Liquid Democracy: Promise and Challenges

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Liquid Democracy Origins

Delegative Democracy

Bryan Ford

May 15, 2002

Abstract

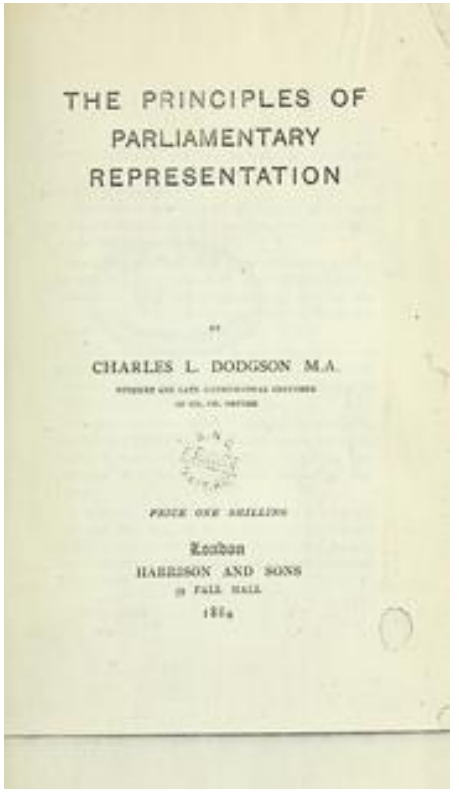
Delegative democracy is a new paradigm for democratic organization which emphasizes individually chosen vote transfers ("delegation") over mass election. Delegative democracy combines the best elements of direct and representative democracy by replacing artificially imposed representation structures with an adaptive structure founded on real personal and group trust relationships. Delegative democracy empowers individuals and encourages widespread direct participation in a democratic organization, without unduly burdening or disenfranchising those members who, for lack of time, interest, or knowledge, would prefer to take a more passive role.

Liquid Democracy Origins

- Dennis Lomax, “Beyond Politics” (2003)
- Joi Ito, “Emergent Democracy” (2003)
- Sayke, “Liquid Democracy” (2003)
- James Green-Armytage, “Direct Democracy by Delegable Proxy” (2005)
- Mark Rosst, “Structural Deep Democracy” (2005)
- Mikael Nordfors, “Democracy 2.1” (2006)
- ...

Pre-Internet precedents

Lewis Carroll, “Principles of Parliamentary Representation” (1884)


THE PRINCIPLES OF
PARLIAMENTARY
REPRESENTATION

BY

CHARLES L. DODGSON M.A.

PRICE ONE SHILLING

London
HARRISON AND SONS
59 PALL MALL
1884

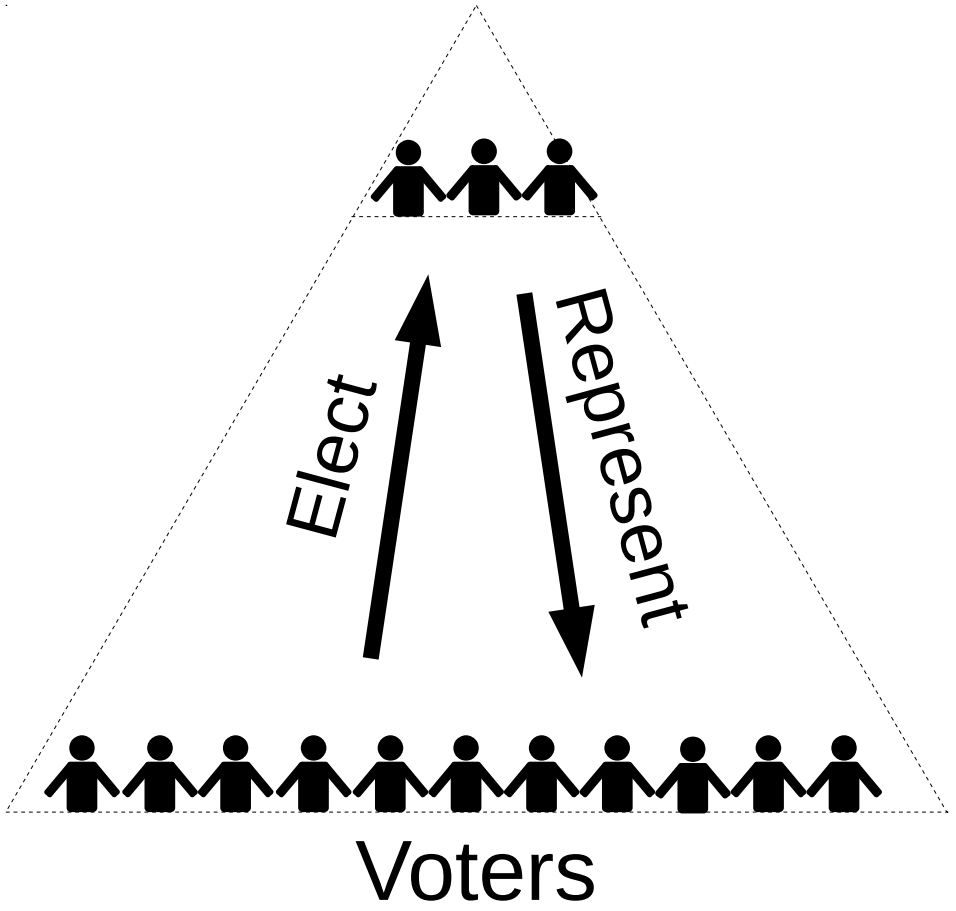
PUBLIC
CHOICE

James C. Miller, “Direct and proxy voting in the legislative process” (1969)

