

**Pol.is
&
The Computational Democracy
Project**

**COLIN MEGILL
POLIS / THE COMPUTATIONAL DEMOCRACY PROJECT**

@colinmegill @usepolis @compdem

polis is an open source
platform

for efficiently gathering &
making meaning of perspectives
at scale

using machine learning

**IRAN GREEN MOVEMENT /
TAHRIR SQUARE /
OCCUPY**



LOTS OF PEOPLE
LOTS OF ISSUES
LOTS OF INTERESTS
LOTS OF POSITIONS

MACHINE LEARNING FOR DELIBERATIVE DEMOCRACY

PROJECT BEGAN IN **2012**

COMPLETELY **OPEN SOURCE**



Business Impact

The simple but ingenious system Taiwan uses to crowdsource its laws

vTaiwan is a promising experiment in participatory governance. But politics is blocking it from getting greater traction.

by Chris Horton August 21, 2018

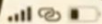
**MIT
Technology
Review**

UNDP

**PAKISTAN/BHUTAN/
EAST TIMOR**



18:35



AA Not Secure — conversations.org



.YOUTH CONVERSATIONS.



Saida mak Timor-Leste presiza halo hodi kombate mudansa klimátika?



Anonymous wrote:

14 remaining

Investe iha produsaun ba materiál sira ne'ebe bele susbtitui plástiku.

Activate third-party translation



Agree



Disagree

Pass / Unsure

Share your perspective...

Blog

Policy Lab

Organisations: [Civil Service](#)



Cutting through complexity using collective intelligence

[prateekbuch](#), 11 October 2022 - [Collective Intelligence](#), [Policy Lab](#)

This post sets out Collective Intelligence Lab's reflections on our experiments to date and how this approach could be applied to complex policy areas such as climate change.

What is collective intelligence?

At [Policy Lab](#), we strive to radically improve policymaking by experimenting with innovative, people-centred methods. These approaches are well suited to complex, persistent and systemic challenges like those faced by policymakers working on aspects of climate change - as we set out in recent posts about [art in policy](#), [systems mapping](#) and [co-design](#).

In November 2021 we established a [Collective Intelligence Lab](#) (CLab), with the aim of improving policy outcomes by tapping into collective intelligence (CI). We define CI as the diversity of thought and experience that is distributed across groups of people, from public servants and domain experts to members of the public. We have been experimenting with a digital tool, [Pol.is](#), to capture diverse perspectives and new ideas on key government priority areas. To date we have run eight debates on issues as diverse as Civil

Policy Lab

Policy Lab is bringing new policy tools and techniques to the UK Government.

We are a creative space where policy teams can develop the knowledge and skills to develop policy in a more open, data-driven, digital and user-centred way.

We make policy making more open. This is in support of the vision for A Brilliant Civil Service.

To commission us, email: team@policylab.gov.uk

[About Policy Lab](#)

[About Open Policy Making](#)

[Open Policy Making Toolkit](#)

Follow us



How to Put Out Democracy's Dumpster Fire

Our democratic habits have been killed off by an internet kleptocracy that profits from disinformation, polarization, and rage. Here's how to fix that.

About

Overview

Challenges

FAQs

Contributing

Signing Up

Values

Aliases

Writing notes

Locking and unlocking the ability to write notes

Rating notes

Rating and Writing Impact

[Diversity of perspectives](#)

Notes on Twitter

Examples

Additional Review

Diversity of perspectives

Birdwatch aims to identify notes that many people on Twitter will find helpful, including people with different points of view.

To find notes that are helpful to the broadest possible set of people, Birdwatch takes into account **not only how many** contributors rated a note as helpful or unhelpful, **but also whether people who rated it seem to come from different perspectives**.

Birdwatch assesses “different perspectives” entirely based on how people have rated notes in the past; Birdwatch does not ask about or use any other information to do this (e.g. demographics like location, gender, or political affiliation, or data from Twitter such as follows or Tweets). This is based on the intuition that Contributors who tend to rate the same notes similarly are likely to have more similar perspectives while contributors who rate notes differently are likely to have different perspectives. If people who typically disagree in their ratings agree that a given note is helpful, it’s probably a good indicator the note is helpful to people from different points of view.

