Decision-making and governance

CS 278 | Stanford University | Michael Bernstein
As Gillespie argues, moderation is the commodity of the platform: it sets apart what is allowed on the platform, and has downstream influences on descriptive norms.

The three common approaches to moderation today are paid labor, community labor, and algorithmic. Each brings tradeoffs.

Moderation classification rules are fraught and challenging — they reify what many of us carry around as unreflective understandings.
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6 MONTHS LATER...
Today: how do we govern and decide? And can we go beyond being there?
Today: how do we govern and decide? And can we go beyond being there?

Outline:
- Judgment between options
- Deliberation
- Democracy

Fei-Fei Li

Dorsa Sadigh

Michael Bernstein
Judgment
Idea 1
Idea 2
Idea 3
Idea 4
Idea 5

How do we decide which one is best?
“Vote on your top two ideas”

Strengths: simple user model, useful for selecting a single best option

Weaknesses: known pathological cases (instant runoff voting improves), not great for producing a ranking
Liquid democracy

I can vote directly, or delegate my vote to a person or institution who I think knows more about the issue.

They can then either vote or delegate their own votes.
Liquid democracy

Benefits: compromise between direct and representative democracy; made feasible by the web.

Weaknesses: not guaranteed to be better at decision-making than direct democracy [Kahng, Mackenzie, and Procaccia 2018]
Likert Scale Rating

Idea 1 ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ ☹️ “Rate each idea”

Strengths: gets more information per idea, allows ranking

Weaknesses: people tend to use the scale differently
Likert Scale Rating

Idea 1 😠 😐 😊 “Rate each idea”

Idea 2 😠 😐 😊 Strengths: gets more information per idea, allows ranking

Idea 3 😠 😐 😊 Weaknesses: people tend to use the scale differently (some are nice)

Idea 4 😠 😐 😊

Idea 5 😠 😐 😊
Likert Scale Rating

Idea 1 ☹☹☹☹☹☹ “Rate each idea”

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Idea 3 ☹☹☹☹☹☹ Weaknesses: people tend to use the scale differently (some are nice, some are mean)

Idea 4 ☹☹☹☹☹☹

Idea 5 ☹☹☹☹☹☹
Likert Scale Rating

“Rate each idea”

Strengths: gets more information per idea, allows ranking

Weaknesses: people tend to use the scale differently (some are nice, some are mean, many are extreme)
Likert Scale Rating

Idea 1 😠 😐 😊 “Rate each idea”

Idea 2 😠 😐 😊 Strengths: gets more information per idea, allows ranking

Idea 3 😠 😐 😊 Weaknesses: people tend to use the scale differently (some are nice, some are mean, many are extreme), we have limited resolution into the differences between the 5s

Idea 4 😠 😐 😊

Idea 5 😠 😐 😊
As a result, not a ton of signal to use to tell these restaurants apart on Yelp.
Reputation inflation

[Horton and Golden 2015]

There is social pressure to give high ratings, and few costs.
Reputation inflation
[Horton and Golden 2015]

Most of the pressure is on giving five-star reviews.
Comparison ranking

Which of these two ideas do you prefer?

Idea 1  Idea 2
Comparison ranking

Which of these two ideas do you prefer?

Idea 4  Idea 3
Comparison ranking

Which of these two ideas do you prefer?

Idea 1  Idea 3
Comparison ranking

Which of these **hard** difficulty questions is a better midterm question?

*NOTE: Some submissions have links. Please follow them and give each question the time and respect you would want given to your own.*

Some messaging apps show you when the other person is typing. What is the name of this design pattern? What are the two requirements needed to make it successful?

Briefly explain the concept of honest signals. Provide a design example of a social computing system that maintains and deepens strong ties through fostering honest signals from its users. In your reply, outline the type of user behaviours that would take place within the system.

**The left one**

**The right one**
Comparison ranking

But how do we turn a bunch of comparisons into a score or ranking per item?

