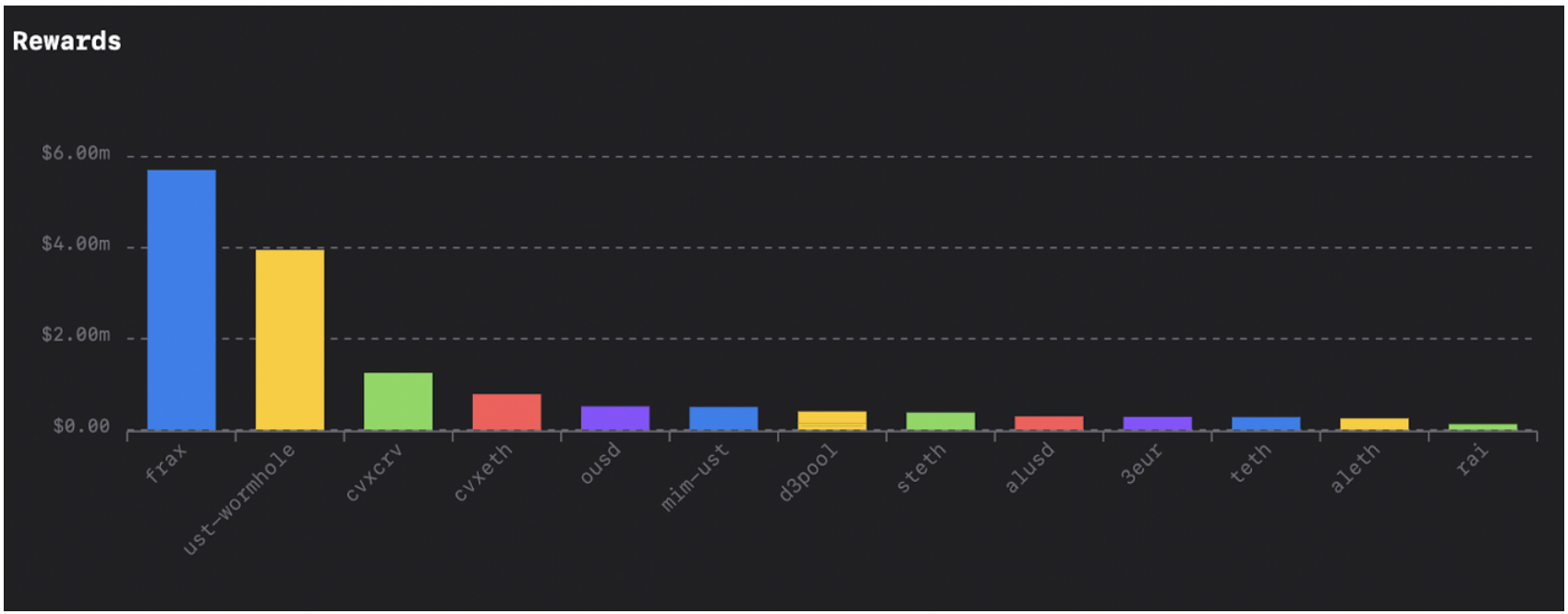
Yes | 28,599 Mango

WAGMI

Case Study: Curve/Convex and the Market for Bribes

- Previously we discussed **Curve/Convex**, how they enable a market for bribes: anyone can pay users for voting on certain pools
- Votium allows users to stake CVX, sells CVX voting rights to buyers, and passes profits back to stakers: selling votes to the highest bidder!
- Kind of "works", though questionable whether system was intended to function this way...

