



# Enhancing Deliberation with Digital Democratic Innovations

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## Abstract

Democratic innovations have been widely presented by both academics and practitioners as a potential remedy to the crisis of representative democracy. Many argue that deliberation should play a pivotal role in these innovations, fostering greater citizen participation and political influence. However, it remains unclear how digitalization affects the quality of deliberation—whether digital democratic innovations (DDIs) undermine or enhance deliberation. This paper takes an inductive approach in political theory to critically examine three features of online deliberation that matter for deliberative democracy: scale, transparency, and the facilitation of equality. It argues that the enhancement of equality should be given special attention when designing and implementing deliberative DDIs. Equality is a basic democratic value that is crucial for the intrinsic quality of deliberation. One way of enhancing equality through digital deliberative practices is via AI facilitation, which can assist human facilitators and help mitigate power dynamics, often present in non-digital settings.

**Keywords** Digital democratic innovations · Deliberation · Citizen participation · Transparency · Equality · Scale of deliberation

## 1 Introduction

Deliberation in democratic innovations (DIs), including digital democratic innovations (DDIs), is a topic that is widely discussed by both academics and practitioners. DIs and DDIs have largely been seen as a possible solution to the crisis of representative democracy, and many believe that deliberation is an element that is crucial for these new initiatives, for citizen participation, and for giving the general public more influence over political processes (Goodin & Dryzek, 2006; Landemore, 2020; Smith, 2009, a, b). Low voter turnouts, declining civic activity (e.g., party

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membership), rising economic inequalities, and political polarization are all signs that current democratic systems are not living up to people's democratic aspirations and standards (Bernholz et al., 2021; Dalton, 2004; Newton & Norris, 2000; Norris, 2011, p. 31; Smith, 2009).

This frustration is increasingly pushing modern states and local governments to search for reforms that could help reconnect people with political power. Among these initiatives, digital democratic innovations (DDIs) are of specific interest. DDIs can be defined as initiatives or institutions that are designed with the goal of deepening citizens' participation and influence on political decisions through the use of digital tools and platforms. A good example of a DDI is the online participatory platform *Decide Madrid* (based on the *Consul* platform also used in other cities and countries), which allows Madrid's residents to engage in activities such as online consultations, citizen assemblies, polls and participatory budgeting. What makes DDIs an intriguing topic for research is that they could potentially scale up citizen participation and help reform the current citizen participation practices in ways that would be unfeasible through non-digital means (Landemore, 2020, p. 16; Neblo et al., 2010; Steiner, 2012). The trend for DDIs has been further reinforced by the COVID-19 pandemic, which generated a lot of participatory health governance processes and thus demonstrated the public's need for participatory initiatives, especially when it comes to complex, polarizing and societally influential issues (Norheim et al., 2021).

A lot of these DI and DDI experiments have put the practice of deliberation between citizens at their core – for instance, platforms such as *Decide Madrid* or *Decidim* provide users with opportunities for online deliberations. As many academics contend, deliberation can help people arrive at more informed decisions that take various points of view and perspectives into account, and it is often construed as the best way to build connection between citizens and policies (Dryzek, 2005; Goodin & Dryzek, 2006; Landemore, 2020). However, when it comes specifically to DDIs, many have raised concerns about the value of online deliberation and some have even expressed worries that digitizing deliberative democracy would undermine the benefits deliberation is supposed to bring (Berg et al., 2021; Bernholz et al., 2021; Bohman, 2004; Hilbert, 2009; Wisniewski, 2013).

Is there an added value to digital deliberation? This is the question that I attempt to answer through critically engaging with features of DDIs that are often seen as arguments in favor of digital deliberative practices. In the paper, I analyze those features and demonstrate their limitations, while at the same time emphasizing that even with these pitfalls, deliberative DDIs could still positively affect deliberation. For the purpose of the argument, I focus solely on DDIs that offer digital deliberation and their internal features, even though in many case studies digital deliberative practices often coexist with and support other, non-digital participation practices.

I argue that the main added benefit of online deliberation consists in the facilitation of equality among participating citizens. If designed properly, digital deliberation could help us neutralize power dynamics that are present in non-digital DIs and that cannot always be counteracted with the sole help of human moderators (Curato et al., 2017; Spada & Vreeland, 2013). The paper is an exercise in inductive political theory (Landemore, 2020, p. 20), meaning that its aim is to engage with and develop

normative concepts and arguments, while drawing inspiration from case studies and experiments in DDIs' domain that discuss their upsides and downsides.

In particular, the paper responds to previous works on deliberation and digital democracy in this field. Landemore (2021) argues in favor of moving beyond current electoral democracy systems and tries to imagine a utopian, ideal version of open democracy (based on mini-publics) assisted by digital technologies, but her paper does not address potential limitations of digital deliberation.<sup>1</sup> In another article, Landemore (2022) raises the question of whether deliberation can be scaled up via digital tools, and which benefits such digital deliberation could bring.<sup>2</sup> Even though Landemore (2022) touches upon the possibility of AI facilitation, the work does not cover it in depth and does not address AI's potential limitations. Moreover, Landemore (2022) does not showcase equality as a basic democratic value that should be given special attention when it comes to DDIs. This article aims to fill these gaps: it consists of a critical analysis of DDI dimensions and their possible advantages and drawbacks, while also putting forward a normative argument that places equality at the center of democratic (and deliberative) practices. In other words, the paper argues that the facilitation of equality deserves specific attention as a potential DDI benefit, since it is a basic democratic value that is not only instrumental, but also fundamental for the deliberative ideal.

I will proceed as follows: in the first section, I dive into the concept of deliberative democracy, explain the value behind it and why we should consider deliberation an essential democratic principle. The second section critically engages with the idea of digital deliberative practices. I outline three features of online deliberation that could serve as ways of potentially advancing deliberative democracy, namely: scale, transparency and the facilitation of equality. I discuss their possible limitations, and I argue that the enhancement of equality should be given specific attention as the main added value of deliberative DDIs. Finally, I conclude and outline possibilities for further research.