This approach has a number of benefits. First, it reflects the reality that people’s views can be nuanced, rather than defined by demographics. Second, in support of Birdwatch’s

Birdwatch: Crowd Wisdom and Bridging Algorithms can Inform Understanding and Reduce the Spread of Misinformation

Stefan Wojcik
Twitter Cortex

Sophie Hilgard
Twitter Cortex

Nick Judd
Twitter Research

Delia Mocanu
Twitter Cortex

Stephen Ragain
Twitter Cortex

M.B. Fallin Hunzaker
Twitter Research

Keith Coleman
Twitter Product

Jay Baxter*
Twitter Cortex

ABSTRACT

We present an approach for selecting objectively informative and subjectively helpful annotations to social media posts. We draw on data from an online environment where contributors annotate misinformation and simultaneously rate the contributions of others. Our algorithm uses a matrix-factorization (MF) based approach to identify annotations that appeal broadly across heterogeneous user groups — sometimes referred to as “bridging-based ranking.” We pair these data with a survey experiment in which individuals are randomly assigned to see annotations to posts. We find that annotations selected by the algorithm improve key indicators compared with overall average and crowd-generated baselines. Further, when deployed on Twitter, people who saw annotations selected through this bridging-based approach were significantly less likely to reshare social media posts than those who did not see the annotations.

1 INTRODUCTION

Social media remains a critical part of how Americans consume news [47]. Social media companies seek to meet this need by surfacing credible news content from diverse voices [9, 10, 15]. However, misinformation presents a lingering challenge. Especially for polarizing topics like news or politics, surfacing content found credible by a broad audience remains a challenge [19].

Twitter’s Birdwatch feature [10] is a community-driven approach

they are poorly written, or because they use language that may be perceived as biased or argumentative. For instance, someone might feel a note is combative — or simply hard to read — and take that as a cue to disregard the information it contains, rather than consider the note’s salient, if ineptly presented, information.

Similarly, notes with weak sourcing, or without a strong factual basis, may appeal to people by invoking taken-for-granted ideas or assumptions. For example, large groups of people on Twitter might agree with, and rate as helpful, notes that are misleading or non-informative but also consistent with their prior beliefs [44]. A core challenge for Birdwatch, then, is to identify notes which not only contain accurate, high quality information, but are also written in a way that is likely to resonate with broad audiences, not just those who are already inclined to agree.

We present an algorithm to identify which notes are informative and helpful based on the user-generated notes themselves and the history of user-generated ratings for each note. Using these inputs, we seek to overcome two obstacles to our objectives. First, ratings are themselves a function of not only a note’s latent properties (e.g. quality, tone, bias), but also of how raters react to the note, given each rater’s prior beliefs. Second, we have no prior information about each rater’s prior beliefs, each note’s latent properties, or how these attributes interact in the process that generates individual ratings. We develop a matrix factorization (MF) method from the rater-note matrix in Birdwatch that captures the baseline propensity

CARL MILLER

BUSINESS NOV 20, 2022 7:00 AM

Elon Musk Embraces Twitter's Radical Fact-Checking Experiment

The project allows users to suggest short notes that add missing context to viral tweets. It could change how social platforms operate.



PHOTOGRAPH: MIRAGE/GETTY IMAGES

Computer Science > Social and Information Networks

[Submitted on 22 Nov 2022]

"Coherent Mode" for the World's Public Square

Colin Megill, Elizabeth Barry, Christopher Small (The Computational Democracy Project)

Systems for large scale deliberation have resolved polarized issues and shifted agenda setting into the public's hands. These systems integrate bridging-based ranking algorithms – including group informed consensus implemented in Polis and the continuous matrix factorization approach implemented by Twitter Birdwatch – making it possible to highlight statements which enjoy broad support from a diversity of opinion groups.