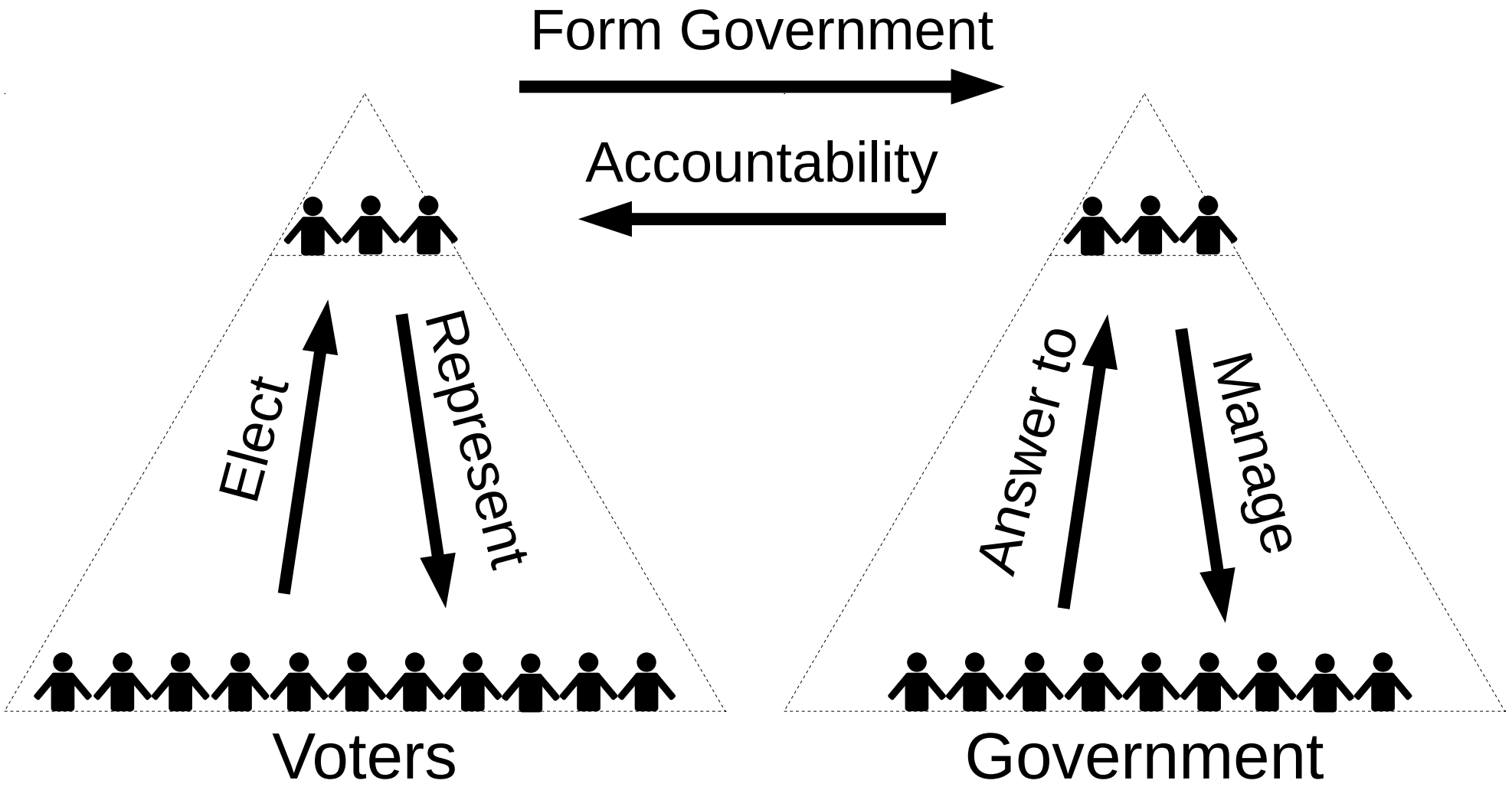
What is Liquid Democracy?

In principle, a combination of the “best parts” of representative democracy and direct democracy

Representative Democracy



Representative Democracy



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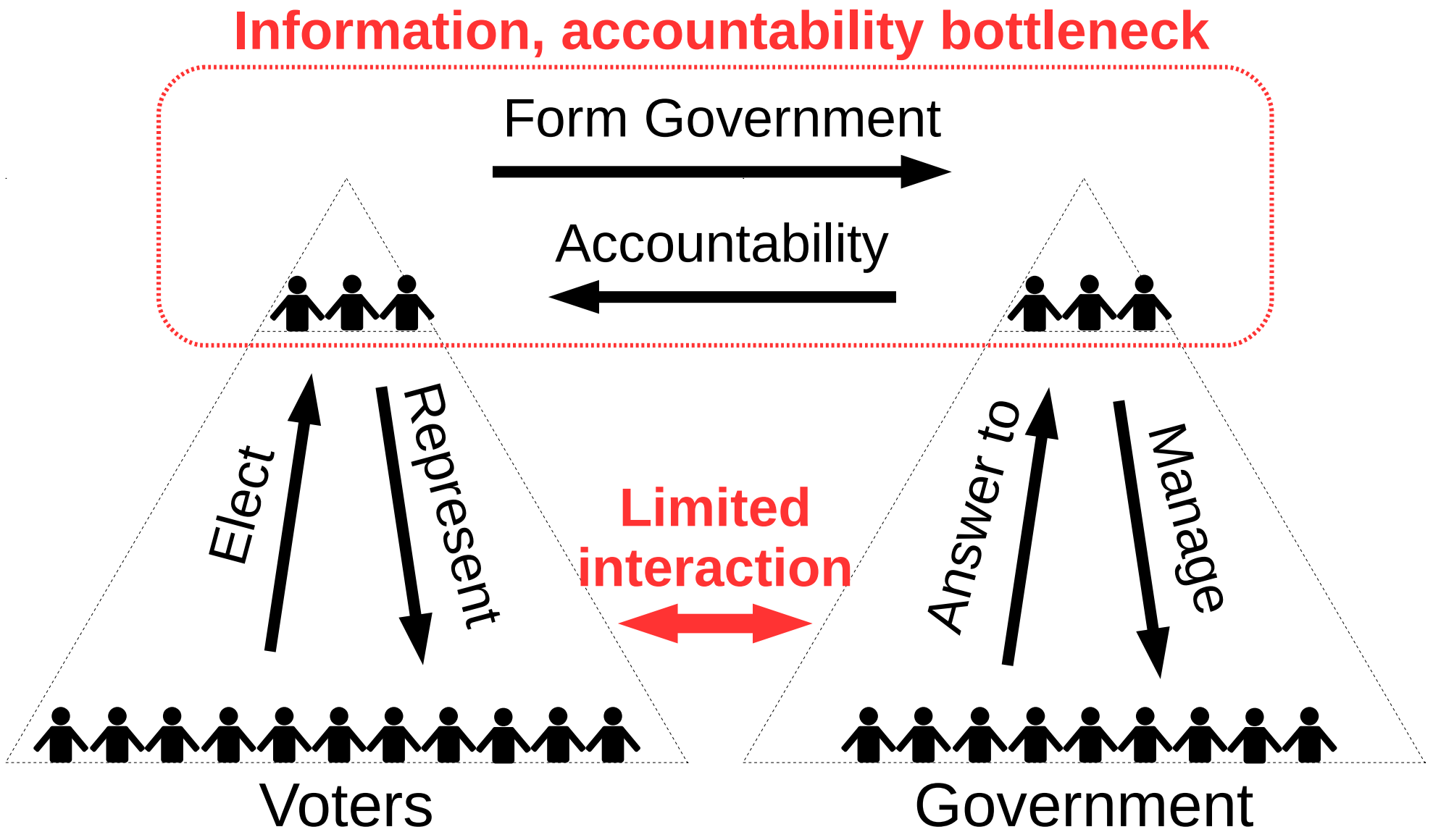
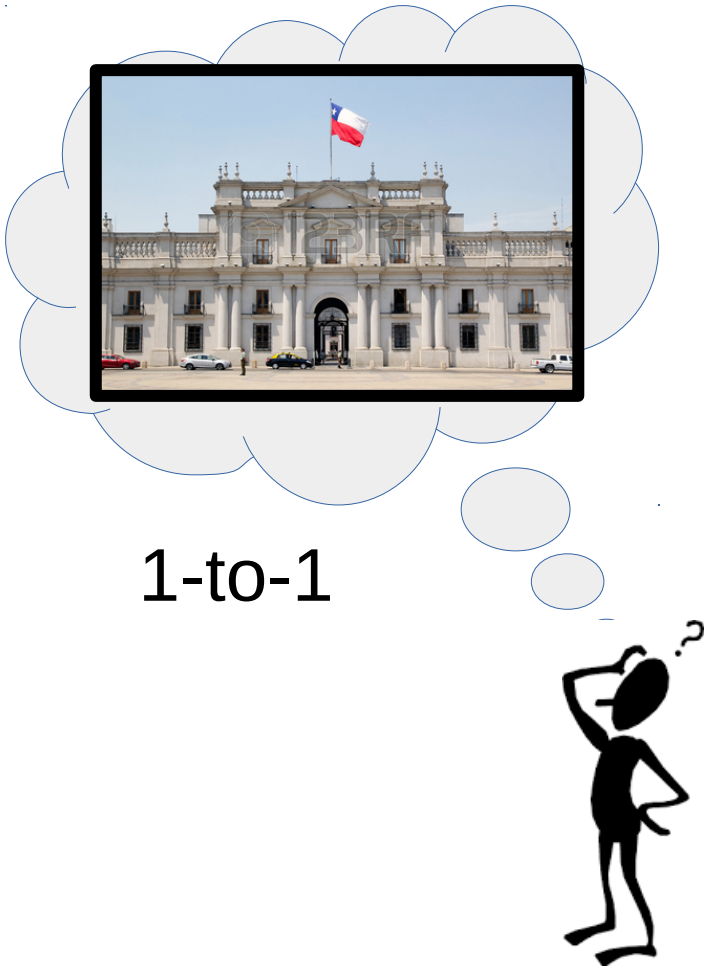