## 2 The Value of Deliberation

Let me start with the concept of deliberation, and why it is significant and valuable not only for all kinds of DIs and DDIs, but for democratic theory in general. Of course, it has to be noted that deliberative theory is very broad, and therefore I

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<sup>1</sup> More specifically, Landemore (2021) reflects on how digital technologies could be helpful in the construction of open democracy – a concept developed by Landemore herself in her book *Open Democracy* (2020). She claims that digital technologies could be helpful for moving beyond the default electoral democracy system, and introducing a democratic model of open mini-publics (including digital ones).

<sup>2</sup> Landemore (2022) discusses whether AI can bring deliberative democracy to the masses. Thus, it specifically centers around the question of whether deliberation can be scaled up via digital tools, and it considers two possible models of digital deliberation and their possible limitations – Mass Online Deliberation and the array of randomly selected mini-publics that are being rotated in their composition. The article considers how AI tools could be useful in either of those approaches, and touches upon potential benefits AI could provide for moderation/facilitation.

am only sketching the elements of deliberative practices that are important to my research. Deliberative democratic processes presuppose a special emphasis on the moment of deliberation when making political decisions. In other words, instead of focusing only on the moment of final decision-making (e.g., voting), the process of deliberation itself is considered central (Cohen, 1989; Habermas, 1996; Landemore, 2013). Deliberation is often a part of political decision-making procedures that take place among public officials (such procedures also include non-deliberative mechanisms, e.g., voting). Still, deliberative democrats mostly focus on political issues among citizens, and not only among governing elites.<sup>3</sup>

Overall, deliberation can be quite broadly defined as a non-coercive form of communication that encourages reflection on values, preferences and interests (Dryzek, 2002).<sup>4</sup> Deliberative democracy specifically has a broad variety of definitions and variations, but there are some regulative ideals that the majority of theorists share. As such, according to the general idea of deliberative democracy, the deliberation process around a certain issue should be inclusive of all people who are potentially affected by this issue and political decisions around it (Mansbridge et al., 2010). The democratic process cannot be considered truly deliberative if it does not incorporate all the relevant perspectives, meaning that all the groups that are affected by a problem in question should have their opinions and standpoints represented. Strategies on how exactly to achieve this representativeness and sufficiently include relevant perspectives vary, with some researchers arguing, for instance, in favor of oversampling for vulnerable groups, while others claim it is enough to simply create a sample of participants that is as diverse as possible (Goodin, 2008; Karpowitz & Raphael, 2016). In any case, despite different strategies, a common understanding is that inclusiveness of relevant perspectives in deliberation is necessary.

Nonetheless, there is an ongoing discussion in political theory on what actually qualifies as deliberation. The classic ideal of deliberation usually presupposes that over the course of deliberation citizens arrive at a consensus on a certain issue through reason, after rationally exchanging arguments and perspectives with each other (Cohen, 1989). This consensus then becomes a basis for policies and political decisions that are acceptable and legitimate for everyone. Not only should the process of deliberation ensure that all the relevant perspectives are included, but it should also produce policies that are better and more responsive to people's actual needs than the ones generated without deliberation (Curato et al., 2017; Landemore, 2022; Przybylska, 2017, 2021).

The problem with the classic ideal of deliberation is that it puts a lot of emphasis on people being rational and capable of seeing reasons that would objectively qualify as and aim at the common good. Meanwhile, there is increasing evidence that even when citizens sincerely commit to the values of deliberation and openness

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<sup>3</sup> See Habermas (1991, 1996) and his model of public sphere. Habermas focuses on a two-tier system, with the formal and the informal public sphere. According to Habermas, public sphere is a common area between the state and the people (citizens), which allows for a discussion over public concerns, which then turn into public opinion that overflows into government policies, regulations, etc.

<sup>4</sup> See Mansbridge (2010). Even though so-called deliberative ideal strives for no coercion, it is impossible to completely neutralize all possible power dynamics.

to each other's opinions and perspectives, they still tend to exhibit so-called "motivated reasoning". Motivated reasoning implies that even after being exposed to the same arguments, people might still arrive at different conclusions and have a different view on what constitutes the common good (Bagg, 2018). Human reasoning is thus always biased and shaped by hidden motivations over which we do not have control. In other words, even when trying to be rational and objective in their reasons, humans are still guided by a certain self-interest that is intertwined with our identity and moral experiences (Bagg, 2018, p. 258).

However, the fact that human reason cannot be pure and objective does not mean that a deliberative ideal is unachievable. In their article on the place of self-interest and the role of power in deliberative democracy, Mansbridge et al. (2010) suggest a concept of deliberative negotiation as a more realistic ideal of deliberation. This concept takes into account self-interest and the fact that an understanding of the common good might vary for different people, depending on their motivations and views. The deliberative ideal based on negotiation does not necessarily strive for a unanimous consensus of citizens, and it does not rely on citizens seeing objective reason. Instead, it strives for mutual justification of each other's perspectives, which can result in different forms of agreement – such as, for instance, compromise (Mansbridge et al., 2010; Miller, 1992). Such an approach to deliberation not only makes it more achievable, but, by letting self-interest play a role in the deliberative ideal, it also embraces the diversity of human perspectives and opinions (Mansbridge et al., 2010, pp. 72–73).

As a possible critique to this view, O'Flynn and Setälä (2020) claim that the whole point of deliberation should consist in finding the "right answer" that all people would reasonably accept, and therefore things like compromise undermine the deliberative ideal. On the other hand, O'Flynn and Setälä (2020) themselves admit that there is a convincing argument to be made that deliberation is not about finding the one correct answer, but more about how people relate to each other as political equals while trying to find the best (versus the "correct") solution to an issue, which aligns with the view of Mansbridge et al. (2010) and Miller (1992). Therefore, in this article, when talking about deliberative democracy and the deliberative ideal, I will use the expanded concept of deliberation as suggested by Mansbridge et al. (2010), which accounts for people's self-interest.