Intuition:

If I beat something that’s known to be low ranked, I must not be terrible.

If I beat something that’s known to be high ranked, I must be really good.

But how do I know what’s low ranked and what’s high ranked?
TrueSkill and Elo

Elo is the system that was developed to rank chess players based on their win-loss records against each other.

Imagine that each player’s performance across a number of games is normally distributed. Sometimes they play amazingly, sometimes less so. Our goal is to estimate the mean of each player’s distribution. Each game is a draw from the players’ distributions.
TrueSkill and Elo

Intuitively, in Elo, we have some belief in the skill of each player before they play each other, and we update that belief based on the result of the game.

If white beats yellow, white’s skill score is updated by a multiplier $\alpha$ of $\alpha(25-10)=\alpha15$.

$\alpha$ is tuned on how quickly the score should adapt based on recent games.
TrueSkill and Elo

In TrueSkill, the same general idea holds, except the entire algorithm is done by performing Bayesian inference on a generative model.

\[ p(\text{skill} \mid \text{results}) = \frac{p(\text{results} \mid \text{skills}) \cdot p(\text{skills})}{p(\text{results})} \]

Bayes’ rule

Skill = 10  
Skill = 25
TrueSkill and Elo

Strengths:

- Produces scores and a ranking, not just the top winner
- You get more carefully calibrated scores, so you can differentiate between top performers (avoids the Yelp problem)

Weaknesses:

- Requires many comparisons per idea to accurately estimate
Deliberation
Peer juries

When there is bad behavior, must we rely on mods? Can we empower a jury of your peers?

Two communities that use this approach:

Sina Weibo: estimated 20,000–60,000 judges recruited from the user base who review cases of verbal abuse and personal attacks. About 2,000 expert judges review more complex cases such as rumor propagation.

League of Legends: judges at The Tribunal (now defunct) reviewed cases of AFK flaming, harassment, racial slurs, and more
Peer juries: complications

[Kou et al. 2017]

Users trust the human-driven system more than the algorithmic systems that might replace it, but still have limited trust in each other:

“"But why should I be judged by other ordinary Weibo users?"

"As far as I know they just let random players make random decisions over whether a player can continue to play [League of Legends] or not."

Why is there less trust in these systems than in local, offline juries? What could be done about it? [1 min]
Reddit’s /r/changemyview and Change A View are online discussions allowing people to stake a (potentially unpopular) position and ask for feedback on the position from others online.

Would this work? What helps it work? [1 min]
Structured debate

Deliberation: add metadata so that similar arguments get merged and replies get connected to the original argument
Should we License marijuana production, distribution, and possession?

**Top Cons**
- Dispensary growers and employees are still at risk from the Federal Government.
  - 10/7/2012, 0 comments
- Any revenue raised can be seized by the Federal Government.
  - 10/7/2012, 0 comments
- Pointless to legalize, the fed's won't let you have it (read more)
  - 10/5/2012, 2 comments

**Top Pros**
- Legalizing marijuana and taxing sales would generate more revenue for the state.
  - 9/6/2012, 1 comment
- "Creating" criminals for something that's no different than alcohol use, which is legal, ruins lives unnecessarily and burdens society.
  - 10/5/2012, 2 comments
Are these designs enough to craft decisions? If not, what would it take? [2min]

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**GMOs Are Good**

Last updated: March 7, 2019

In its broadest sense, a genetically modified organism (GMO) refers to an organism whose genetic material has been altered in a way that does not occur naturally. Genes change naturally, either by mating or by natural recombination. But in this case, genetic fragments are scientifically inserted into the DNA of another organism to transform its collective genetic makeup, a process known as gene splicing. In plant and animal biotechnology, there are three fundamental areas that genetic modification is concerned with; the quality of