Polis has been productively employed to foster more constructive political deliberation at nation scale in law making exercises. Twitter Birdwatch is implemented with the intention of addressing misinformation in the global public square. From one perspective, Twitter Birdwatch can be viewed as an anti-misinformation system which has deliberative aspects. But it can also be viewed as a first step towards a generalized deliberative system, using Twitter's misinformation problem as a proving ground.

In this paper, we propose that Twitter could adapt Birdwatch to produce maps of public opinion. We describe a system in five parts for generalizing Birdwatch: activation of a deliberative system and topic selection, population sampling and the role of expert networks, deliberation, reporting interpretable results and finally distribution of the results to the public and those in power.

Subjects: **Social and Information Networks (cs.SI)**; Human-Computer Interaction (cs.HC); Multiagent Systems (cs.MA)

Cite as: [arXiv:2211.12571](https://arxiv.org/abs/2211.12571) [cs.SI]

(or [arXiv:2211.12571v1](https://arxiv.org/abs/2211.12571v1) [cs.SI] for this version)

<https://doi.org/10.48550/arXiv.2211.12571> 

Bridging Systems

Open Problems for Countering Destructive Divisiveness across Ranking, Recommenders, and Governance

Aviv Ovadya*
Harvard University
aviv@aviv.me

Luke Thorburn†
King's College London
luke.thorburn@kcl.ac.uk

Divisiveness appears to be increasing in much of the world, leading to concern about political violence and a decreasing capacity to collaboratively address large-scale societal challenges. In this working paper we aim to articulate an interdisciplinary research and practice area focused around what we call *bridging systems*: systems which increase mutual understanding and trust across divides, creating space for productive conflict, deliberation, or cooperation. We give examples of bridging systems across three domains: recommender systems on social media, software for conducting civic forums, and human-facilitated group deliberation. We argue that these examples can be more meaningfully understood as processes for *attention-allocation* (as opposed to “content distribution” or “amplification”), and develop a corresponding framework to explore similarities—and opportunities for bridging—across these seemingly disparate domains. We focus particularly on the potential of *bridging-based ranking* to bring the benefits of offline bridging into spaces which are already governed by algorithms. Throughout, we suggest research directions that could improve our capacity to incorporate bridging into a world increasingly mediated by algorithms and artificial intelligence.

Keywords: *bridging, cross-cutting, polarization, depolarization, deliberative technology, facilitation, recommender system, ranking, artificial intelligence*

TECHNOLOGY AND PUBLIC PURPOSE PROJECT

Bridging-Based Ranking

How Platform Recommendation Systems Might Reduce Division and Strengthen Democracy

Aviv Ovadya

HARVARD Kennedy School
BELFER CENTER
for Science and International Affairs

PAPER
MAY 2022

PRINCIPLES & IMPLEMENTATION

SCALEABLE + COHERENT

NON VIOLENT COMMUNICATION



Anonymous wrote:

44 remaining

I don't like Renzi.



Agree



Disagree

Pass / Unsure



Share your perspective...

Submit

what everyone has to say

x

what everyone thinks about it

(as an '**opinion matrix**')