Representation = Compression of Voter Preference Information

Suppose a well-informed voter has a clear picture of what they want from government…



1-to-1

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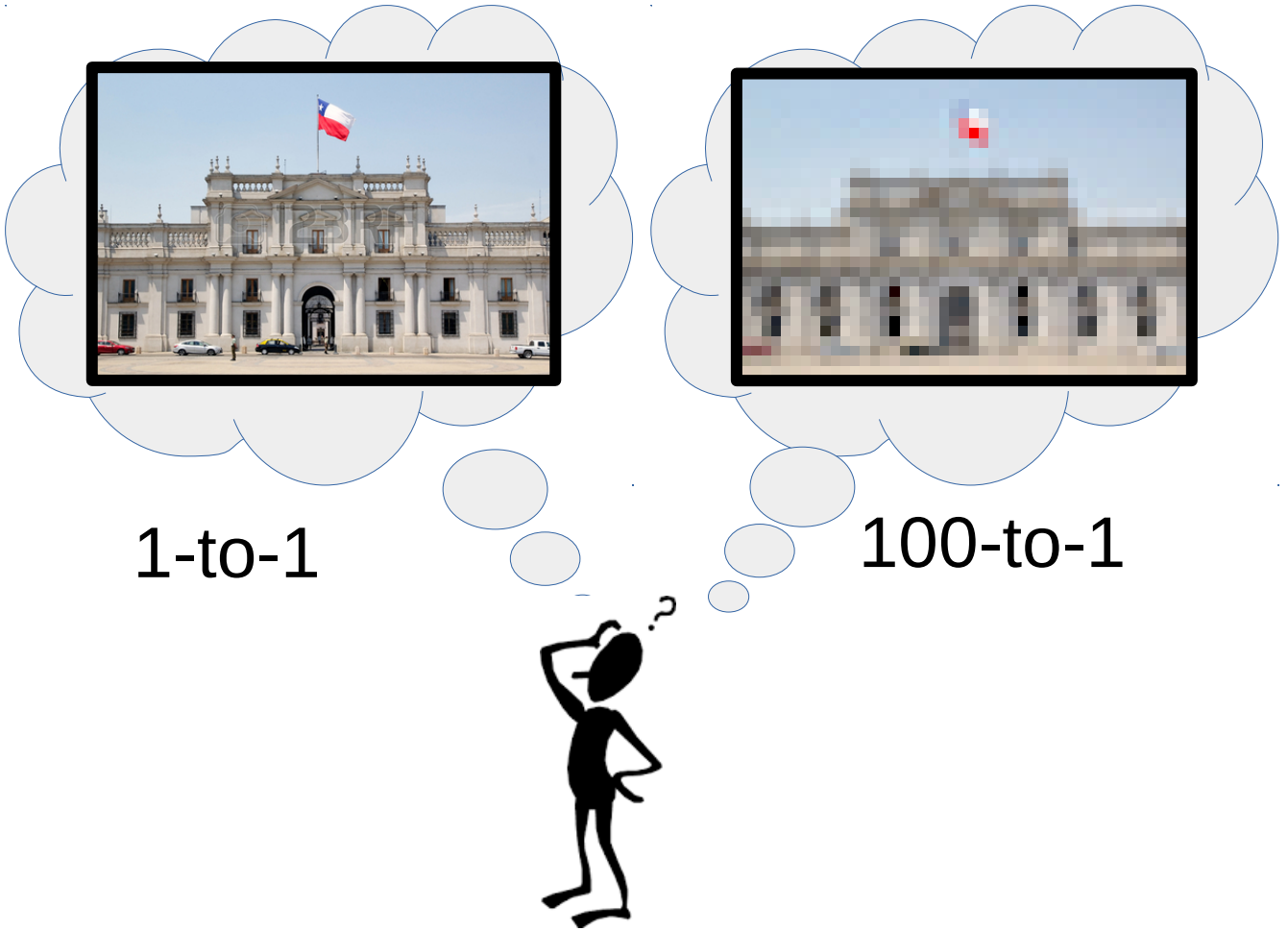