But what is the value behind deliberation, and why do so many academics and practitioners focus on it as an essential part of DIs/DDIs? The answer is that deliberative democracy allows citizens to not only have more direct influence on political decisions (which can be achieved with such initiatives as, for example, voting on a referendum), but also to be more involved in the process of discussions and deliberations prior to making an actual decision. Through the deliberative procedure, people form opinions on which solution or policy best meets all the arguments that have been put forward regarding a certain issue (Miller, 1992). Therefore, what makes citizens' deliberation valuable is that the process of inclusive deliberation exposes people to a variety of different perspectives, allows them to interact with those perspectives, critically reflect on them and transform their own views. As a result of such a deliberative process, together people come to more informed decisions that take into account different points of view on the problem at stake (Dryzek, 2005;

Goodin & Dryzek, 2006; Landemore, 2020). This is a stark contrast with the system of pure representative democracy, which prioritizes political elite competition and the moment of casting a vote over deliberation (Landemore, 2020, p. 139).

It is crucial to remember that deliberation is more than just a discussion with a variety of perspectives. It is not enough to simply have diverse opinions represented in a discussion for it to constitute deliberation; rather, the point of deliberation is to have a variety of opinions and arguments that critically engage with each other and respond to each other in a respectful, reasonable manner (Landemore, 2013). Even if the ultimate consensus is unachievable and is not the main goal of deliberation (as mentioned before, deliberative negotiation can also be striving for compromise or other forms of commonly beneficial agreement), participants should still reason in such a way as if their aim is to reach a shared judgment, which is possible with proper process design and facilitation (Curato et al., 2017).

A common critique of deliberation draws on the fact that, according to Sunstein's law of group polarization, group discussions on highly conflicting issues can lead to further polarization of participants' opinions – defending their views against others, people become defensive and further reinforced in their beliefs (Cohen & Fung, 2021; Sunstein, 2000). However, such a critique is applicable only in cases where communication does not, in fact, meet the standards set by deliberative theory (Curato et al., 2017; Landemore, 2013; Stromer-Galley et al., 2012). How exactly discussions develop depends highly on how the procedure is designed and with which goals in mind. For instance, deliberative polls and other experiments that were based on deliberative practices demonstrate that deliberation does not lead to polarization (Fishkin, 2011; Luskin et al., 2007). In fact, quite the contrary: as is noted by Dryzek (2005), properly designed deliberation can be especially helpful when it comes to resolving highly polarizing issues. Unlike majority vote or other non-deliberative processes, deliberative initiatives can strive to find the best solution, the best compromise that would work for different sides of the debate, and not just for the one that has a majority's support. Such a deliberative approach to democracy can potentially have enormous benefits and help align policy making with people's actual needs, while simultaneously empowering citizens and exposing them to a variety of opinions. In short, deliberation can make the decision-making process less polarizing and more democratic in the sense of representing people's diverse needs (Curato et al., 2017; Landwehr, 2010).

When deliberation is designed properly, it not only improves decision-making processes, but also nurtures people's democratic capacities and civic virtues. Deliberation participants learn how to be more open to other people's perspectives and opinions, and also develop mutual respect – this is especially true if deliberative practice is continuous, since continuous exposure is incredibly important for building civic capacities (Kadlec & Friedman, 2007). Of course, there are also other ways in which deliberation can affect citizens, and even though the ideal of deliberation is not coercive, it is impossible to completely neutralize all power dynamics that might arise in deliberative practice. Nevertheless, with proper structure and process design, organizers of deliberative initiatives can strive to minimize these power dynamics, and maximize the many values and benefits that deliberation offers (Kadlec & Friedman, 2007; Mansbridge et al., 2010).

To summarize, deliberation is an ideal that is essential to democracy. It presupposes inclusion of all relevant and affected perspectives in the process of decision-making, and, when properly designed, deliberation can help find solutions and policies that are more responsive to people's needs and interests, while simultaneously encouraging better informed decisions on the citizens' side. Deliberative practices can also serve as a way to resolve particularly polarizing and debated issues. Moreover, citizens who participate in deliberation can feel more empowered through gaining a potentially more direct influence over political decision-making (Curato et al., 2017). In addition, they learn to become more respectful, reflective and open toward other people's perspectives and viewpoints, especially if deliberative practice is continuous and is not a one-time event. Still, as it was already pointed out, to activate these potential benefits of deliberation and actually advance democratic practices in accordance with the deliberative ideal, the design of deliberative initiatives is absolutely vital (Florida, 2017). The question that I am addressing in this paper is whether deliberation in the digital format can have any advantages over non-digital processes. To answer this question, I now turn to the next section about the enhancement of deliberation through digitalization.

### 3 Can DDIs Enhance Deliberation?

The literature on DDIs suffers from a lack of discussion around the democratic values that underpin them. Smith (2019b, p. 578) highlights the following:

Although a great deal of sophisticated innovation has emerged in the digital realm, it has been accompanied by little sophisticated reflection on its democratic qualities. Digital innovations are likely to disrupt our categories of analysis, developed primarily through familiarity with face-to-face forms of engagement.

But the democratic qualities and values of DDIs are critical to consider. According to Bernholz et al. (2021), democratic values can, potentially, help us create and design digital democratic tools that would facilitate and increase citizen participation in political life, cultivate informed political debate and decision-making, and allow people to find and pursue collective goods with more ease.