participant	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
0	0	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	-1	1	1	0	-1	0			
1	1	1	1	-1	0	-1	1	-1	-1		-1	-1	1	1		1		1	-1	-1	-1	-1	1	-1	1	-1	0	1	-1	-1	0	-1	-1	-1	
2	-1	1	1	-1	0	-1	1	-1	-1		0	-1	1	1		0																			
3	1	1	1	-1	1	1	-1	-1	-1		-1	-1	1	1		0		-1	-1	-1	-1	0	-1												
4	-1	1	1	-1	-1	1	1	-1	-1		-1	-1	0	-1		-1		-1	0	-1	1	-1	1	-1	1	0	1	1	-1	-1	1	-1	1	1	
5	1	1	1	-1	-1	1	-1	1	1		-1	-1	0	-1		-1		1	0	-1	-1	0	-1	1	1	1	0	0	1						
6	-1	1	1	-1	-1	1	-1	-1	-1		1	-1	1	-1		-1		1	0	-1	-1	1	1	-1	-1	-1	-1	-1	-1	1	-1	0	-1	-1	
7	1	1	1	-1	0	1	-1	0	1		-1	-1	0	0		-1		1	0	1	0	0	-1	0	1	0	0	-1	0	1	0	0	0	0	
8	-1		1		-1			-1	-1				1			1		-1	1				-1		1	1	1	-1		1	-1				
10	1	1	0	1	1	1	-1	1	-1		-1	-1	1	0		-1		-1	1	1	1	-1	-1	1		1	-1		1		1				
11	1	1	1	0	-1	1	1	-1	-1		-1	1	1	1		0		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	
13	1	1	1	-1	0	-1	1	1	-1		-1	1	0	0		0		1	1	0	0	0	-1	1											
14	1	1	1	-1	-1	1	-1	-1	-1		-1	-1	-1	-1		-1		1	1																
15	1	-1	1	1	1	1	1	-1	-1		-1	1	-1	1		1		1	-1																
16	1	1	1	-1	-1	1	1	-1	-1		-1	-1	-1	1		0		1	0	-1	0	0	1	0	1	1	0	-1	1	-1	1	0	1	1	
17	0	-1	1	-1	1	0	1	0	-1		-1	0	1	0		0		1	0	0	0	0	1	-1	0	0	0	0	-1	-1	0				
18	1	-1	1	-1	1	1	-1	-1	0		0	-1	0	1		-1		1	0	1	0	1	-1	0	1	1	-1	0	0						
19	-1	1	1	0	-1	0	-1	1	0		-1	-1	1	0		1		0	0	-1	0	0			1	-1		0	-1		-1		0		
20	1	1	1	-1	-1	1	0	-1	-1		0	-1	-1	1		-1		1	-1	1	-1	0	1	1	1	-1	0								
25	1	0	1	-1	1	1	-1	-1	-1		0	-1	-1	1		-1		0	0	-1	0	0	1	0											
26	-1	1	1	-1	-1	1	-1	1	-1		-1	-1	-1	-1		-1		1	0	1	0														
27	1	1	1	1	0	0	-1	0	-1		1	-1	-1	1		-1		1	-1	1	-1	1	-1	1	1	0	-1	-1	1	1	1	1			
28	0	0	0	0	0	1	0	0	0		0	0	0	0		-1		1	0	0	0	0	0	0		1									
29	-1	1	1	-1	0	1	-1	-1	-1		-1	-1	1	-1		1		1	0	0	1	-1	1	0	1	-1	1	1	-1	0	-1	1			
34	0	1				0	1		-1			-1		-1		0		0	0	-1	0		0		0	0	0		1			0	-1	-1	
35	1	1	1	-1	-1	0	-1	-1	-1		-1	-1	0	-1		1		0	0	-1	-1	-1	-1	-1	1	-1	0	-1	-1	-1	-1	-1			
36	-1			0	1		0	-1					1			-1		1		1	0		1		1	0	0	0		0	0	0			
38	-1	1	1	0	-1	0	1	-1	-1		-1	-1	0	0		0		-1	0	1	0	-1	1	-1	1	0	0	0	0	1	0	0			
12		1	1	-1	0	0	-1	-1	-1		1	-1	0	1		0		1	0	1	0	0		0	1	0	0	0	1			0	0	0	



Wiki survey

From Wikipedia, the free encyclopedia

Wiki surveys or **wikisurveys** are a [software](#)-based [survey](#) method with similarity to how [wikis](#) evolve through [crowdsourcing](#). In essence, they are surveys that allow participants to create the questions that are being asked.^{[1][2][3]} As participants engage in the survey they can either vote on a survey question or create a survey question. A single open-ended prompt written by the creator of the survey determines the topic the questions should be on. The first known implementation of a wiki survey was in 2010,^[4] and they have been used since then for a variety of purposes such as facilitating [deliberative democracy](#), crowdsourcing opinions from experts and figuring out common beliefs on a given topic.^{[5][6][7]} A notable usage of wiki surveys is in [Taiwan](#)'s government system, where citizens can participate in crowdsourced lawmaking through Polis wiki surveys.^{[8][9][10]}

Wiki surveys facilitate [collective intelligence](#) by allowing users to both contribute and respond to the survey, as well as see the results of the survey in real time. They can be seen in a more general sense as a tool for establishing [consensus](#) in large volumes of people. Wiki surveys mainly differ from consensus-building in [comment sections](#) by using a [heuristic](#) which determines the order of questions for each participant that aims to maximize consensus, not allowing replies to questions and providing visualization tools to better understand consensus.