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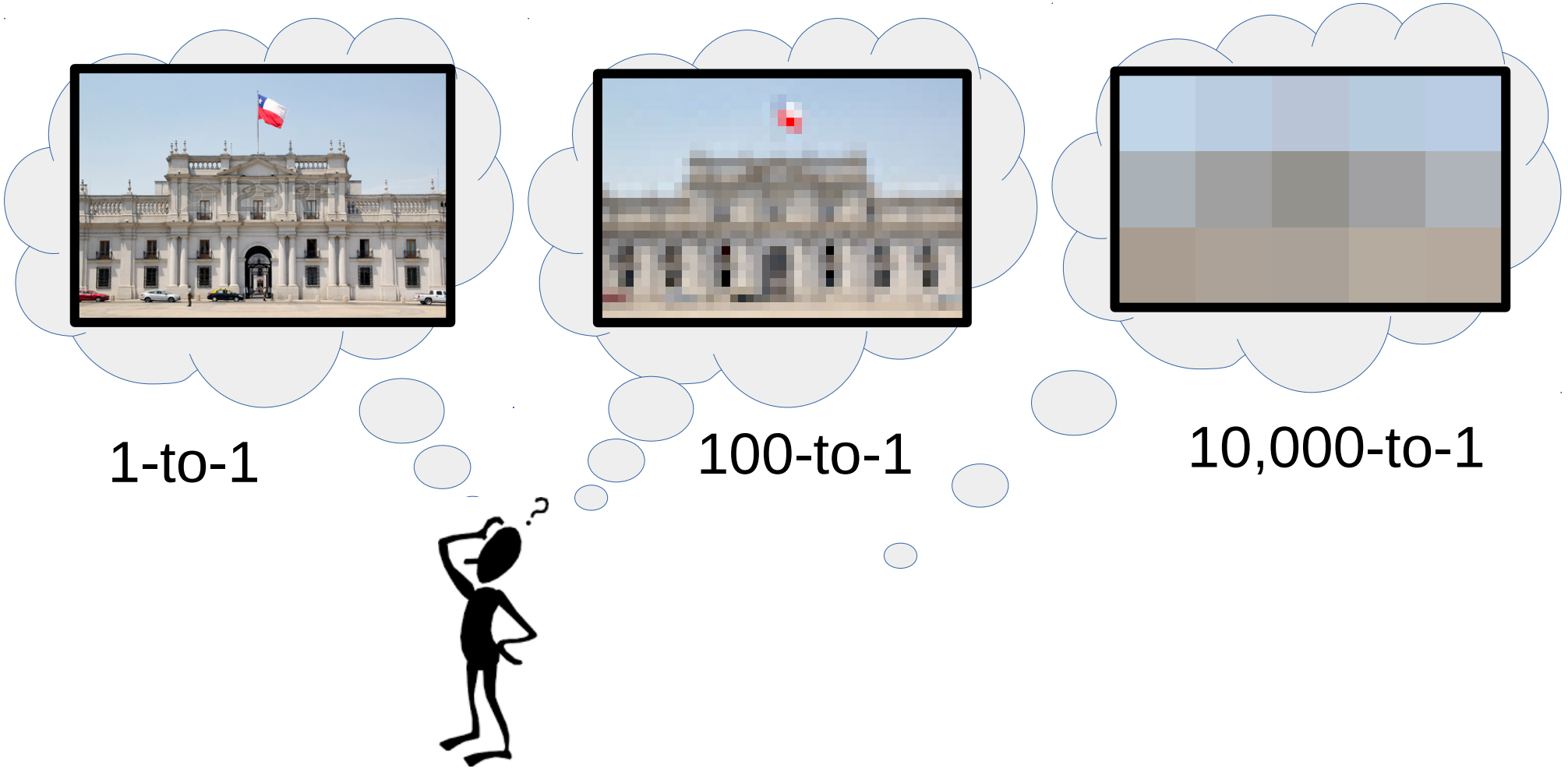

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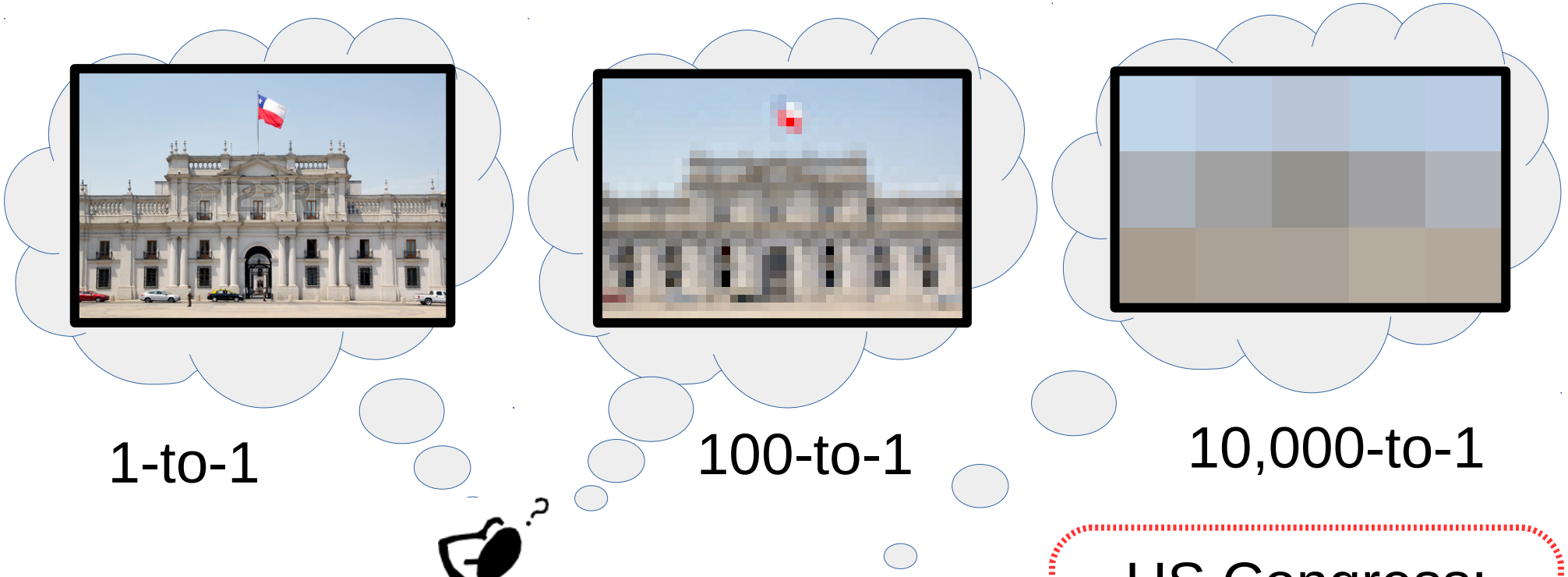

1-to-1

100-to-1

10,000-to-1

US Congress:
700,000 voters to
1 representative

The Ideal of Direct Democracy

Get the people involved in the regular, everyday process of governmental decision-making.

Every voter

- learns about,
- decides, and
- votes on

every important community issue

High-Tech Direct Democracy?

What if democracy could fully leverage today's (and tomorrow's) best available technologies?