Curve/Convex and the Market for Bribes



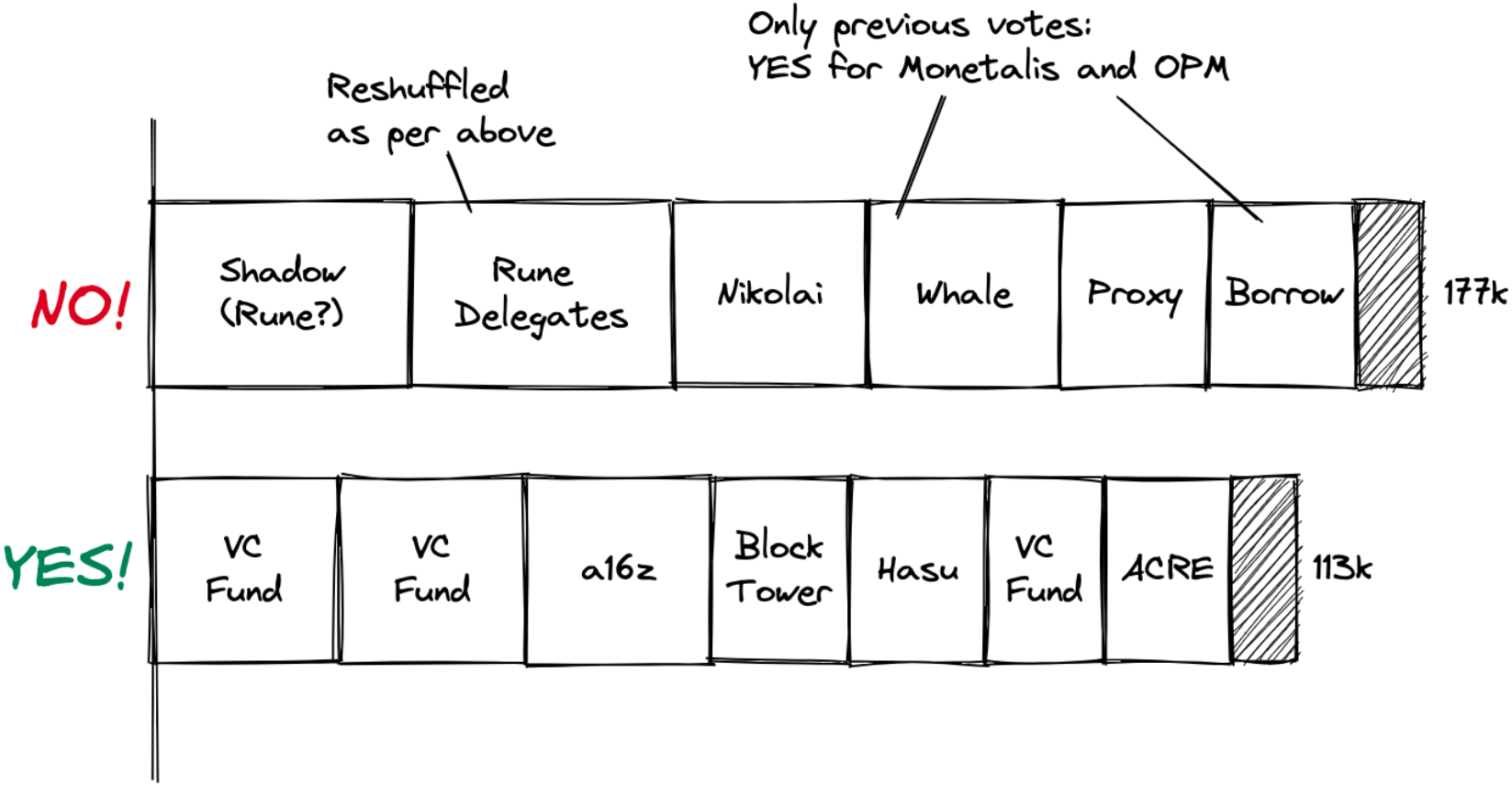
Source

Case Study: MakerDAO Governance

- MakerDAO started printing DAI stablecoins against ETH using price oracles
- However, price peg doesn't hold very well, so MakerDAO added USDC as collateral
- USDC has a "blacklist", creating centralization risk: MakerDAO USDC could in principle be blacklisted!
- Since DAI is thought to be sound, also some efforts to print DAI against RWAs, like SocGen bonds and a Tesla factory
- Two competing visions for future of MakerDAO:
  - Founder Rune and supporters: radical decentralization, no RWAs, no USDC
  - VCs: "practical centralization", USDC, RWAs, focus on bigger mkt size and impact

Source: Dirt Roads, see also here

MakerDAO Governance



Source: Dirt Roads

Vitalik: Moving beyond coin voting

Moving beyond coin voting governance

2021 Aug 16 See all posts

Special thanks to Karl Floersch, Dan Robinson and Tina Zhen for feedback and review. See also Notes on Blockchain Governance, Governance, Part 2: Plutocracy Is Still Bad, On Collusion and Coordination, Good and Bad for earlier thinking on similar topics.