Contents [hide]

- 1 Implementations
 - 1.1 All Our Ideas
 - 1.2 Polis
- 2 Examples
- 3 Characteristics
 - 3.1 Collaborativeness
 - 3.2 Adaptivity
 - 3.3 Greediness
- 4 Traditional survey methods vs. wiki surveys
 - 4.1 Advantages of wiki surveys
 - 4.2 Disadvantages of wiki surveys
- 5 References

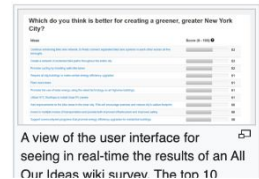
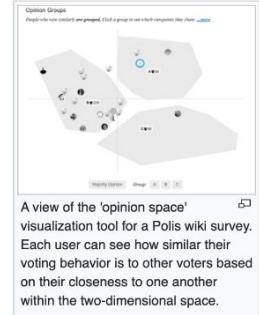
Implementations [edit]

All Our Ideas [edit]

All Our Ideas was the first ever wiki survey.^[1] Its focus is on ranking the favorability of each 'item' that users submit to the survey. Each question presented asks the participant to rank the best of two items. At any point in time, participants can view a ranking of the items in order of their score. The score for an item is the estimated probability that it would be favored over another randomly chosen item. In this sense, it is considered a 'pairwise wiki survey'. The code for All Our Ideas is [open source](#).^[11]

Polis [edit]

Polis (also known as Pol.is) was developed in 2012.^[2] The focus of Polis is to project participants into an 'opinion space' where they can see how their voting behavior compares to other participants. The opinion space clusters participants into groups of similar opinion and is designed in a way to avoid [tyranny of the majority](#) by being able to include groups that have small



- [Main page](#)
- [Contents](#)
- [Current events](#)
- [Random article](#)
- [About Wikipedia](#)
- [Contact us](#)
- [Donate](#)

- [Contribute](#)
- [Help](#)
- [Learn to edit](#)
- [Community portal](#)
- [Recent changes](#)
- [Upload file](#)

- [Tools](#)
- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Permanent link](#)
- [Page information](#)
- [Cite this page](#)
- [Wikidata item](#)

- [Print/export](#)
- [Download as PDF](#)
- [Printable version](#)

- [Languages](#)
- [Add links](#)

UNSUPERVISED





UNSUPERVISED



CLUSTER BY
SIMILARITY



SPENDEN



Pol.is

Das interaktive Umfragetool Pol.is visualisiert Meinungsbilder in Mengendiagrammen und kann helfen, bei umstrittenen Sachverhalten die Nuancen von Zustimmung und Ablehnung in einer Gruppe besser zu erkennen.

Um herauszufinden, was die Menschen in Deutschland bewegt, haben wir zum Start der Bewegung testweise auf Pol.is gesetzt, um unseren Einsatz und unsere Politik auf das abzustimmen, was ihr wirklich wollt.

Wir waren überwältigt von der Anzahl der Teilnehmer bei dieser ersten digitalen Debatte. Derzeit machen wir uns darüber Gedanken, wie wir ähnliche Tools in Zukunft noch besser einsetzen können. Wir halten euch auf dem laufenden!

Einen ausführlichen schriftlichen Bericht zur ersten Pol.is-Umfrage (English) findest [hier](#).

Werde Teil der Bewegung

HÄUFIG GESTELLTE FRAGEN



33,547
people voted

23,354
people grouped



1,966,989
votes were cast

783
statements were
submitted

58.63
votes per voter on
average

1.79
statements per author
on average



Visual arts community: Join the conversation and share your experience

Follow:



Current status: Closed

i Important: The conversation is closed.