One such value to take into account in relation to DDIs is the democratic ideal of deliberation. Deliberation is essential since, as was explained in the previous section, it is a crucial democratic value that allows citizens to not only have more influence on political life, but also to be more involved in the process of discussions prior to an actual decision-making moment (Dryzek, 2005; Goodin & Dryzek, 2006; Habermas, 1996; Landemore, 2013, 2020; Przybylska, 2021). A deliberative approach to democracy can potentially have enormous benefits and help align policy making with people's needs, while simultaneously empowering citizens, nurturing their civic capacities and exposing them to a variety of perspectives. The question is, though: does online deliberation have any added value when compared to non-digital practices? I will attempt to answer this question by analyzing three features

that could, arguably, help to enhance deliberation via digital means, namely: scale, transparency and, finally, equality in deliberation.

### 3.1 Scale of Deliberation in DDIs

The argument of scale is one of the most emphasized and popular ones when it comes to the discussion of deliberation in DDIs and is therefore essential to address. Many researchers are convinced that, if designed properly, digital tools could allow us to scale up deliberation to a level that would be simply unfeasible in a normal, non-digital setting. This view is based on the fact that citizen participation through digital tools would be easier to organize, as it would be less costly and would require less effort from the public's side than being physically present at some forum or public consultation (Landemore, 2021; Neblo et al., 2010; Steiner, 2012). Moreover, if people deliberate digitally, then it is possible to have many more people contributing to the deliberation simultaneously – arguably, thousands of people could engage in a deliberative discussion (Klein, 2007, 2012).

Yet, the question arises of how such digital deliberation could be structured. It is quite clear that it would be impossible to conduct deliberation among hundreds and thousands of people in the format that is usual for smaller and/or non-digital deliberative practices. Allocating speaking time, proposing arguments and critically engaging with the arguments of others would have to take on a different shape in the digital realm if the idea is to engage as many people as possible (or even open up deliberation to the whole community in question).

One of the formats proposed for digital deliberation is the concept of so-called “Mass Online Deliberation” (MOD) developed by Velikanov, which is also closely related to the idea of argument maps (Hilbert, 2009; Klein, 2007; Spada & Klein, 2015; Velikanov, 2012; Velikanov & Prosser, 2017). The idea is that people make their proposals through text, and an AI system then clusters those proposals together into a sort of argument map which visualizes the current state of discussion, helping users navigate through contributions already made by other people (Hilbert, 2009; Spada & Klein, 2015; Velikanov & Prosser, 2017). The hope is that such a system could structure and integrate massive amounts of online contributions into a coherent common will regarding an issue in question (Hilbert, 2009, p. 93).

There are a number of issues that come with this model, the first and the most obvious one being that of inclusiveness and representativeness (Landemore, 2022; Landwehr, 2010). If the aim of digitizing deliberation is to achieve mass scale participation, it would most likely imply that participation is open to all people in a relevant community (be it a local, national or even international level). The question then remains – what kind of citizens would get involved? If no special sampling or recruitment practices are in place, the chance is high that it would be mostly already politically active, educated citizens who would get engaged. Marginalized and vulnerable groups are thus further excluded. All deliberative practices, including non-digital ones, face this issue when it comes to participants' self-selection, but digitalization can potentially exacerbate the problem because of factors such as the digital divide between younger and older people or the lack of access to technologies

among some segments of society (Norris, 2001). In other words, self-selected participants may not be representative of the target population, and not all the variety of perspectives and opinions would be present (while having a diversity of relevant perspectives is part of the deliberative ideal). When it comes to mass scale online deliberation open to all, we do not have empirical evidence on whether marginalized groups participate in sufficient numbers, even though some academics argue that those groups are willing to deliberate (Neblo et al., 2010; Steiner, 2012).

We do have examples of digital platforms that come very close to the MOD model of online deliberation and manage to engage a large amount of people – for instance, the platform *Pol.Is* in Taiwan, which allows users to arrive at a consensus on a certain issue through drawing an argument map based on the crowd's written input (Hänggli et al., 2021). However, even though the platform has been rather successful in advancing mass participation and generating a kind of consensus on a number of complex issues, it is still unclear what kind of people actually got involved and which segments of the population were excluded, so the question of representativeness and inclusiveness remains open. Of course, it is possible to argue that aiming for participation of absolutely everyone is unrealistic and unnecessary – after all, when it comes to voting or referendums, the goal is not to have every single person participate, but simply a sufficient number of people (Landemore, 2022). But even if digital deliberation establishes a certain threshold on the number of citizens needed, participation based purely on self-selection would still be biased and would likely not live up to the deliberative ideal (Landwehr, 2010).

Finally, another major problem that comes with these formats of digital deliberation through argument maps and clustering is the fact that, to become feasible, such a system requires a certain level of simplification. Scaling up deliberation to make it possible for thousands of people to participate would necessarily imply simplifying the deliberation process, as it is done, for example, in the already mentioned Taiwanese experiment with *Pol.Is*. On this platform, people can vote in favor of or against proposals made by others, but they cannot respond to those proposals directly – instead, they can make their own proposals, which then get clustered into an argument map visible to all users. Such a system makes the points of disagreement visible, and thus motivates people to generate new proposals that would strive for a compromise between different clusters, which eventually leads to some form of consensus. Even though this structure might allow for an arguably effective decision-making (or proposal generation) process, it lacks the qualities that would make citizen engagement truly deliberative.

In argument maps and mass online deliberation models, people seem to be engaging with arguments and issues only on a rather superficial level; there is no true exchange of diverse perspectives and back-and-forth reasoning (Landemore, 2022). Meanwhile, this is one of the main values of deliberation – it consists of citizens exchanging diverse perspectives, becoming more open to others' views and building up civic capacities. This crucial value is lost when we attempt to scale up deliberation to mass levels via digital means such as argument maps. Thus, even though DDIs can potentially help with scaling up general citizen participation and even with making decision-making processes more effective, DDIs that attempt to specifically scale up deliberation often end up simplifying it.

Of course, despite these limitations, it is possible to imagine that scaling up could still be very beneficial for inclusiveness, even if it leads to a certain simplification of discussions. But there needs to be an awareness of what scaling up can and cannot do for deliberation. At this current stage, it is clear that the challenges that scaling up faces might actually affect the deliberative quality of discussions. Therefore, scaling up cannot be the main motivation for resorting to online deliberation.