One of the important trends in the blockchain space over the past year is the transition from focusing on **decentralized finance (DeFi)** to also thinking about **decentralized governance (DeGov)**. While the 2020 is often widely, and with much justification, hailed as a year of DeFi, over the year since then the growing complexity and capability of DeFi projects that make up this trend has led to growing interest in decentralized governance to handle that complexity. There are examples inside of Ethereum: YFI, Compound, Synthetix, UNI, Gitcoin and others have all launched, or even *started with*, some kind of DAO. But it's also true outside of Ethereum, with arguments over infrastructure funding proposals in Bitcoin Cash, infrastructure funding votes in Zcash, and much more.

The rising popularity of formalized decentralized governance of some form is undeniable, and there are important reasons why people are interested in it. But it is also important to keep in mind the risks of such schemes, as the recent hostile takeover of Steem and subsequent mass exodus to Hive makes clear. I would further argue that these trends are unavoidable. **Decentralized governance in some contexts is both necessary and dangerous**, for reasons that I will get into in this post. How can we get the benefits of DeGov while minimizing the risks? I will argue for one key part of the answer: **we need to move beyond coin voting as it exists in its present form**.

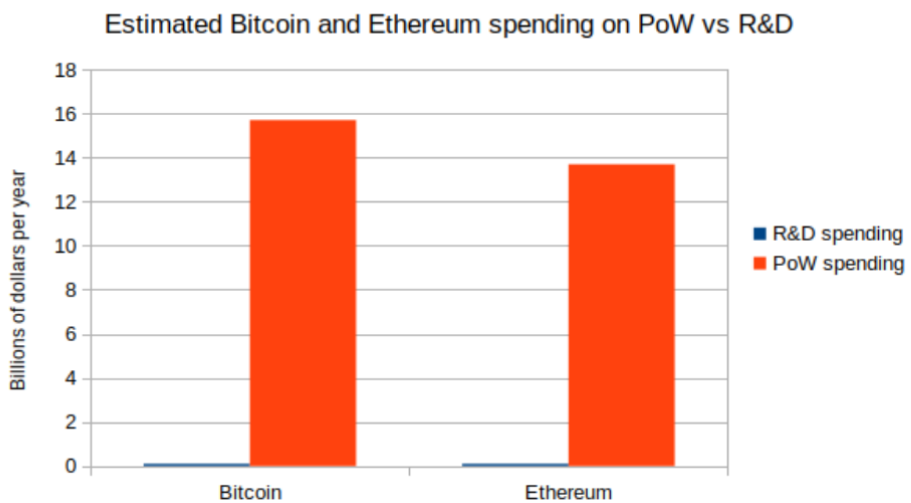
Source, see also this post

Vitalik: Moving beyond coin voting

The need for DeGov for funding public goods

It is worth stepping back and seeing the absurdity of the present situation. Daily mining issuance rewards from Ethereum are about 13500 ETH, or about $40m, per day. Transaction fees are similarly high; the non-EIP-1559-burned portion continues to be around 1,500 ETH (~$4.5m) per day. So there are many billions of dollars per year going to fund network security. Now, what is the budget of the Ethereum Foundation? About $30-60 million per year. There are non-EF actors (eg. Consensys) contributing to development, but they are not much larger. The situation in Bitcoin is similar, with perhaps even less funding going into non-security public goods.

Here is the situation in a chart:



Source, see also this post

Gitcoin

- Gitcoin: platform for allocating money to grants, people decide where grant money goes
- Clever mechanism, Quadratic Funding: see video, and paper by Buterin, Hitzig, Weyl
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- Cool decentralized mechanism, some product market fit!
- But doesn't solve the basic problem that there's too little incentive to build public goods...
- **Project idea:** where else can quadratic funding be applied? Can we improve on quadratic funding?

Centralization, Internalization, and Governance

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  - Similar in corporate settings: sole proprietorships have pretty aligned incentives!
- Why don't we just have sole proprietorships for everything?
  - Capital constraints: I don't have enough money to start a project
  - Inequality: some projects are worth a lot, don't want too many billionaires
  - Justice, democracy, "decentralization": if a protocol affects a lot of us, want decision-making to be affected by many of us

Centralization, Internalization, and Governance

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- "VC-chains" tend to invest in "public goods" and ecosystem growth: Solana, Avalanche, Luna
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- Also throw lots of parties. . . branded conveniently as "hackathons"
- Keep an eye out!

Governance: Project Ideas

- What are better token voting systems?
  - How to prevent governance attacks? "tenure voting" ("token in box" issue)?
  - Time-locked governance proposals? (Beanstalk had this...)
  - "Limited dictatorships"?
- What are better ways to fund public goods? Can we improve on quadratic funding?
- We're early days, and a lot of open space here!