This conversation took place between February 5, 2018 and February 23, 2018.

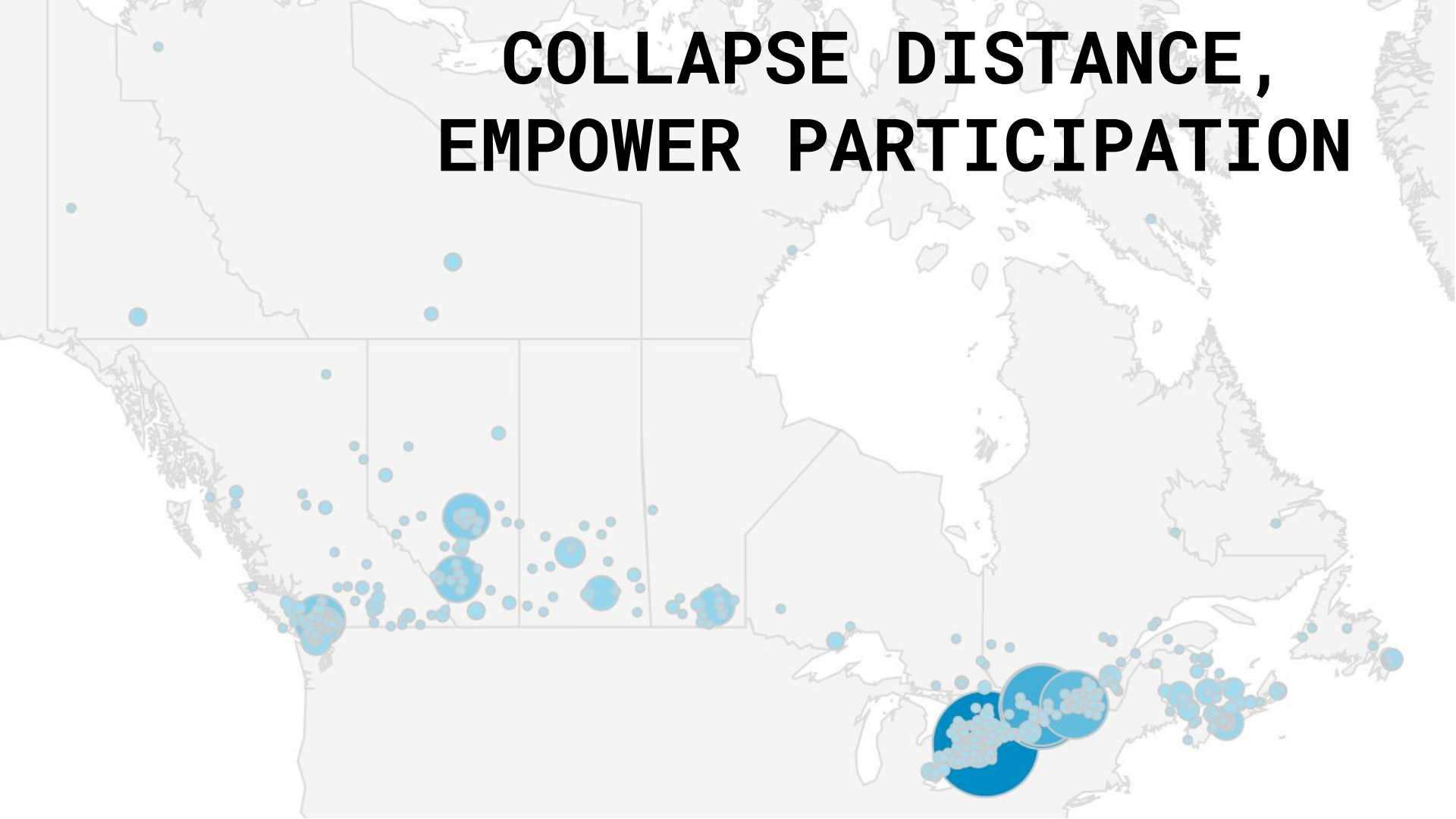
We are analyzing the input.