### 3.2 Transparency of Deliberation in DDIs

Another argument related to the benefits of deliberation via digital means has to do with transparency and access to information. Transparency, alongside deliberation, is one of the key democratic principles (Landemore, 2020). It implies a feedback loop between decision-makers and citizens, meaning that decision-makers have access to citizens' input, while citizens possess enough information to form opinions about political processes and have the power to influence the agenda and political debate surrounding certain issues (Landemore, 2020, p. 143).

Specifically with regards to digital deliberation, transparency of the deliberative process would, in many ways, presuppose transparency of the design of DDIs, as well as of the decision-making process. Transparency in deliberation should serve as a kind of accountability mechanism that contributes to better democratic practices. Basically, it should ensure that both decision-makers and citizens clearly understand how recommendations are being formed, what the goal of deliberation is, and, if citizens' recommendations are rejected, it should be explicitly explained why that is the case. All the information relevant for deliberation and the problem at stake should be easily available for citizens, with an opportunity for them to voice their concerns and suggest new topics. If a deliberative process with such features of transparency is continuous – it helps to nurture citizens' civic capacities as well as to contribute to more responsive government practices (Migchelbrink and Van de Walle, 2019; Yang, 2006).

Digital tools could be very useful in making information for deliberative processes more accessible and transparent. A digital platform could combine all the necessary resources in one place and provide citizens with a comprehensive overview of the debate, as well as with necessary information and user-friendly tools for deliberation and participation. Online spaces provide opportunities to present and share information in more digestible, illustrative and comprehensive ways (e.g., videos, reports, graphs), making DDIs a valuable asset to deliberation. Meanwhile, participants in non-digital deliberative initiatives are usually required to spend much more effort, resources and time in order to get access to relevant information. Thus, if a digital deliberation platform is designed properly and is user-friendly and engaging, this could contribute significantly to transparency. User-friendliness is especially important here, since simply making information available online does not automatically make it transparent – it is imperative that digital resources are easy to navigate (Berg et al., 2021; Heller, 2011).

Digital deliberation could also, potentially, increase not only the internal transparency of the participatory process, but also external transparency and public visibility

— something that is currently a concern with many deliberative practices, as they do not always have good outreach with the general public and the media. For example, digitalization could create a possibility to open up online deliberation processes to all citizens who simply wish to observe them. This, perhaps, would motivate these observing citizens to actually take part in deliberations in the future, therefore developing the wider public's interest in political agenda and civic participation (Przybylska, 2017, 2021). Moreover, such public transparency would also give the wider public, as well as civil servants and decision-makers, an opportunity to witness how the deliberation process functions and why it is valuable.

Nevertheless, even if DDI platforms are transparent both in terms of internal processes and public visibility, it does not mean that this digital transparency enhances the quality of deliberation itself. In other words, even though transparency is valuable from an overall democratic perspective, it is not necessarily sufficient to enhance the deliberative process. Therefore, even if transparency is something that might be seen as an argument to transfer deliberation to the digital sphere, the reason for that is not necessarily enhancing deliberative practices, but rather supporting democratic resources around it.

Moreover, despite all its benefits and the fact that some level of transparency is essential for building trust between deliberants, citizens and decision-makers, transparency is also something that can have adverse effects. To start with, there is a concern over the privacy and security of the personal data of DDI users. Since the idea is that deliberation through DDIs would engage citizens with diverse backgrounds and perspectives, it is unavoidable that some personal information from participants will be required. Platform users would most likely need to be verified to avoid the issue of fake identities and bots, and in some cases, it might be necessary to know participants' demographic data in order to select a sufficiently diverse sample of people to discuss a particular issue (this would be different in the case of participants' self-selection, which has its own downsides, as we discussed in the previous section) (Ford, 2021). Giving up personal data is problematic in and of itself, as there is a risk of a platform misusing users' data by, for instance, selling it to third parties or sharing it with the government for surveillance purposes (Van Dijck, 2014).

Vulnerable personal data would also include recording of citizens' sensitive political opinions. Arguably, this might lead to self-censorship and less engagement with the platform, since people would be more careful with what opinions they express online, which could potentially hinder the quality of deliberation (Rhee & Kim, 2009). This is especially the case if participation is not anonymized, and participants have to disclose identifiable data (Gonçalves et al., 2020). On the other hand, deanonymity (non-anonymous participation) does not necessarily mean people would not say what they think. Some researchers argue that deanonymity and transparency simply might encourage people to be more civil and respectful with each other (and not necessarily less open), while anonymity, on the contrary, might cause inflammatory, disrespectful and less constructive comments, even though the evidence about this is mixed (Coleman & Moss, 2012; Kennedy et al., 2021; Shortall et al., 2022b). In either case, whether participation is anonymized or not, political opinions are still

recorded in one way or another, and the traceability of those to specific individuals might raise privacy concerns.

Even if we assume that private details and opinions of DDI users would be, to some extent, protected under regulations like the EU's GDPR, the problem remains that most of the current deliberation platforms are usually designed in a way that ties them to one centralized server. This makes these types of platforms and their users vulnerable – in case of a breach, the entire deliberation process could be easily compromised, not to mention that a single server system would also grant a significant power to whoever manages that server in the first place. That entity would essentially be able to exercise control or pull the plug on the entire democratic process (Ford, 2021).

There are some ideas in the world of technologies about how DDIs could be built in a decentralized way, so that the servers are not as vulnerable and so that users could, for instance, verify their identity on the platform while staying anonymous and/or their data and opinions not being easily traceable (e.g., through blockchain technology), but those are still under development and have not been tried out much in practice. Thus, many more experiments would be needed before it could be claimed that privacy and security concerns are adequately addressed (Ford, 2021, p. 279).