- Involve voters *continuously* in governance
- Allow voters to discuss issues
- Express support for positions
- Initiate new proposals
- …

Beautiful dream

Even if we could make the technology work, and secure enough...

Problems with Direct Democracy

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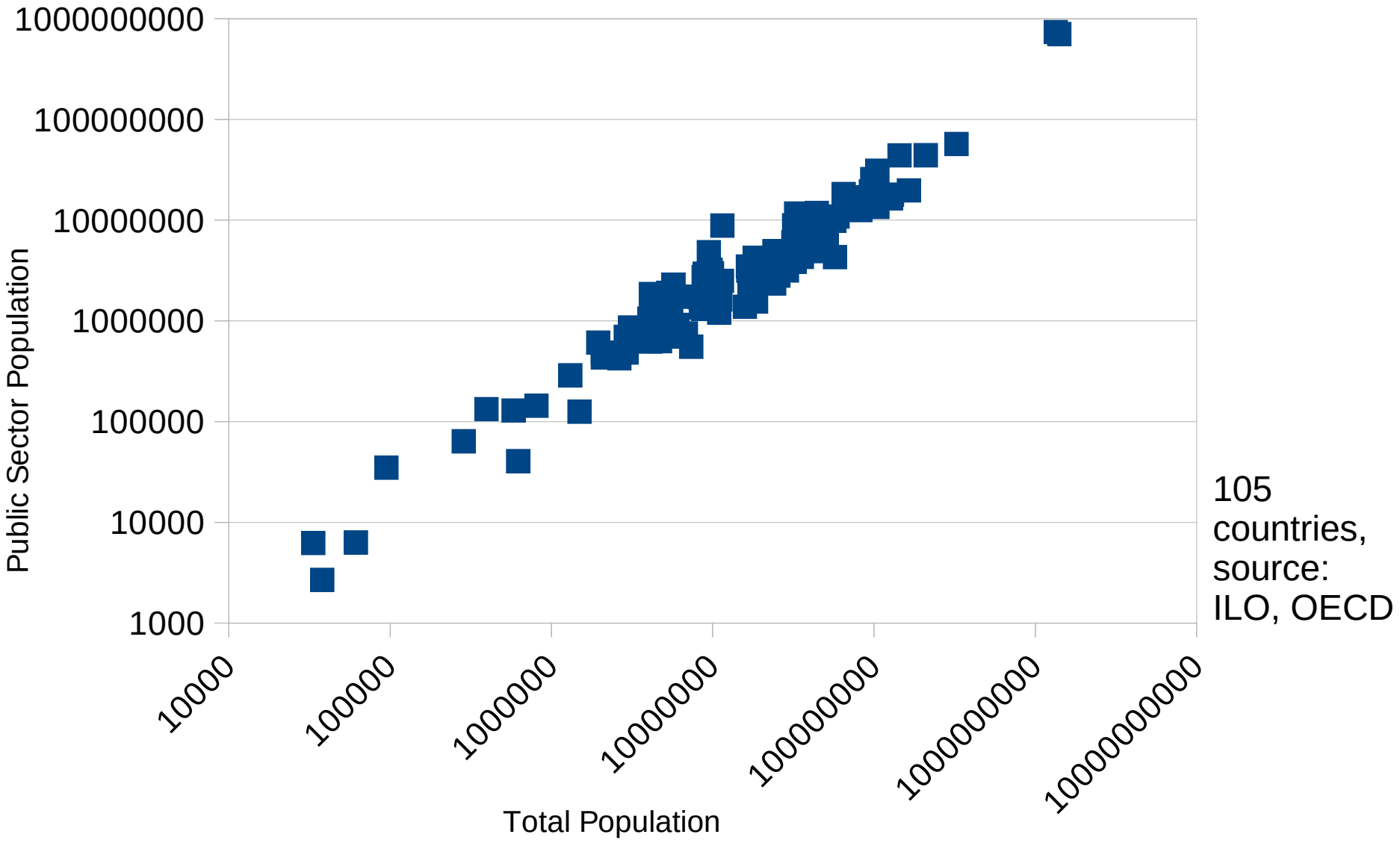
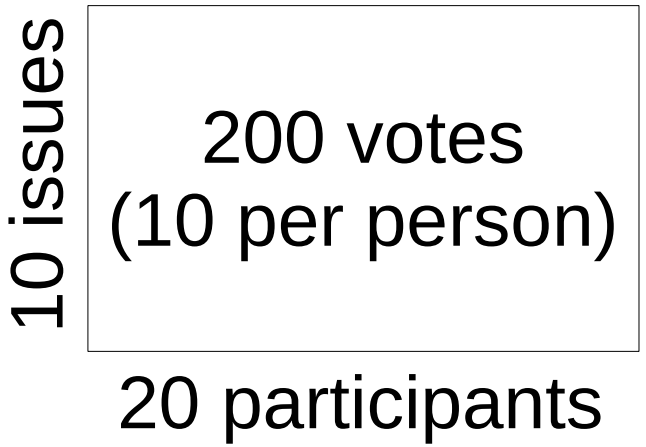
- Only 24 hours in each day
  - Even in small groups, direct democracy can exclude anyone with something better to do