The Department of Canadian Heritage needs your help to better understand challenges and opportunities within the Canadian visual arts marketplace. We want to hear your perspective, whether you are an artist, a collector, a consumer or connected with the visual arts marketplace.

Join in: how to participate

We have created an anonymous virtual space where you can share your experience as well as your thoughts and ideas about issues.

COLLAPSE DISTANCE, EMPOWER PARTICIPATION



753

people voted

570

people grouped

43,901

votes were cast

577

statements were
submitted

58.30

votes per voter on
average

2.57

statements per author
on average

WHAT COMMENT BOXES

WON'T DO:

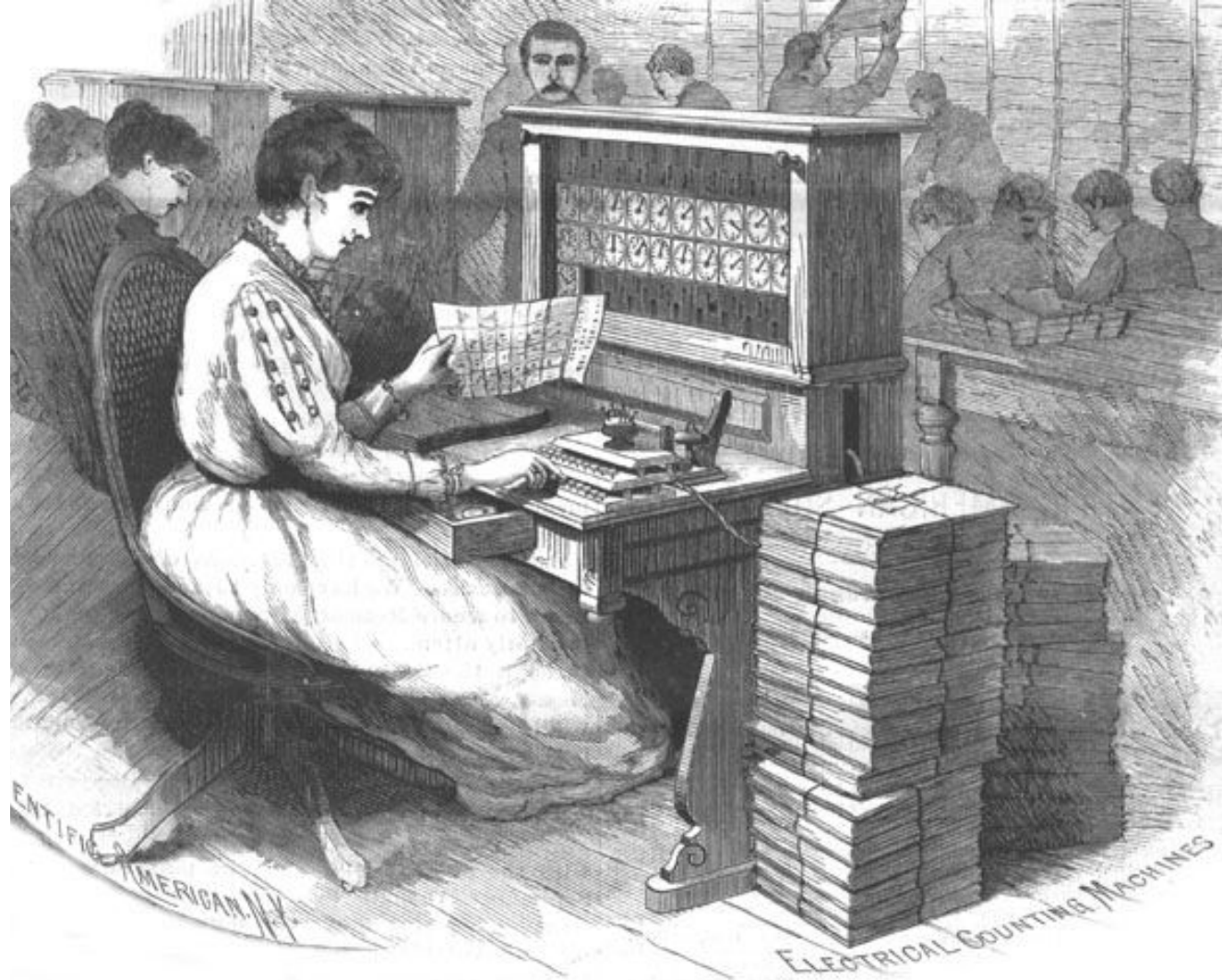
750 PEOPLE

43,000 VOTES

**input to deliberative
processes**

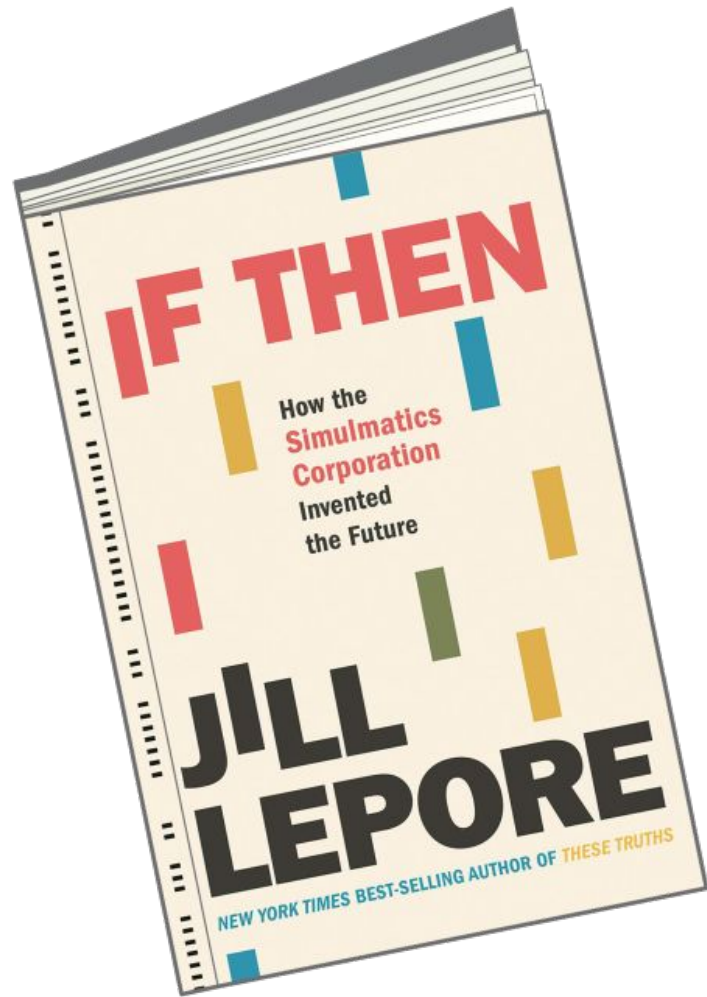
limitations: number of comments,
async voting, integrating
results

HOLLERITH ELECTRIC COUNTING MACHINE



UNIVAC 1 (CENSUS)





IF THEN

How the
**Simulmatics
Corporation**
Invented
the Future

JILL
LEPORE

NEW YORK TIMES BEST-SELLING AUTHOR OF THESE TRUTHS

AMERICAN CHRONICLES AUGUST 3 & 10, 2020 ISSUE

HOW THE SIMULMATIC CORPORATION INVENTED THE FUTURE

When J.F.K. ran for President, a team of data scientists with powerful computers set out to model and manipulate American voters. Sound familiar?

By **Jill Lepore**
July 27, 2020



How does the public relate to
the **models made of the public?**

Building new systems to durably
return political agency and
agenda setting power to public

@CompDem, 501c3

@CompDem, 501c3

Maintain code
Organize methods & training
Guide implementation
Advance research



This is a generational
opportunity to transform
policymaking worldwide

@colinmegill

@compdem

@usepolis

<https://pol.is>

compdemocracy.org