To summarize, the transparency possibilities of DDIs can be extremely valuable, and they can greatly enhance the information systems surrounding deliberative processes. However, transparency through DDIs does entail privacy and security risks, especially when one considers how many of the current platforms have been designed (Ford, 2021). It can be argued that these risks are being addressed, and more and more ideas are emerging about how to create secure DDIs, and therefore these concerns should not stop us from considering digital technologies for deliberation and citizen participation purposes. Still, it does imply that, right now, transparency brought about by DDIs has its downsides. This in no way means that the potential of increased transparency in DDIs should not be explored further – transparency can be very beneficial for the processes surrounding deliberation (e.g., sharing useful information, results, etc.). However, this still leaves us with the question of whether there is any other way in which digital tools could enhance the quality of intrinsic deliberative practices and processes. In the next subsection, I will examine the principle of equality in deliberation as a basic democratic value that can be facilitated via DDIs.

### 3.3 Equality of Deliberation in DDIs

In this section, I reflect on how DDIs could potentially contribute to equality in deliberation. Equality is a basic democratic value central to any discussions about democracy and its advancement, yet it is not always emphasized when it comes to deliberation and democratic innovations. I believe that the facilitation of equality deserves specific attention when it comes to developing deliberative DDIs. However, before considering the potential of DDIs in facilitating equality, it is important to answer the following question: what exactly does equality in deliberation imply?

To begin with, as discussed by Sen (1995), even though equality is considered a basic democratic value, it is not explainable in and of itself – if we say that people are treated equally, it always implies equal treatment in a specific domain (e.g., income, opportunities, etc.). In other words, equality is always an equality of something in particular. I would like to focus on several particular dimensions of equality that I see as important specifically in the context of equality of deliberation. The general literature on equality and what it implies is incredibly broad and complex, and therefore, I simply identify elements of equality, as outlined by some researchers, which I consider relevant for the deliberative ideal and for my argument.

The first vital dimension of equality is equality of consideration. Equality of consideration can be broadly defined as a value which implies that all participants of the deliberative process and their diverse perspectives are equally considered and treated in the same manner, regardless of participants' position and social status outside of this process (Abdullah et al., 2016; Beauvais & Baechtiger, 2016; Mansbridge et al., 2010; Sen, 1995). Such equality also, evidently, implies a certain neutrality – whoever manages, organizes or facilitates the deliberative process should not be biased toward participants and their views.

Anderson's (1999) conception of equality adds another dimension that is relevant for deliberation. Equality should advocate for access to equal citizenship, meaning that citizens should have capabilities to stand as political equals and should justify their views and actions through arguments acceptable to others (Anderson, 1999, pp. 314, 319). Additionally, the third dimension of equality in deliberation should also establish the requirement for freedom from domination or oppression by others, which is highly necessary in the deliberative ideal – participants should be able to express their opinions safely, without the pressure to support a particular viewpoint and without their own views being undermined and disregarded (Anderson, 1999).

Finally, I would argue that in a deliberative context, democratic equality does, ideally, also presuppose equity, or the value of inclusiveness of diverse and relevant perspectives, alongside with, when necessary, a special attention to some vulnerable groups in order for them to have an equal opportunity for input (Abdullah et al., 2016; Beauvais, 2018). The democratic deliberative ideal strives for plurality and establishes that all groups affected by an issue in question should be included in deliberation, and therefore there cannot be true deliberative equality if there is no inclusiveness of these groups and their various standpoints (Abdullah et al., 2016; Beauvais, 2018; O'Flynn, 2007).

In summary, the democratic value of equality with regards to the deliberative ideal should include the following dimensions: to start with, opinions expressed by citizens should be given equal and impartial consideration. Citizens participating in deliberation should also stand as political equals and have equal capabilities to express their views within a deliberative process. Furthermore, there should be no dynamics of oppression or domination that could prevent participants from openly communicating their points or could coerce them to express a certain view because they feel some kind of pressure to support it (Abdullah et al., 2016; Anderson, 1999; Beauvais, 2018; O'Flynn, 2007; Sen, 1995). Finally, marginalized and vulnerable groups should be included in such a way as to not be disadvantaged by other interest groups that might normally be more dominant: this might imply some

disproportionate oversampling of minorities, as one example (Abdullah et al., 2016; Beauvais, 2018; O'Flynn, 2007). These dimensions of equality are crucial and relevant for the democratic practice of deliberation, and yet they are rarely put at the forefront when it comes to DDIs.

So, how could DDIs enhance democratic equality? I claim that, to begin with, digital tools could be extremely valuable in facilitating and moderating discussions in a truly equal way that is unachievable when you use human facilitators and moderators. Facilitation in deliberation can be defined as structures and interventions that set the rules for communication and discussion in alignment with the deliberative ideal (Carcasson & Sprain, 2016; Dillard, 2013; Moore, 2012). Facilitators should, ideally, be neutral, in accordance with equality of consideration, and they should enable participants to engage in deliberation in an equal, meaningful and effective way – for instance, they must ensure that nobody dominates the discussion and that all participants have an opportunity to express themselves and their views, and have equal speaking time (Black et al., 2011; Epstein & Leshed, 2016; Moore, 2012; Park, 2012; Ryfe, 2006; Trénel, 2009).

There is increasing evidence that the use of human moderators and facilitators in deliberative discussions can influence the views of participants and the general dynamics of deliberation. In other words, facilitators in such settings possess coercive power (Dillard, 2013; Mansbridge et al., 2010; Park, 2012; Spada & Vreeland, 2013). Of course, the state in which coercive power (including between participants) would be absent entirely is unachievable, and some coercion is even necessary to ensure an equal discussion and to keep order. But facilitators should not affect the actual views of participants, and we should strive to minimize coercive power as much as possible, using the minimization of coercive power as a regulative ideal to measure deliberative practice (Curato et al., 2017; Mansbridge et al., 2010; Spada & Vreeland, 2013).

