



DELIBERATIVE TECHNOLOGY: DESIGNING AI AND COMPUTATIONAL DEMOCRACY FOR PEACEBUILDING IN HIGHLY-POLARIZED CONTEXTS

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In her role with the Toda Peace Institute, she produces research reports and publications, convenes workshops and conferences, and commissions policy briefs and case studies on the impact of social media on conflict dynamics and how to use technology to support social cohesion. She participates as a Founding Member of the [Council on Technology and Social Cohesion](#) and was the lead organiser for the 2023 conference on Designing Technology and Social Cohesion in San Francisco.

Schirch is the author of eleven books including most recently [Social Media Impacts on Conflict and Democracy](#) (2021), [The Ecology of Violent Extremism](#), and several action guides including [Synergizing Nonviolent Action and Peacebuilding](#), [Handbook on Human Security: A Civil-Military-Police Curriculum](#), and [Local Ownership in Security](#).

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Introduction

The Toda Peace Institute and the University of Notre Dame's Kroc Institute for International Peace Studies co-hosted a workshop for 45 peacebuilders worldwide from June 24-27, 2024. This workshop explored the opportunities, challenges, and processes of applying deliberative technologies to widen civic space in diverse cultural and political contexts. This four-day interactive workshop offered a deep dive into the use of deliberative technologies in polarized contexts. It included expert talks, group discussions, and clustered working groups on case studies. Emphasizing citizen participation and collective intelligence, the workshop explored the intersection of digital democracy and algorithmic technologies designed to enhance democratic processes. Central to the discussions were deliberative technologies, a new class of tools that facilitate collective discussion and decision-making by incorporating both qualitative and quantitative inputs, supported by bridging algorithms and AI.

Throughout the workshop, broader themes of governance, populism, polarization, social cohesion, and peacebuilding were woven into the discussions, emphasizing the importance of these emerging technologies in addressing contemporary challenges in democratic societies. The workshop provided a comprehensive overview of how these innovative approaches and technologies can contribute to more inclusive and effective democratic processes, particularly in contexts marked by polarization and conflict.

The workshop brought together a diverse group of participants, including peacebuilding and governance practitioners from across Europe, Asia, and Africa. These practitioners were joined by experts in deliberative technology and democracy, encompassing tech designers and computer scientists at the forefront of developing and implementing these innovative tools. Additionally, faculty members with relevant expertise and a strong interest in the intersection of technology and democracy contributed their knowledge and insights. Students also played a vital role, participating in the workshop for credit. This diverse assembly of practitioners, experts, academics, and students created a dynamic environment for learning, collaboration, and the exchange of ideas.



Background to the workshop

This workshop grew from the Toda Peace Institute's long-term commitment to dialogue and deliberation. Founded on the principles of non-violence and international cooperation, the Toda Peace Institute has consistently brought together scholars, policymakers, and practitioners from around the world to address pressing global issues related to peace and security. By facilitating constructive dialogue among diverse stakeholders, the Toda Peace Institute has played a crucial role in bridging divides, reducing conflict, and promoting a deeper understanding of the complex dynamics that underlie global tensions. Its commitment to interdisciplinary research and its focus on practical, evidence-based solutions have made the institute a key player in shaping global peacebuilding efforts and advancing the cause of lasting peace in regions affected by conflict. The Toda Peace Institute's "Social Media, Technology, and Peacebuilding" program conducts research and convenes workshops and conferences to explore the positive and negative impacts of technology, beginning with our 2021 book Social Media Impacts on Conflict and Democracy: The Tectonic Shift with case studies from 13 countries.