Pure direct democracy just **doesn't scale**

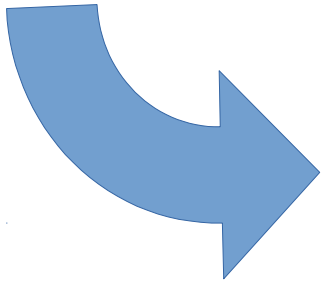
More people means more governance work

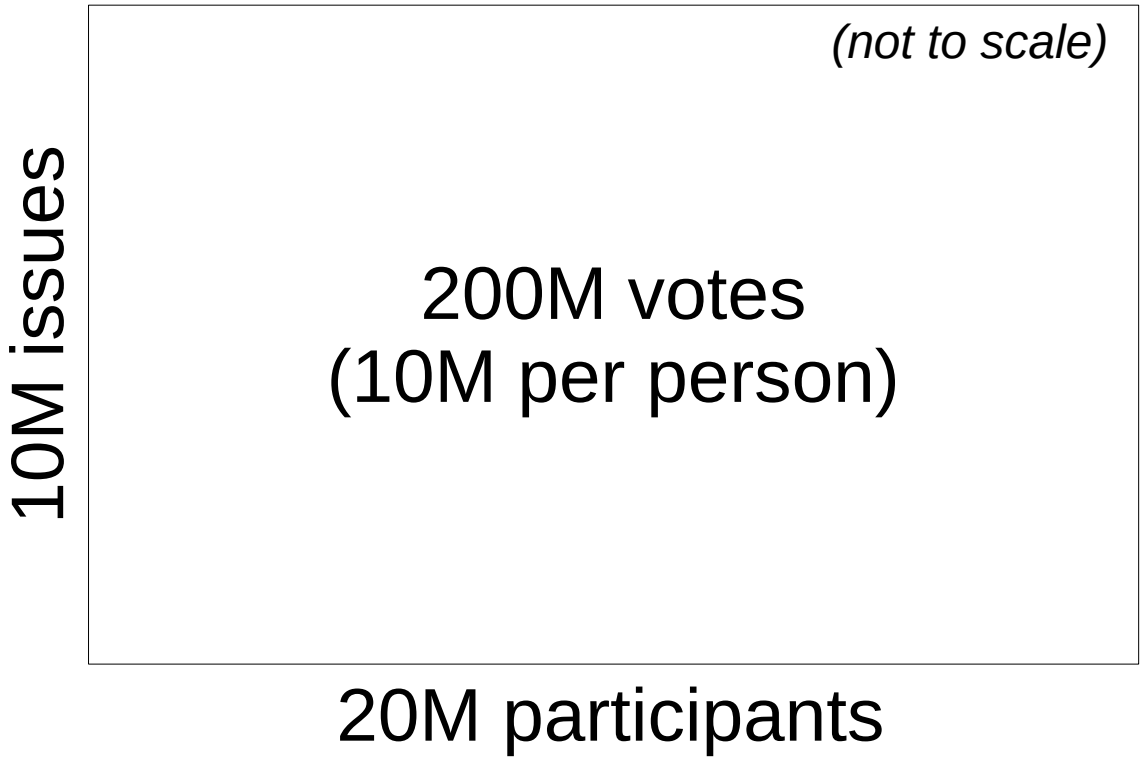


The scalability challenge



Pure direct democracy may work for a small group...

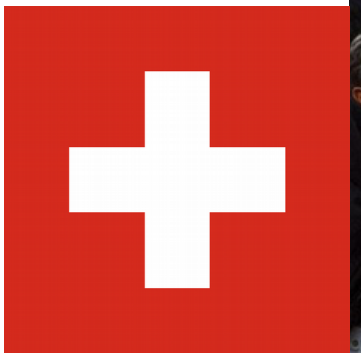




…but will never work for a large country

Direct democracy *can* work…

In Switzerland
for example…



But:

- Switzerland is a small country (~8.5M)
- Most voting done in smaller cantons, towns
- Most governance still handled by representatives; use initiatives & referenda only on select issues

Saving Time in Direct Democracy

In any direct democracy (even a small one),
you probably can't become expert on *every* issue.

Instead, we must take shortcuts.

- Ask a friend who knows more.
- Get opinion of a trusted expert.

If friend's or expert's opinion makes sense to us,
we may decide to vote according to their advice.

What is Liquid Democracy?

It's just **technology-enabled following of advice you trust**.

If there are many healthcare issues to vote on,
and I'm not an expert but trust a friend who is,
I can **delegate** my vote on health issues to her.

- My vote automatically "follows" friend's advice
- But *only* as long as I want.
  I can cancel anytime and
  vote for myself again.

Different Topics, Different Experts

Representative democracy falsely presumes we can find representatives who are **competent in everything**.

- We get representatives specializing *only in politics*, and not in any topics on which they're setting policy.

Liquid democracy allows voters to delegate to *different representatives* in *different areas*.

- Delegate health issues to my doctor friend
- Delegate technology issues to geek friend

Bring the benefits of **specialization** to democracy

Freedom of Representative Choice

Representative democracy typically gives voters only a few choices

- Known insiders with party support
- High barriers to official candidacy

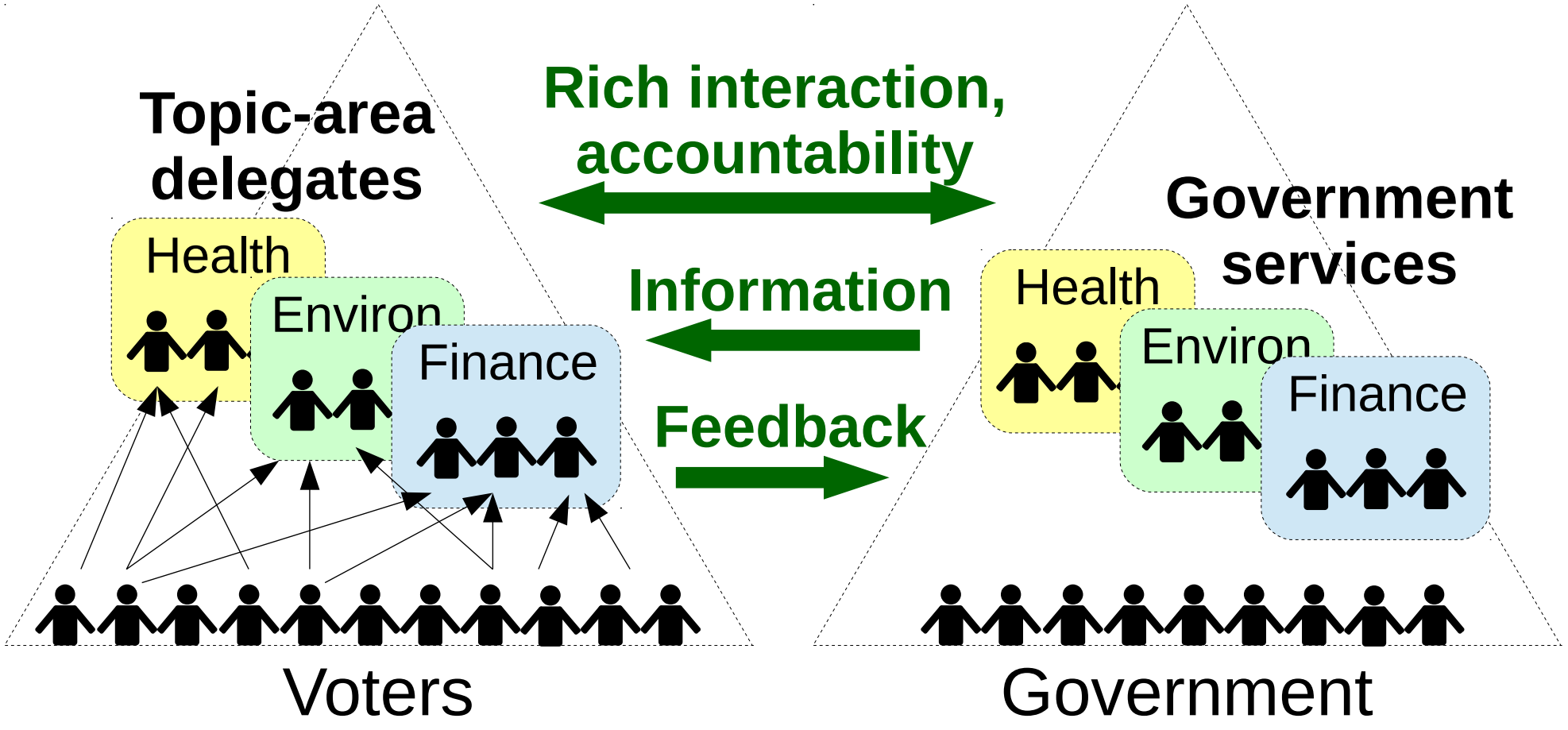
Liquid democracy lets *anyone* be a representative

- If you give good advice & someone wants to take it, why shouldn’t they?

