

The Grand Vision of **Futarchy**

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My Journey

- '84 Grad school → silicon valley for AI, *Xanadu*
- '89 "Could Gambling Save Science?", *Xanadu* markets
- '94 *Foresight Exchange*
- '99 "Vote on Values, But Bet on Beliefs"
- '03 *Policy Analysis Market*
- '12 *DAGGRE, SciCast*
- '23 govt med. org., *MetaDAO*

Social Science Lenses

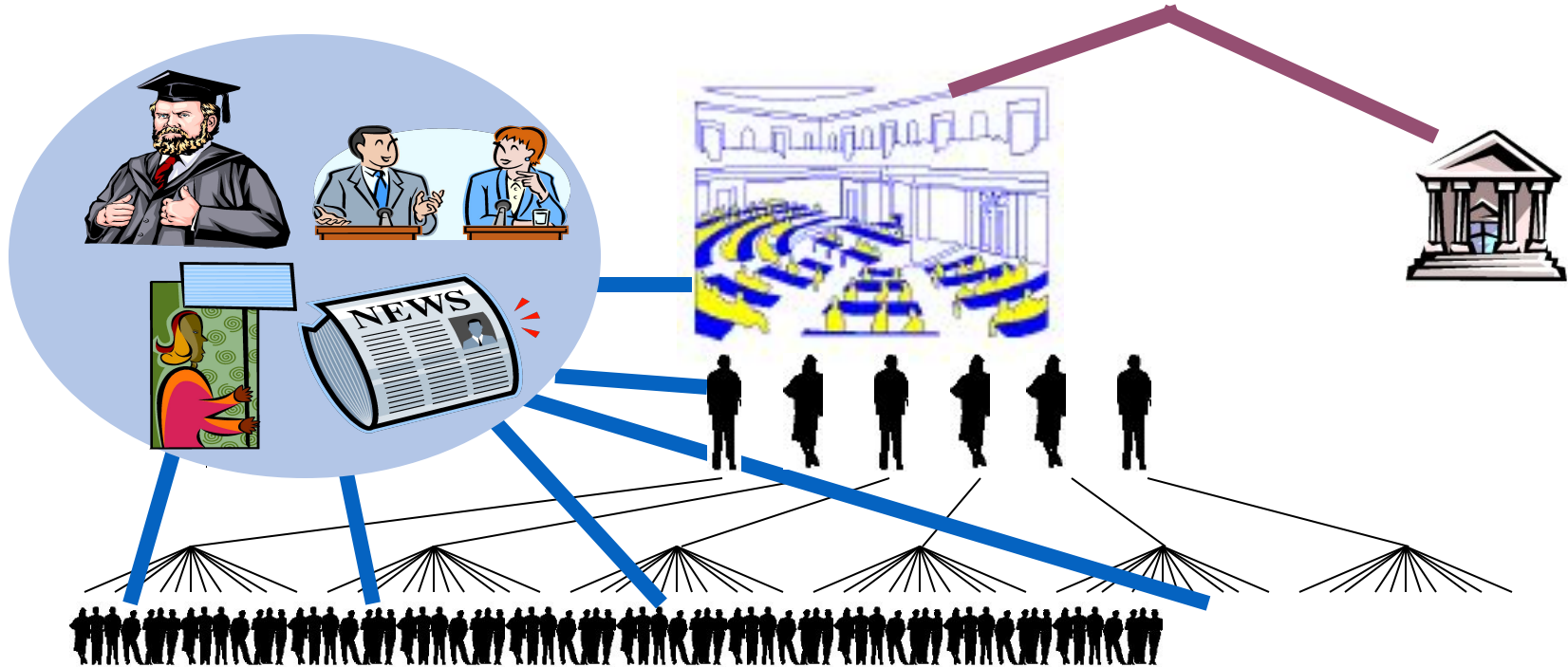
- **Goods & Services** – Markets, Family, Govt
- **Power & Strategy** – Govt, Firms, Property
- **Norms & Prestige** – Customs, Culture
- **Info Infer & Join** – Gossip, News, Votes, Academia, Orgs, **Speculative Markets**
- ***Social Dark Matter***