In partnership with the University of Notre Dame's Kroc Institute for International Peace and other partners, we worked with a group of leading tech ethicists and peacebuilding organizations to organize a conference in February 2023 on "Designing Tech for Social Cohesion." This conference highlighted deliberative technology experts Colin Megill, co-founder of Pol.is and the Computational Democracy Project), and Andrew Konya, founder of Remesh.ai, Daanish Masood of the UN Innovation Unit that used Remesh in peace processes in Libya and Yemem, as well as Tristan Harris, tech ethicist and co-founder of the Center for Humane Technology, Taiwan's Minister of Digital Affairs Audrey Tang, and Shamil Idriss, CEO of Search for Common Ground. Over 300 people from the tech community and peacebuilding organizations took part in the conference. Many peacebuilding groups expressed an interest in gaining training and insight into how to use deliberative technologies in their work.

The conference launched the Council for Technology and Social Cohesion, a network of technologists and peacebuilding organizations. The Council's mandate includes creating more opportunities for peacebuilding organizations to learn how to use deliberative technologies. In March 2024, the University of Notre Dame Keough School of Global Affairs and the Council co-hosted a Symposium on Defending Democracy with Deliberative Technologies in Washington, D.C. with Nobel Peace Prize winner and journalist Maria Ressa. The June 2024 workshop built upon the growing interest among peacebuilding organizations in applying deliberative technologies in highly polarized contexts.



Key concepts

The workshop centered on a variety of key concepts.

Polarization today presents a formidable challenge to the stability and resilience of democratic systems, acting as a powerful force in the backsliding of democracy worldwide. As societies become increasingly divided along ideological, cultural, and social lines, polarization exacerbates distrust among citizens, erodes the foundations of civil discourse, and undermines the legitimacy of democratic institutions. This deepening divide fosters environments where opposing groups view each other not merely as political adversaries but as existential threats, justifying extreme measures and reducing the willingness to compromise. In such polarized climates, populist leaders often exploit these divisions, further weakening democratic norms by promoting authoritarian practices and undermining checks and balances. As a result, polarization not only disrupts effective governance but also threatens the very essence of democracy by fragmenting societies and diminishing the collective ability to address common challenges.

Over the last ten years, innovations in "computational democracy" and a new class of technology known as "deliberative technologies" offer digital tools for supporting public discussion on policy issues, emphasizing citizen participation and collective intelligence.

After decades of democracy spreading to more and more countries, the last decade witnessed democratic backsliding globally. New initiatives to bolster and defend democracy incorporate both direct and representative democratic institutions. **Citizen assemblies** with demographically accurate mini-publics have helped to generate ideas for climate solutions and constitutions in many countries.

A “**deliberative wave**” is pushing back on democratic backsliding. The 2018 *Oxford Handbook on Deliberative Democracy* and the 2020 OECD report “Innovative Citizen Participation and New Democratic Institutions” detail how deliberative processes can help to counter threats from increasing polarization and populism.[1] Deliberation involves people exchanging ideas on shared challenges over time to identify potential solutions.

In the European Union, for example, **democratic innovations** utilize technology to directly involve citizens in the policymaking process by participating in digital deliberation, interacting with the opinions and ideas of other citizens, and voting to send public signals to policymakers with areas of consensus and emerging policy solutions.

Technology can also help defend democracy, build trust in public institutions, and bridge polarized publics. Over the last ten years, innovations in "computational democracy" and a new class of technology known as "deliberative technologies" offer digital tools for supporting public discussion on policy issues, emphasizing citizen participation and collective intelligence.

Deliberative technologies enable people to listen at scale to each other and dialogue with each other by adding their policy ideas, and identifying other's ideas they agree with.[2] Algorithms on some of these platforms incentivize and identify finding common ground across polarized publics, enabling people to learn more about diverse ideas and break down stereotypes about what others believe. Some deliberative technologies use AI to help synthesize and rank ideas with wide consensus. Unlike traditional methods such as surveys and polls, deliberative technologies enable large-scale digital deliberation, fostering more informed and nuanced public discourse. These technologies can increase attention to accuracy, reduce polarization, and facilitate critical thinking by allowing participants to engage in iterative discussions, listen to diverse perspectives, and develop collective solutions. Deliberative technologies harness the collective intelligence, synthesizing public input through artificial intelligence to generate more comprehensive and representative policy outcomes.