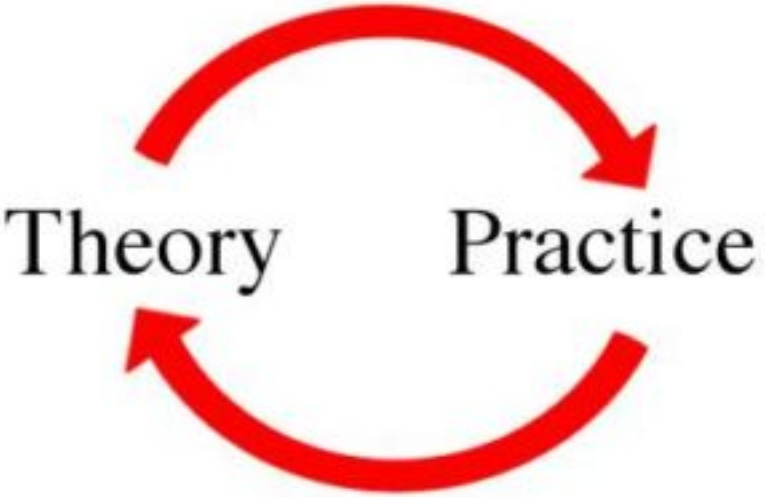
Your choice is limited only by the people you know

Deep and broad voter participation

Liquid democracy removes the information and accountability bottleneck at the top

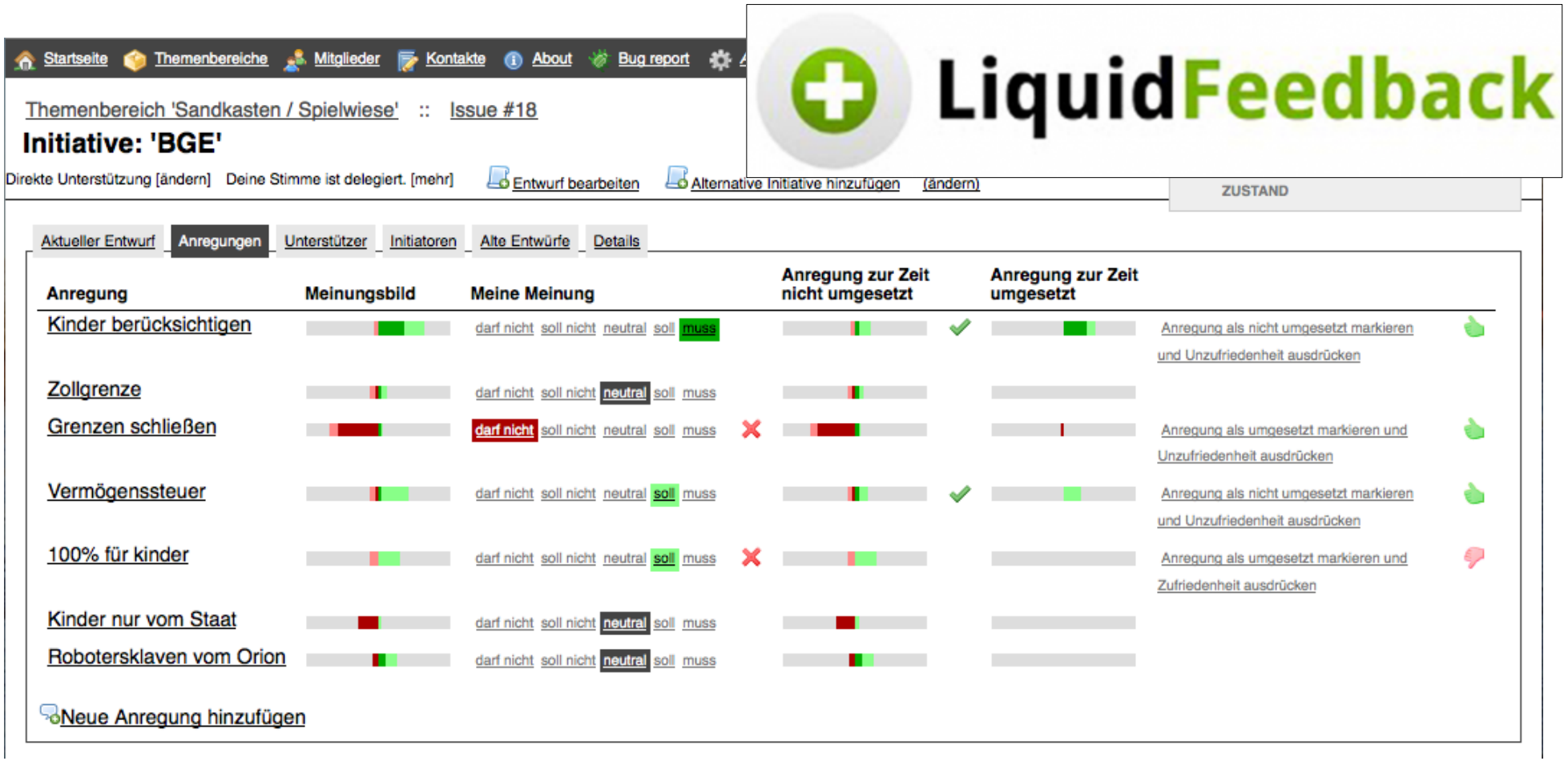


From Theory to Practice



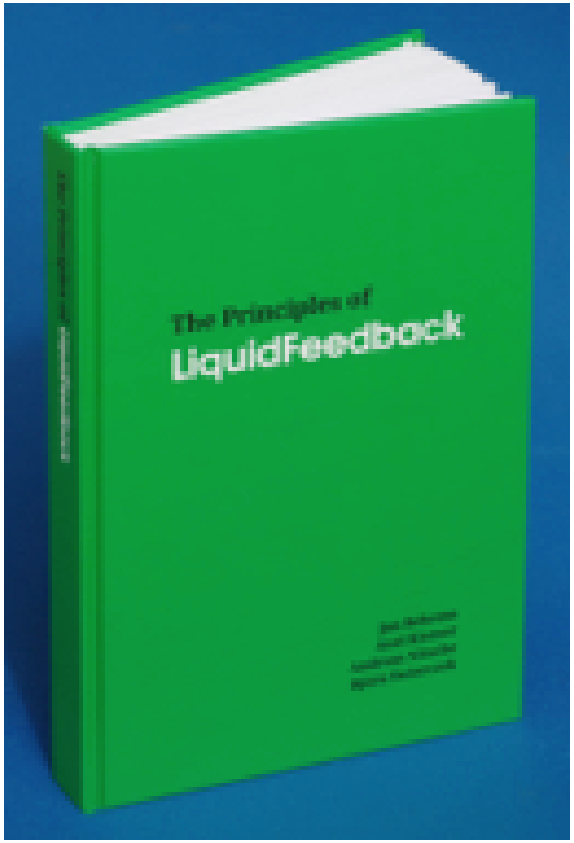
LiquidFeedback

Platform developed and used by the German Pirate Party for several years starting in 2006