Conditional Policy Questions

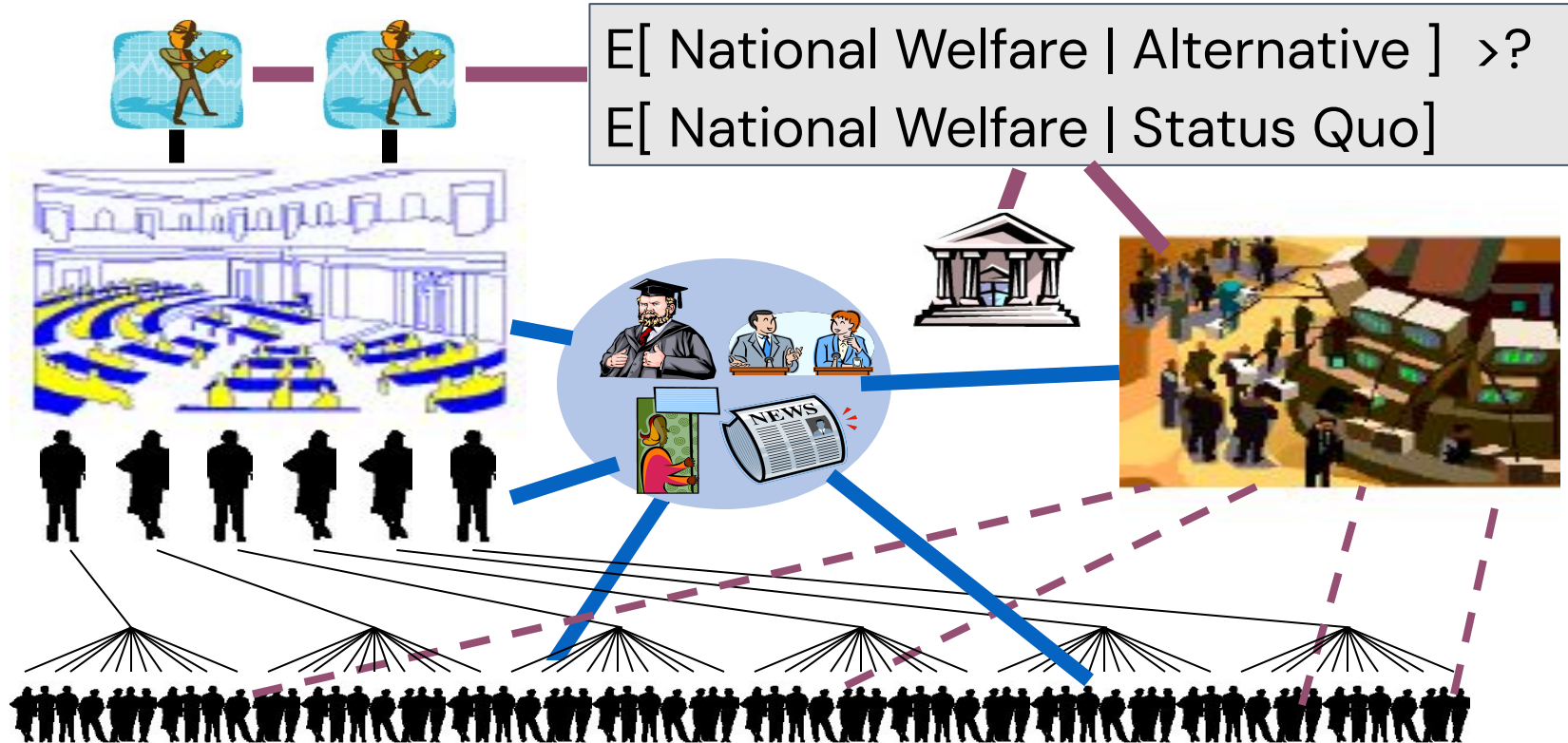
- E[Relation duration | X,Y have first date]
- E[X's evaluation in 2yrs | hire X as new employee]
- E[Project P makes its deadline | add resources]
- E[GPA of X | admit X as student]
- E[Firm stock price | dump CEO?]
- E[Red team gets in | new building security]
- E[Crime rate| crime reform]
- E[Inflation | Fed raise rates]
- E[Comp. industry consumer surplus | break up MSFT]

Our Democracy

Passed Bills => Laws



Vote On Values *But* Bet On Beliefs



Speculative Market Advantages

- Numerically precise
- Consistent across many issues
- Frequently updated
- Hard to manipulate
- Need not say who how expert when
 - Issue is not experts vs. amateurs
- At least as accurate as alts. (in dozens of trials)
- Easy to subsidize so \$ *only* to info adders