Deliberative technologies could revitalize democratic processes and hold great potential for helping to foster dialogue across lines of polarization and widen public consultation to revitalize civic engagement. By identifying shared values and common ground, deliberative technologies could assist policymakers, think tanks, and civil society organizations in strengthening democracy and countering the forces driving democratic backsliding.

Computational democracy is an emerging field from the intersection of technology, data science, and political theory. It seeks to enhance democratic processes by leveraging advanced computational tools such as statistics, machine learning, and algorithms to analyze and interpret the views of large groups of people. Unlike traditional forms of democracy, which often rely on simple majority voting or representation, computational democracy uses these technologies to gain a deeper understanding of public opinion, capturing the complexity and nuance of individual voices. By processing and synthesizing large volumes of data, computational democracy aims to create a more inclusive and representative decision-making process. This approach not only allows for a more sophisticated analysis of what people think in their own words but also provides the potential to design new democratic systems that are more responsive and adaptive to the population's needs. Ultimately, computational democracy represents a shift towards a more data-driven and participatory form of governance, where technology plays a central role in shaping the future of democratic institutions.

Colin Megill, co-founder of Pol.is and the [Computational Democracy Project](#), spoke at the workshop on the origins of this approach. Watching the democratic movements in the Arab Spring and Occupy Wall Street, Megill and colleagues noted that social media helped to spread awareness about these movements but were not capable of helping people deliberate about their methods or goals.[3] Pol.is uses the computational power of machine learning algorithms and data visualization to map opinion spaces, helping people better understand commonalities and differences in large groups.[4]

Collective intelligence is the ability of large groups of people to find answers and develop solutions collaboratively.[5] Democracy is built on the idea that large numbers of informed people with diverse lived experiences will make better decisions than a small number of experts or representatives of people. Before technology, managing collective intelligence was difficult. Large numbers of people cannot all speak at the same time. Town halls could last for hours or days if they were to give time for everyone to speak. New technologies solve this problem. On digital platforms thousands or even millions of people can speak at the same time. AI can help to digest and synthesize large amounts of public input to identify themes and patterns.

Bridging Systems and Bridging Algorithms, as explored by Aviv Ovadya and Luke Thorburn, focus on countering digital platforms' divisive effects by creating systems and algorithms designed to bridge divides rather than exacerbate them. These concepts involve developing digital tools that identify common ground between polarized groups by analyzing and mapping areas of agreement and disagreement. Bridging algorithms, in particular, aim to foster constructive dialogue by surfacing shared values and perspectives, reducing antagonism, and encouraging more nuanced understanding among users. By prioritizing connection and collaboration over conflict, these systems seek to mitigate the polarizing impacts of current online platforms and contribute to healthier, more cohesive democratic societies.[6]

Digital Public Squares: Since the origins of the internet, commentators have noted how digital spaces like Google, eBay, Facebook, and X are playing the role of a digital public square where people exchange goods and ideas. While most large tech platforms were built to "connect people", they are optimized and monetized to generate profit. Sometimes, this profit motivation seems to accelerate polarization, making it difficult for people to listen to each other and discern facts from disinformation.

Ideally, digital public squares are virtual spaces designed to facilitate open, inclusive, and democratic discussions among diverse groups of people. Deliberative technologies are designed to achieve this goal. These platforms aim to replicate the function of traditional public squares by providing a venue for citizens to engage in dialogue, share ideas, and participate in decision-making processes on various social, political, and cultural issues. Unlike physical public spaces, digital public squares leverage technology to connect people across geographical boundaries, enabling broader participation and fostering a sense of global community. By utilizing tools such as deliberative technologies, these platforms can promote informed discourse, bridge divides, and mitigate polarization, thereby strengthening democratic processes in the digital age.

In April 2023, Google Jigsaw convened a major gathering of people working on "AI and the Public Square." As interest in deliberative technology grows, there is a need for a discussion among experts and practitioners on the socio-technical process surrounding the use of these technologies.