Studies conducted by Spada and Vreeland (2013), Park (2012) and Dillard (2013) clearly demonstrate that, especially under certain conditions, human facilitators can have a significant influence on the views and behaviors of deliberation participants. Such influence can be exercised by facilitators through either expressing a preference toward or undermining a certain opinion, thus violating equality of consideration. This is especially true if a facilitator is perceived by citizens as an expert on the issue in question (Park, 2012). To add to this, even when facilitators have no special expertise on the problem, they can still have a substantial effect on deliberation. For instance, the experiment by Spada and Vreeland (2013) among students of a political science class shows that, when facilitators do intervene in the deliberative process by expressing specific views, their influence has a statistically significant effect on the expressed opinions/preferences of participants; in other words – they have significant coercive power.

It is possible to argue that recruiting truly neutral facilitators who would make a special effort to not exercise their power would solve the problem, and there is proof that the use of neutral facilitators increases perceptions of fairness of the process among participants. But the reality is that in many real-life deliberative initiatives, truly neutral human facilitators are rarely recruited. Partly because of the costs of such employment, facilitators are quite often selected from the members of the local

community, or they are volunteers from that community. This means that, even if provided with some training (which is also often not the case), these people unavoidably have viewpoints on the issues in question and their own interest in the outcomes of deliberative discussion (Spada & Vreeland, 2013, p. 3). Therefore, we cannot fully rely on human facilitators to guarantee equality in deliberation.

This is where digital tools and AI can come in and assist us in designing mechanisms that would help secure a more equal and impartial deliberation process, where participants and their viewpoints are better protected against domination. Unlike human facilitators, digital tools designed by independent specialists do not have a personal stake or interest in the debate. Of course, disposing of human facilitators entirely would be difficult (and undesirable), but digital technologies could definitely provide additional checks and balances and improve the quality of facilitation for the debates. It could naturally be argued that designing such a tool would be a costly investment, but, if we talk about cases where a DDI is already being implemented and deliberation is from the beginning intended to take place digitally, then it makes total sense to invest in such a DDI that would, among other things, provide facilitation mechanisms for deliberation.

An AI system of a potential DDI could be designed in such a way that would enhance equality of deliberation by, for instance, keeping track of the speaking time for all participants and, therefore, preventing certain individuals from dominating the debate. This is especially important since there is evidence that in many deliberative initiatives there is a trend of vulnerable groups being undermined. For example, gender inequality is one of such instances – it is known that women in deliberative contexts often tend to speak less than men, since group dynamics that form do not allow women to express themselves as freely and openly. Men end up with more speaking time, they are usually the ones dominating the discussion, and are perceived as having more authority in a group, unless women are oversampled or other mitigating steps are taken (Karpowitz & Mendelberg, 2014; Karpowitz et al., 2012). Likewise, apart from women, other vulnerable groups are also often sidelined and excluded from deliberative contexts, as demonstrated by Wojciechowska (2019) in her article on intersectionality in democratic innovations.

Digital facilitation of deliberative practices could help mitigate these common dynamics of domination. Whereas for human facilitators it can be difficult to properly control the speaking time of participants (since they would likely feel like they cannot simply interrupt somebody who is in the middle of explaining themselves), regulating speaking time with technology would be much more easy and straightforward – people would know in advance and be able to observe how much time they have for expressing their viewpoint, and therefore they would not be able to dominate the discussion by speaking overtime or interrupting others. This would allow for women and other vulnerable groups to express themselves more freely in a safe, more equal, and neutral environment.

It goes without saying that keeping track of speaking time might not be enough to give proper attention to vulnerable groups, and additional intervention might be needed to make their opinions heard. In these instances, AI would still be helpful not as a replacement of human facilitator, but as an assistance tool. It would relieve the human facilitator of the burden of managing the entire discussion and time-keeping.

Human facilitators could then concentrate on other tasks and put more of their effort into cases that would further enhance equality and equity. For instance, if it becomes evident that a certain marginalized individual or group might need some support (such as extra time) or encouragement to formulate their point and make it heard, a human facilitator would intervene, and otherwise they would focus on simply monitoring the discussion process, while digital tools assist with more mundane tasks.

AI-assisted DDIs could include content moderation, especially if deliberation is text-based (although it might, arguably, be possible with voice technology as well, which is now rapidly developing). Insults, threats or other aggressive rhetoric could be flagged by the digital system, and then either automatically removed or reported further to a supervisor – after all, such content moderation mechanisms are already widely employed by social media platforms, so there is no reason why they should not be tried out in DDIs (Landmore, 2022). Content moderation would also help to contribute to an environment where all users are treated as political equals and safeguarded against oppressive dynamics. Moreover, some elaborate AI systems are able to provide quite good summaries of what has been said/written. This could be an additional asset which would provide an opportunity to keep track of how the debate is going and which arguments were put forward. For instance, AI could summarize previous discussion points to help both participants and the human facilitator to navigate deliberation process with more ease, or it could even create argument maps which would visualize the discussion.

Still, the question can be raised: how would DDIs aid the inclusiveness and equity aspect of equality, in other words – how to further ensure an equal participation of members of vulnerable, marginalized groups, so that they have a chance to properly express themselves and are not sidelined by others? After all, even if digital facilitation and allocation of equal speaking time can go a long way, it might not be enough, as was already mentioned. A partial answer to this could be that, as some studies have shown, people actually feel more free to express their own viewpoints in online spaces rather than face-to-face, and they are also more comfortable with discussing political disagreements (Rains, 2005; Stromer-Galley, 2003). Therefore, digital deliberation could allow members of vulnerable groups to be more outspoken and to have more influence on discussion. Content moderation and potential summaries of discussion by an AI would also contribute to this, since it would create a safer environment and also help vulnerable individuals (as well as other participants) to keep track of arguments. Furthermore, as stated previously, even considering that we cannot fully rely on AI and human intervention is still necessary, digital tools would still make the task of any potential facilitator much easier and more manageable. Instead of having to keep track of all the details (such as not allowing interruptions and rudeness, measuring speaking time, summarizing arguments), human facilitators could concentrate on simply keeping an oversight over technology and ensuring equity, inclusiveness and special intervention, when necessary.