Incentives
Self-Selection
Correct Biases

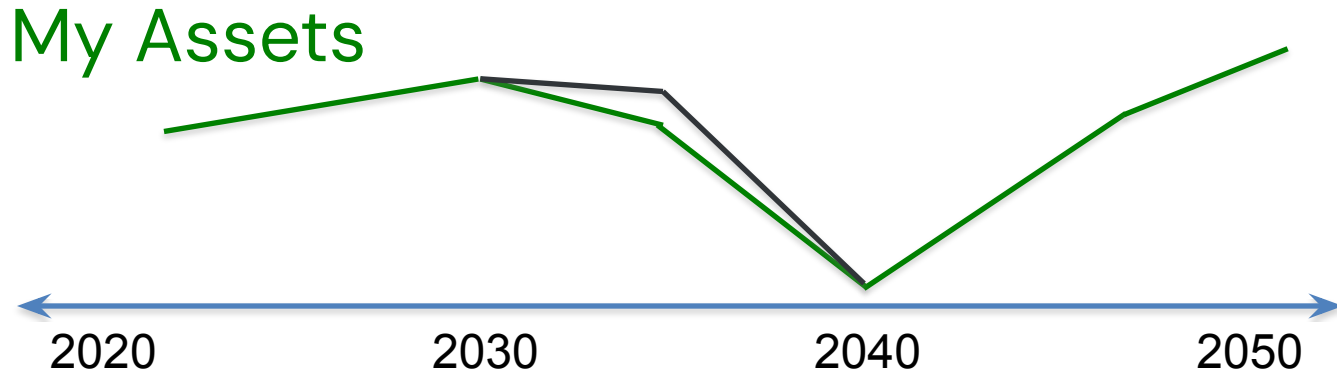
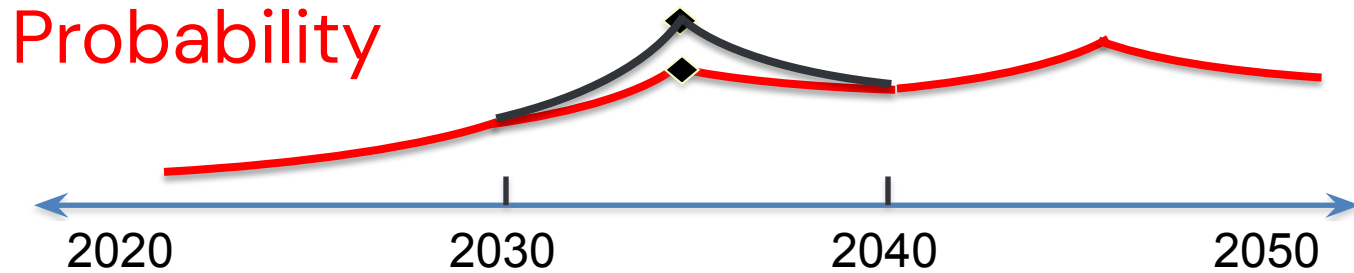
(Tournaments: org picks Qs, players, scoring fn., consensus fn.
Similar gains, but must trust center who manages)