Human-computer interaction (HCI), a multidisciplinary field focusing on the design of computer technology and the interaction between users and computers, plays a critical role here. Similarly, **socio-technical systems (STS)** examine how societies or communities utilize technical processes. These concepts were foundational to the design of the workshop since democracy and peacebuilding are, by definition, people-centric processes. The workshop balanced the human-computer interactions in implementing deliberative technologies in highly polarized contexts.

Workshop speakers and sessions

The workshop included a mix of plenary sessions with expert speakers and time for case study clusters to meet to discuss how these deliberative technologies might be used in specific contexts. One of the clusters worked to develop an outline for an *Open Source Guide (or Handbook) on Deliberative Technologies* that could help lay out the choices and decision points groups need to make to use these platforms.

The workshop began on Monday, June 24th, with 47 participants from 19 countries introducing themselves and explaining what had brought them to the workshop. The day began with an overview of deliberative technology by myself (Lisa Schirch), followed by a Zoom appearance by Taiwan's Digital Minister Audrey Tang and Microsoft researcher Glen Weyl. At the time, they were on a world tour meeting with global leaders about their new book *Plurality*, which lays out how technology can support democracy.

Next, Harvard University's Dr. Manon Revel introduced the participants to "The Mathematics of Democracy," exploring the foundational questions of why and how democracy is practiced.[7] Revel teaches and researches at the intersection of applied mathematics and political philosophy to investigate how to augment today's democracy with liquid democracy and sortition and build tomorrow's democracy through collective AI alignment. Workshop participants explored computational democracy and examined how mathematical principles can be applied to design more democratic decision-making processes, such as quadratic voting, ranked voting, and liquid democracy, all grounded in social choice and game theory. Revel explained how AI's large language models (LLMs) work, helping participants understand how AI might assist in deliberative processes. Dr. Revel was also the professor of record for those participants taking the workshop for academic credit.

Next, Caleb Gichuh from Build Up led a session on using the Pol.is platform and shared lessons from its application in Guinea Bissau, Burkina Faso, and Sudan. This was followed by AI expert Shannon Hong presenting case studies highlighting practical implementations of Pol.is. The day concluded with a facilitated discussion on trust-building and depolarization processes led by peacebuilding expert Lena Slachmuislder of Search for Common Ground.

On Tuesday, June 25th, the workshop resumed with an introduction to the Remesh platform by Andrew Konya. Remesh uses AI to assist in several aspects of digital deliberations. Remesh has also been used to support democratic inputs into AI rules or guidelines at OpenAI.[8] After instructing on how to use the platform, Konya guided participants through designing their digital dialogue on the platform and then launching their Remesh deliberation with a live audience via the research firm Prolific, which recruits demographically accurate samples of the US public. Participants worked in groups to develop dialogue questions. Several groups focused on the polarized issue of how Americans feel about public protest and when they view it as legitimate. Several groups chose this topic because of polarized views across the US on the January 6 protest in Washington, DC, which led to violence in the US Capitol building and the series of campus protests on the war in Gaza. Participants then analyzed the results of the digital deliberation and learned lessons about how to structure and sequence their digital dialogues. Finally, Wasim Almasri and Andrew Konya engaged in a fireside chat discussing “Remesh and the Alliance for Middle East Peace,” drawing lessons on how the platform is being used to foster deliberations among peace organizations in Palestine and Israel.

On Wednesday, June 26th, the workshop began with a session on “Bridging Algorithms” by Luke Thorburn of Kings College in London and Manon Revel of Harvard. Bridging algorithms, defined above, enable platforms to identify common ground between diverse groups. Next, Colleen McKenzie of the AI Objectives Institute gave a training session on using the deliberative technology platform “Talk to the City.” This platform uses AI to synthesize participant discussions. Workshop participants engaged in a group exercise, where they discussed the pros and cons of using deliberative technology and highlighted areas of concern about how it might be misused. Participants recorded their small group dialogues on this topic on WhatsApp. The recordings were uploaded to the Talk to the City platform, which then synthesized the deliberation and provided a summary.

