Voting
Plan for today

● Framework to understand participation
● Voting rules
● Writing constitutions
Motivations for voting

What are key goals for voting that might explain why people use it?

- **Aggregating dispersed information to make the best decision (“wisdom of the crowds”)**
  - Participation useful when it adds useful signal to the collective decision
  - Everyone has same preference so “intensity” is not relevant
  - Expertise is valuable and should be weighted more

- **Aggregating preferences to find the most-preferred outcome**
  - Participation useful to obtain best measure of group preference
  - Intensity could matter and can be expressed in different ways
  - Expertise may be valuable but is only one consideration
The calculus of voting (Riker and Ordeshook 1968)

Probability of Voting =
(Probability of your vote changing the outcome * Value of outcome) - Cost of Voting + Psychological Rewards to Voting

Pivotality
Stakes
Costs to participating
Benefits to participating
Participation scales with pivotality/stakes
Costs of voting and participation

Can delegation reduce costs and increase participation?

Logic: by making voters’ task easier, delegation should encourage participation

But…

● Many token holders may not pay enough attention to know how/when/where to delegate, or whom to delegate to
● No easy way to reach token holders to inform them
● Delegation systems may be hard to use
● Delegation not appealing if you don’t know the delegates or the issues
Basic delegation may not move turnout: dydx experiment
Incentives to delegate seem to work, though
Non-Airdrop Addr - OP Token Delegated Over Time

Airdrop #2 Non-Airdrop Delegates Acquisition

Days Since Airdrop

# OP Delegated

# OP Delegated to
Incremental OP Dr
Paying directly for voting

Bueno de Mesquita and Hall (2022):

- Direct revelation mechanism to reward voting
- Each voter is asked to report their price for voting, \( c_i \)
- Sort voters from lowest \( c \) to highest
- To get \( n \) voters to vote, pay the lowest \( n \) voters \( c_{n+1} \)
- Can show that no one has incentive to lie in equilibrium

...but what are the big problems here? How might we mitigate them?
Voting rules

web3 enables lots of different voting rules…

- One token, one vote
- Delegation and liquid democracy
- Quadratic voting
- One badge, one vote
- Voting weight that scales with time locked
Quadratic voting

– You have a budget of tokens to spend on votes
– Some fixed set of votes to decide on
– You allocate tokens across votes
– Your voting weight is the square root of the number of tokens you spend on that vote

So, instead, each legislator was given 100 tokens. If a legislator cast one vote each for several issues, it would cost them one token each. However, a legislator could cast more than one vote for an issue, at the following cost in tokens:

<table>
<thead>
<tr>
<th>Number of votes cast for an Issue</th>
<th>Cost in Tokens</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>2</td>
<td>4</td>
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<tr>
<td>3</td>
<td>9</td>
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<td>81</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Source:
https://towardsdatascience.com/what-is-quadratic-voting-4f81805d5a06
Questions about quadratic voting

- Suppose a DAO implemented quadratic voting for a set of proposals. Can you think about ways for an adversary to game the vote? Can you think of ways to mitigate these attacks?
- What problem(s) is quadratic voting meant to solve? How does it try to solve it?
- Can you think of other ways to solve the same problem(s)?
One badge, one vote

The Citizens’ House relies on the concept of identity-based governance. This is distinct from the more common pattern of token-voting governance (as used in Optimism’s Token House).

To start, the initial set of Citizens in this stage is determined by

- (a) criteria set by the Optimism Foundation
- (b) a special election from the Token House.

Citizenship is conferred by a simple entry in the AttestationStation.
veTokens

- In some DAOs, you can lock up native tokens in protocol and receive back vote-escrow tokens or veTokens (e.g., veCRV) that are used for voting.

- The voting power of veTokens often grows with how long you lock up for:
  - “For example, a balance of 4000 CRV locked for one year provides the same amount of veCRV as 2000 CRV locked for two years, or 1000 CRV locked for four years.”

- Can we think of pros/cons to this idea?
Voting rules exercise

In groups of 2-6 or so...

- Imagine Stanford is a DAO
- We are voting on a proposal from the cs department to spend $1b to train a new open-source LLM
- Who should have voting power, how much voting power should they have, and what voting rule do you think the DAO should use?
Writing your constitution
Four questions about your constitution

1. **Scope.** What decisions are made through governance?
2. **Distribution.** Who gets to decide?
3. **Rules.** How are decisions made?
4. **Timeline.** When are you going to give over these powers?
Scope: how much do you want governance to do?

Less governance
- Keeps project nimble
- Often lowers risk of bad decisions
- Reduces scope for conflict
- May reduce buy-in, trust
- May be less compelling to users
- May hide governance behind the scenes

More governance
- May increase buy-in, trust
- May attract users
- Governance explicit, transparent
- Slows down decisions
- Often increases risk of bad decisions
- Increases scope of conflict
Distribution: who gets to decide?

**Distributing your tokens**

Broader token distribution can increase sense of fairness, community buy-in. But could lead to uninformed voting, also.

Tokens earned through behavior rather than bought can be useful for empowering good community members.

**Considering going beyond token voting**

Building additional governing bodies, empowering “citizens” could be good strategies for broader stakeholder inclusion.

Of course, including stakeholders who don’t have strong incentives to care or who have hostile intentions is bad.
Rules: how are decisions made?

**Spelling out the proposal process**

Can anyone make a proposal? Depending on your project, there may be critical business/legal issues that cannot be proposed.

**Designing voting rules**

Delegation and “liquid democracy” could be especially valuable for getting around low participation rates.

Directly rewarding participation may also be a good idea.

More complicated voting rules (e.g., “quadratic voting”) might be useful in certain instances but are rarely high impact.
Timeline: when are you going to give over these powers?

Going too big, too fast

It is much harder to pull back governance powers once granted than to delay granting them in the first place.

Waiting too long can also backfire, though

For some projects, governance is the sell from the very beginning.