Tricks

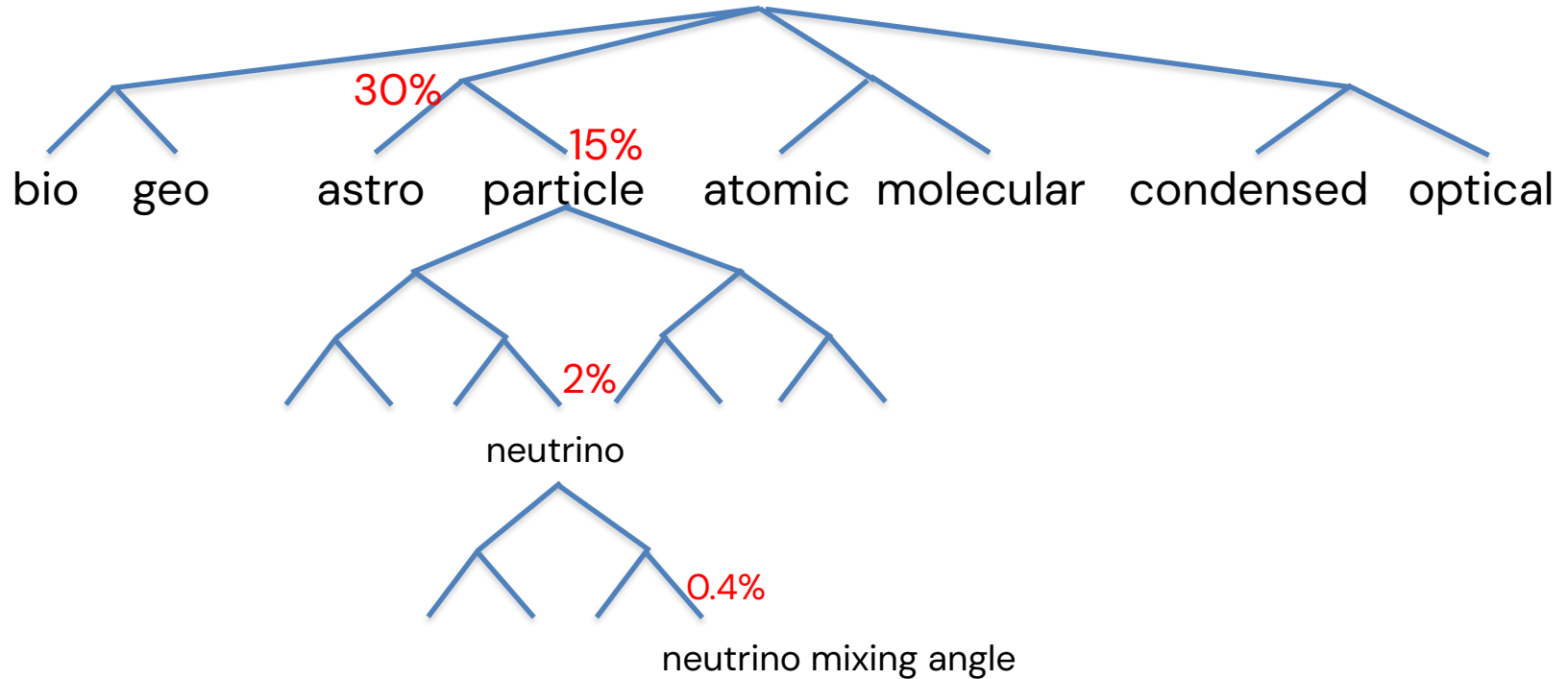


- Payout x in $[0,1]$ $\rightarrow p = E[x]$
- Market makers
 - Allow asynchronous trade
 - Allow edit-based interface
 - If subsidized, trades positive-sum
- Limit sabotage by keep positive stake
- Only include winners from test markets
- Manipulators *increase* price accuracy
- Bet conditional on rare random judging

When Million qubits?



What Field Physics Nobel?