Next, Dr. Travis Kriplean, founder of the Consider.it platform gave a talk on how he designed this platform to help US communities engage in active listening. Cities like Seattle have used the platform to enable the public to weigh in on public housing and parks[9]. Dr. Colin Irwin of the University of Liverpool then provided his insights on using “peace polling” in various peace processes. In his talk on “Lessons from Northern Ireland,” he shared his insights into how to formulate the right questions and prompt public reflection on critical tradeoffs and complexities in complex negotiations. [10] The day closed with reflections from three peacebuilding experts, Catherine Barnes from Eastern Mennonite University, Tarek Massarani from New Story Leadership, and Lena Slachmuislder from Search for Common Ground.



On the final day of the workshop, June 27, Helena Puig Laurrari, and Mahmoud Bastati from the digital peacebuilding NGO Build Up shared their experience of using Pol.is in Sudan. Colin Megill, co-founder of Pol.is made a surprise appearance at the workshop and gave a presentation on how Pol.is addresses threats from coordinated inauthentic accounts, disinformation campaigns, and other threats common to digital platforms. The rest of the final day was spent with case study clusters preparing their agenda for planning to use deliberative technologies in the coming months. The cluster working on the *Handbook for Deliberative Technologies* presented their plan for an outline of the handbook and the next steps in its evolution.

Research agenda

The workshop explored various research questions, delving into the complexities of using deliberative technologies in democratic processes. In the coming year, groups will be piloting the use of these technologies in diverse polarized contexts. For example, clusters explored whether deliberative technology can help Afghans now living around the world to talk to each other and set priorities for their future. Another cluster explored if this technology can help Palestinians and Israelis deliberate about their future living side by side. Another cluster asked if the platforms can help Colombians talk about fully implementing their peace agreement. And another discussed whether the platforms can help people living in Nigeria talk about the tradeoffs of oil and environmental damage.

These technologies require significant human guidance. Most of the cost involves staff time to guide the use of the technologies. Participants identified a need for a sensitive and responsive resource to local contexts. A resource will also need translation into different languages. The workshop members plan to co-author and co-own an open-source guide to using deliberative technology in polarized contexts, with the evolving outline of this guide emerging from the decision points and questions discussed.

The key research questions included seven main themes: preparation, stakeholder analysis, timing a digital deliberation, steering the deliberation, post-deliberation follow-up and analysis, broader questions of trust and safety, and the wider landscape of opportunities and threats to democracy.

Preparation

Setting Goals: What is the primary objective, and why is democratic deliberation crucial for achieving it? This might include research, policy development, trust-building, or other goals.

Online and Offline Deliberative Process: How does technology integrate into broader democratic processes, and when is it more appropriate to use technology versus in-person methods?

Choosing the Right Tool(s): What tools or combinations of tools are best suited to the goals, considering factors like language, digital access, and bandwidth? What are the comparative strengths and weaknesses of different deliberative technologies?

Stakeholder Analysis

Identifying Stakeholders and Demographic Representation: Is demographic representation necessary, and who are the key stakeholders? How do we ensure inclusivity?

Stakeholder Buy-In: What motivates stakeholders to participate and lead the process?

Recruiting Participants: What are the most effective methods for recruiting participants, and what are the key considerations?

Timing a Digital Deliberation

Pacing Async or Sync or Both: What considerations should be made regarding the pacing of synchronous versus asynchronous processes?

Setting a Timeline: What factors influence the speed and frequency of new deliberation cycles?

Piloting the Deliberation: How can we test the process before full implementation?

Steering the Deliberation

Preparing informational materials: Deliberation works best when an informed public can exchange views. The widespread collapse of truth in today's information ecosystem makes this more difficult. What are the best practices for preparing fair and balanced informational materials to help participants prepare to deliberate together?

Choosing the Right Question: What is the guiding question, and does it have broad public appeal or urgency?