LiquidFeedback

German Pirate Party experiment produced important lessons and voter-behavior datasets



DemocracyOS

Developed Democracia en Red in Buenos Aires, subject of TED talk by Pia Mancini

DemocracyOS

Great, so what could go wrong?

A lot, unfortunately – if we’re not careful.

Great, so what could go wrong?

A few (of the many) challenges to address:

- Unintended concentration of delegated votes
- Voter privacy versus delegate accountability
- Building secure decentralized implementations

Concentration of delegated votes

If many see one person as the top expert on topic, and all delegate their votes to same person

- Winner-take-all effect → accidental dictators
- Example: “superdelegates” in LiquidFeedback

Mitigation: enable and encourage voters to **split** their voting power among multiple delegates

- Avoid winner-take-all, give not-quite-top experts their fair share of delegated voting power too

Voting privacy versus accountability

We usually want to enforce **voting privacy**

- So voters can express preferences freely
- So voters can’t prove how they voted to anyone trying to coerce them

But if you delegate your vote to a friend or expert, don’t you *need to know* how they cast your vote to keep them accountable?

Voting privacy versus accountability

Mitigation: keep delegated votes private,
but enable private *comparison of voting record*.

- I can see that my [potential] delegate has agreed with me about 75% of the time
- I can’t see how they cast any particular vote

Current liquid democracy systems don’t do this,
but the needed underlying technologies exist.

Implementation security challenges

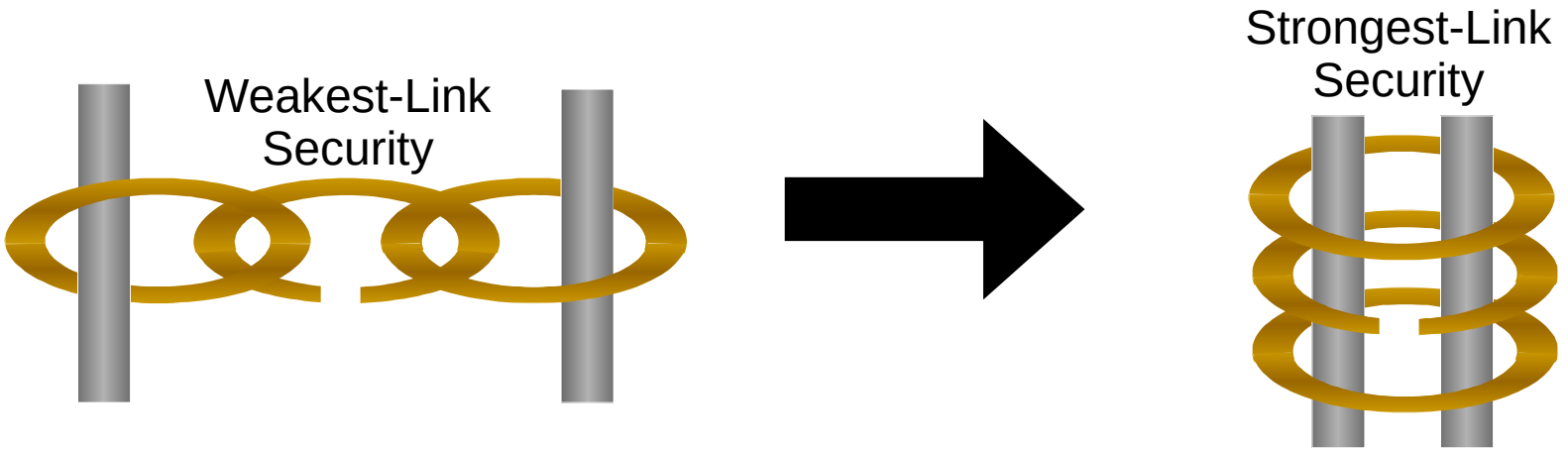
Current Liquid Democracy prototypes have **single points of failure or compromise**.

- You completely trust whoever runs the server
- Unscrupulous admin or hacker can do anything

Should currently be used **only** for small-scale experiments in “friendly” security environments!

We need secure decentralized tools

From “weakest-link” to “strongest-link” security



Mission of my lab at EPFL (w/ many collaborators):

Create **open-source decentralized platform** with the scalability, security, and privacy needed for trust-critical uses such as Liquid Democracy

Conclusion

Liquid Democracy gives voters *individual choice*

- of whether to participate a lot or just a little
- of which topics to follow and vote on directly
- of whose voting advice to trust

We *can* make direct democracy scale!

- But many challenges to solve.

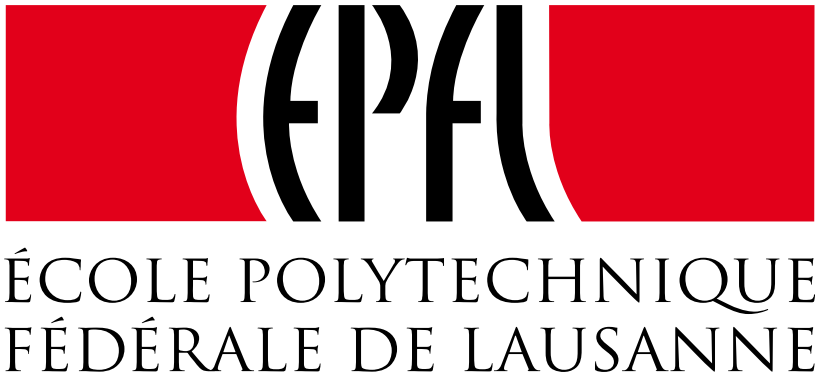
How we can make it happen

Safely deploying liquid democracy will require:

- **Communities** to organize and participate in *small-scale, non-critical experiments* first
- **Researchers** to develop the theory, and to study and learn from experiments
- **Technologists** to build secure decentralized platforms for liquid democracy
- **Governments** to provide deployment support and set standards for security, privacy

Thank you!

Decentralized/Distributed Systems (DEDIS)



dedis.epfl.ch
github.com/dedis