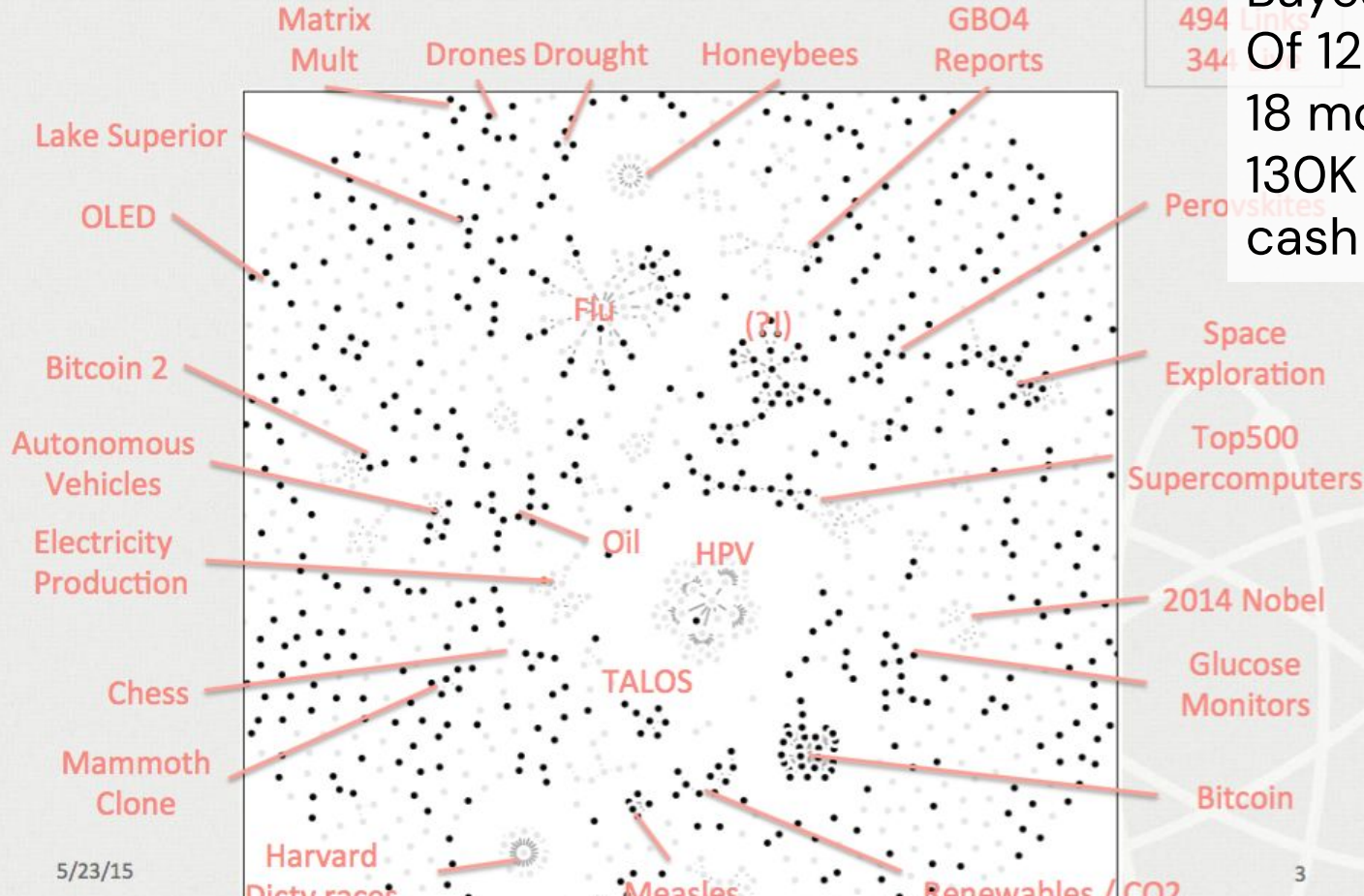
Combinatorial Prediction Markets

- We can make full joint distribution $P(A,B,C,D,...)$
- Edit-based interface: browse claims, edit or assume
- AMM subsidy for base claims *also* funds all combos!
- Bayes Net cuts combo explosion:
 - A independent of non-neighbors C given neighbors B
 - # Params $\sim (\#vars) * (values/var)^{(neighbors/var)}$
 - $P(A \mid \text{non-neighbor } B)$ edit could add/cut link or not

COMBINATORIAL

SCICAST.ORG

Bayesian Network
Of 1200 questions
18 months 2014-15
130K forecasts
cash incentives help



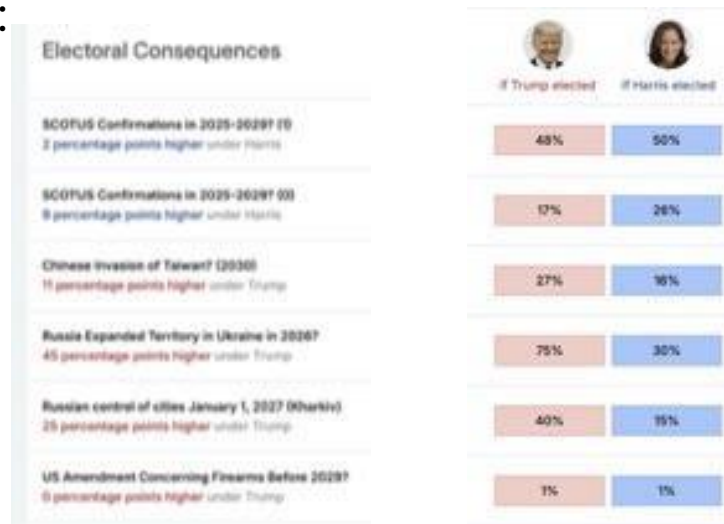
Election Conditionals

Candidate	Nominate?	Win?	Win if Nom.?
Clinton	78%	46%	58%
Warren	4.8%	2.9%	62%
Biden	4.8%	2.9%	62%
Omalley	3.8%	2.0%	51%
Rubio	22%	11%	50%
Paul	9.1%	3.8%	42%
Bush	31%	18%	59%
Walker	20%	7.7%	39%

Manifold:

What will happen if...	Harris wins	Trump wins
Will undocumented immigration at the southern border go down?	79% Trade	▲ 82% Trade
Will the president appoint another SCOTUS Justice before 2027?	48% Trade	▲ 78% Trade
Will marijuana be federally rescheduled from Schedule 1 drug?	▲ 71% Trade	42% Trade
Will there be a ceasefire in Ukraine before the 2026 midterms?	46% Trade	▲ 51% Trade
Will there be an executive order or legislation focused on AI before the 2026 midterms?	▲ 78% Trade	61% Trade
Will gas prices stay under \$4 a gallon before the midterms?	▲ 68% Trade	53% Trade
Will the inflation rate in 2025 be below 2.5%? (Current 3.2%)	▲ 82% Trade	69% Trade
Will the US enter a recession before 2027? (as measured by Sahm rule)	35% Trade	▲ 53% Trade
Gallup satisfaction poll greater than Obama	▲ 32% Trade	24% Trade
Will annual US CO2 emissions be below 4.5 billion tons in 2030?	▲ 70% Trade	62% Trade
Will Donald Trump serve time in 2025?	▲ 30% Trade	5% Trade

Metaculus:



BLOCK SIZE CHANGES

<https://blocksize Debate.com>

Metric	No change	Block size increase (82.4% likelihood)
Price	\$280.33	\$555.57
Network hash rate	3,255.17 PH/s	5,032.64 PH/s
Daily transaction volume	168,438.22 tx/day	193,773.08 tx/day
Number of nodes	5,222.57 nodes	1,265.37 nodes

REPLACE-BY-FEE PATCH

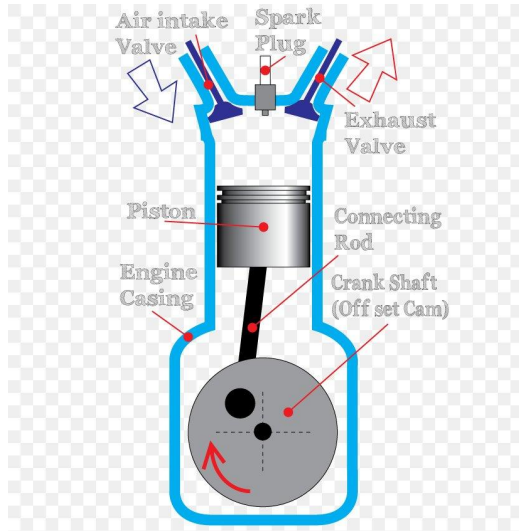
Metric	No change	Replace-by-fee patch committed (13.6% likelihood)
Price	\$533.00	\$342.54
Network hash rate	4,969.68 PH/s	3,132.09 PH/s
Daily transaction volume	192,603.80 tx/day	168,406.73 tx/day
Number of nodes	1,720.41 nodes	3,500.76 nodes

Futarchy trials



- Secretive India-Based Govt. Med. Org., ~6 pr.
- *themetadao.org* (since 18Nov2023)
 - internal (customer): 23(14) proposals, 6(3) reject
 - 2953 trades, \$2.7M vol.; market cap \$10K → \$70M
 - Now DAO grant approval focus
- New
 - *Buttery*, also project funding focus
 - *Quiver* → *Futarchy.fi*, *GNOSIS* governance, funding

Elegant Idea + Messy Details



Imagine Autistic Person in C-Suite



Deadlines Example



- Project manager
 - Wants to know if will make it
 - But also wants good excuse if fail
- Favorite excuse: obstacle from left field at last minute, will never happen again
- Prediction market track record conflicts!
- Code-boss² prefer *inaccurate* code-boss

Academia

Now:

- Credential *impressive* folks
 - Gives status via assoc. to: patrons, students, media.
- Consensus, intellectual progress are side effects

Proposals:

- Fund research via subsidize markets on big Qs
- Journals use replication estimates in review
- People eval: market est. of distant future eval
 - *First test:* historians rank folks in areas 100–200 yrs go



Application: Prevent Civ Collapse

- World births peaked '16, population to peak ~'50s.
 - ↓ pop. → ↓ innovation → ↓ liberality; Amish+ replace
- Culture causes: ↑: kid attn., school, urban, gender;
↓: grandp. help, marry young, religion,
- Deep cause: *cultural norm drift*
 - Analogy: Selection of/in species; of matters more
 - Analogy: firm cultures drift bad, most die, selection fixes
 - *Variety* ↓: 100K+ cultures ~1800, → nations → world
 - *Selection pressure* ↓: poverty, famine, epidemic, war
 - *Moral fashion* ↑: status to activists, moral crusades
- Fix?: *Commit* futarchy to, e.g., date we reach stars