Developing Seed Comments: How should the deliberation begin? Seed comments often capture many ideas in response to the guiding question.

Post-deliberation questions

Interpreting Results: How should the results be interpreted? This might involve understanding outputs from platforms like Pol.is and Remesh, which vary in their need for explanation.

Sustaining the Process: What comes after the deliberation? How do we foster a culture of deliberative democracy?

Trust and safety questions

Responsible AI: What ethical frameworks are necessary when designing AI-enhanced deliberative technologies, and how do we ensure alignment with responsible AI practices?

Security: What are all the options for maximizing the security of a platform to prevent attacks on a public deliberation?

Privacy: What are all the options for protecting an individual's privacy? What are the tradeoffs between an anonymous deliberation and one featuring people's real identities?

Accessibility: What are the options to ensure that different demographic groups will have access to the technology to enable them to participate?

Landscape analysis

Evolution of Democratic Innovations: What are the opportunities and challenges in advancing citizen deliberation and inclusion in policymaking through deliberative technologies?

Contextual Research: How do various deliberative technologies perform across different political, cultural, and problem-solving contexts?

Intrinsic Value of Civic Agency: How can deliberative technologies enhance civic agency and restore dignity in integral human development processes?

Instrumental Policy Impact: Under what conditions will policymakers respond to public consensus from deliberative technologies, and how can we measure their impact?

Conclusion

The workshop participants developed a learning community that has the potential to generate new insights into many of the research questions outlined above. Next year, the workshop participants will meet via Zoom to share what they have learned and the additional questions emerging from their pilot efforts to use deliberative technologies in their diverse contexts.

Several of the participants from the Guide/Handbook development team have already begun meeting and applying for joint grants to develop the opensource guide to using deliberative technologies. They are beginning to outline further what the resource could offer to communities interested in exploring these platforms.

Several of the workshop participants plan to write articles that explore their application of deliberative technologies in their setting or analyze various uses for the platforms. The Toda Peace Institute will publish some of these articles in our report series in the year ahead.

NOTES

[1] OECD (2020), *Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave*, OECD Publishing, Paris.

[2] Schirch, Lisa. *Defending Democracy with Deliberative Technologies*. Keough School Policy Brief Series. Notre Dame, IN: Keough School of Global Affairs, 2024.

[3] Colin Megill, Elizabeth Barry, Christopher Small. "Coherent Mode" for the World's Public Square. Computational Democracy Project. *Arxiv*. 22 November 2022.

[4] Christopher T. Small, Michael Bjorkegren, Timo Erkkila, Lynette Shaw, Colin Megill. "Pol.is: Scaling Deliberation by Mapping High Dimensional Opinion Spaces." *Recerca, Revista de Pensament*. No. 26(2). 2021. pp. 1-26. DOI: <http://dx.doi.org/10.6035/recerca.5516>

[5] Geoff Mulgan. *Big Mind: How Collective Intelligence Can Change Our World*. Princeton University Press, 2018.

[6] Aviv Ovadya and Luke Thorburn, "Bridging Systems: Open Problems for Countering Destructive Divisiveness across Ranking, Recommenders, and Governance." *ArXiv*. July 2023.

[7] See Revel, et al. Tracking Truth with Liquid Democracy. *ArXiv*. Proceedings of the 24th ACM Conference on Economics and Computation. 7 July 2023.

[8] Andrew Konya, Deger Turan, Aviv Ovadya, Lina Qui, Daanish Masood, Flynn Devine, Lisa Schirch, Isabella Roberts, and Deliberative Alignment Forum. "Deliberative Technology for Alignment." *ArXiv*. 6 Dec 2023.

[9] See Travis Kriplean's blog for reflection on the uses of Consider.it at <https://traviskriplean.com/>

[10] Colin Irwin, "The People's Peace Process: Northern Ireland and the Role of Public Opinion Polls in Political Negotiations." *Security Dialogue*. Vol 30, No. 3 September 1999. pp. 305-317



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