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**Yes because...**

**Production of Edible Medicine and Vaccines**

This is perhaps the most innovative application of GMO. This process involves the modification of animal and plant genes in order to yield edible output with preventive molecules, for example milk, eggs and fruit. Edible vaccines, produced in milk or fruit could ease manufacturing and distribution costs by making it globally accessible to people. Vaccination through injection has many disadvantages, including the need for medically trained staff, high costs, not to mention constant cooling during transportation and storage. Use of needles also increases the risk of infections. In these cases, an edible vaccine comes in handy. In recent years, there have been examples of transgenic plants developed by researchers to help developing countries. Transgenic potatoes which contain cholera toxins have been developed to immunize against diseases. In 2004, the Pharma-Planta Programme was granted 12 million euros to develop genetically modified plants to help grow vaccines against tuberculosis and rabies.

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**No because...**

It is important to note that development of edible vaccines is still at very early stages. So far, the benefits outlined are only human-centric. It has not been articulated clearly how implementation of this...
No. Back to this situation...

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stalling
friction

Losing momentum, no viable path
Outright flaming or violent disagreement

scylla and charibdis...

[Salehi et al. 2015]
Work required to overcome stalling and friction [Salehi et al. 2015]

Deliberative publics require special action to preserve their momentum. Example behaviors include:

- debates with deadlines
- act and undo

This labor could not have been written into software: it consists of human scripts undertaken by moderators or trusted others.
Michael’s take

Adding metadata to discussion is helpful usability-wise, but is no panacea.

In contrast, structuring the rules and roles by which we’re able to engage with each other is much more likely to produce productive deliberation.

Most online communication tools such as email fail at deliberation because they don’t structure those rules and roles. We just continue to ricochet from stalling to friction and back.
Democracy

How can internet technologies help us make our governments more accountable and effective?
- CrowdLaw [Beth Noveck]
Collaborative law authoring

WikiLegis: allow the public to comment on and edit new bills

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| Art. 1º | Esta Lei Complementar altera a Lei Complementar nº 140, de 8 de dezembro de 2011, que "fixa normas, nos termos dos incisos III, VI e VII do caput e do parágrafo único do art. 23 da Constituição Federal, para a cooperação entre a União, os Estados, o Distrito Federal e os Municípios nas ações administrativas decorrentes do exercício da competência comum relativas à proteção das paisagens naturais notáveis, à proteção do meio ambiente, ao combate à poluição em qualquer de suas formas e à preservação das florestas, da fauna e da flora; e altera a Lei nº 6.938, de 31 de agosto de 1981", para aperfeiçoar as regras sobre as atribuições para o licenciamento ambiental. |

| Art. 2º | O art. 7º da Lei Complementar nº 140, de 2011, passa a vigorar com as seguintes alterações e acréscimos: |

| "Art. 7º..." |

WikiLegis: allow the public to comment on and edit new bills
Pitching problems

People pair with legislators to raise issues and draft plans.
Constitution writing

Iceland had the first crowdsourced constitution-writing process

Step One: gather ~1000 citizens into a minipublic to discuss the criteria they have for the new constitution

Step Two: 25 people sampled to draft the new constitution from around the country based on those goals

Step Three: open up the draft to the public for comments and feedback

Bill approved by two-thirds of voters, but then stalled in parliament 😞
Michael’s take

Open participation tools do feel resonant with the purported values of democracy and public participation in governance. However, they are by themselves not strong levers for change. They can be ignored, worked around, or argued illegitimate [Christín 2017, Landemore 2015]. They need to be socialized and treated as part of a socio-technical system of government change.
Summary

Social computing systems are great at eliciting a lot of opinions, but generally terrible and helping produce consensus toward a decision.

Different elicitation methods such as voting, liquid democracy, rating and comparison ranking provide possible solutions.

Deliberation is challenging because there are no stopping criteria. Structuring the rules of the debate can help overcome stalling and friction.

Crowdsourced democracy offers new tools for public participation, but need to be bought into by those in power.
Social Computing
CS 278 | Stanford University | Michael Bernstein

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