AI tools could also be used for the recruitment of participants if you have an online pool of people to select from. Algorithms could be used as a way to increase inclusiveness and ensure that marginalized groups are sufficiently represented, depending on the problem under discussion and the goals of deliberation. In some cases, that might imply, for example, oversampling of a certain group (e.g., women),

and there is empirical evidence that using certain software can help increase gender inclusiveness (Vorvoreanu et al., 2019). It is also crucial that for some vulnerable groups deliberation via the digital means might provide easier access to deliberation – think of people in more remote areas, people with mobility issues or other people that simply would not have time to take part in an in-person deliberation. In this manner, DDIs could make the recruitment process, as well as participation, easier and more inclusive. Digital tools and AI assistance could help improve the dimension of equality and equity in deliberation, which requires inclusiveness and sufficient representation of all relevant and diverse perspectives.

Despite its potential, the limits of AI must be acknowledged and taken into account by any designer or organizer of a DDI initiative. Many researchers have rightly pointed out that AI is not a neutral tool (Crawford, 2021). AI systems are developed by people with their own biases which often find their way into the development process, and AI also learns from the biases incorporated into the data that it is trained on (Crawford, 2021; Ekstrand & Kluver, 2021; Ekstrand et al., 2019; Shortall et al., 2022b). In addition, developers of AI and digital software typically belong to more powerful demographic groups – they are often relatively young, white, educated males, which creates an additional layer of potential biases and non-inclusive tendencies that might affect digital tools (Shortall et al., 2022a; Wojciechowska, 2019). Even when the platform or tool position themselves as neutral, in reality, they are quite often biased against certain groups, or help to serve certain interests (Floridi et al., 2018; Pasquale, 2015, 2016).

This is exactly the reason why I argue that AI facilitation should not be seen as a replacement for humans, but as an assistant tool that would make the job of human facilitators easier by taking over certain tasks from them. Replacing human facilitators with digital moderation would be undesirable not only because of feasibility issues and AI biases, but also because empirical research shows that people tend to prefer moderation that includes human intervention (Gorwa et al., 2020; Ozanne et al., 2022; Wojcieszak et al., 2021). As was already mentioned, human facilitators are sensitive to contextual nuances and human dynamics that AI is unable to recognize, and these nuances are very important in deliberation, especially if we think about marginalized and vulnerable groups (Alnemr, 2020).

In order to further combat potential biases of AI, other strategies can be implemented. For instance, any AI tool that is planned for use in deliberative citizen participation should be designed and scrutinized with democratic values in mind from the start. Ultimately, AI tools should not only be functional, but they should be created with the goal of advancing democratic values such as equality. In order to make that possible, the practices of involving marginalized and vulnerable groups in the design could be implemented. By co-designing the platform and digital tools with members of the relevant community and citizens from vulnerable groups, DDIs and related AI tools could become more aligned with democratic principles (Allegretti, 2021). Other strategies to create democratic AI can also be envisaged. It is possible to imagine certain evaluative/ethical committees that could help to ensure that AI is aligned with democratic values. It is also necessary to continuously study AI implementation and its interaction with people, including (and especially) in participatory and deliberative processes (Floridi et al., 2018; Matias, 2023). More research should

be conducted on this topic, as we are currently still at the beginning of this journey. Even so – AI facilitation combined with human one can be beneficial for advancing equality, and therefore challenges should not prevent researchers and practitioners from attempting to implement it. The more these practices are implemented and studied critically, the easier it will be to combat their weaknesses, which can now be counterbalanced by combining AI facilitation with human facilitation.

In summary, arguments presented in this section demonstrate that, despite their limitations, DDIs and AI moderation tools have the potential to contribute to a more equal deliberation. They can facilitate deliberative discussion in a more neutral fashion, and to minimize the effect of power dynamics. Facilitation with digital tools can also encompass automated content moderation of participants' contributions (Landemore, 2022). Even though human facilitation is still necessary – AI tools could help make the job of human facilitators much easier. Furthermore, digital deliberation could possibly enable citizens from vulnerable groups to be more comfortable with speaking up and provide them easier access to participation (Rains, 2005; Stromer-Galley, 2003). Recruitment practices could also become more accessible via digital means – DDIs could contribute to a more convenient recruitment of necessary samples of participants. Thus, equality in deliberation could be significantly enhanced through DDIs, and therefore it is worth exploring this benefit of DDIs further. Equality is a vital democratic principle in and of itself, but it is also instrumental to the democratic value of deliberation. Therefore, it deserves more attention in regard to innovative democratic practices and, specifically, DDIs. If digital technology could help us advance the value of equality, and therefore potentially advance democracy – such a possibility is definitely worth exploring, even if it comes with its own challenges.

## 4 Conclusion

In this paper, I have analyzed arguments in support of transferring deliberative participatory initiatives into the digital sphere. I started by outlining the importance of DDIs for modern developments of democracy. I then also explained what deliberation is, and why deliberation is an essential democratic value that should be considered when it comes to DDIs. I then went on to discuss whether the process of deliberation could be enhanced with the assistance of digital tools.

The first argument in support of digital deliberation that I engaged with was the argument of scale. Even though digital tools could indeed help us scale up citizen participation via such means as argument maps and mass online deliberation techniques, I emphasized that scaling up, in this case, not only comes with problems of inclusiveness, but also inevitably leads to the simplification of the deliberative process itself and to a more superficial engagement with the arguments. (Hilbert, 2009; Klein, 2007, 2012; Landemore, 2022; Landwehr, 2010; Spada & Klein, 2015). Therefore, even if scaling up can be useful in certain instances, it often also leads to a certain loss of deliberation benefits. This does not imply that digital scaling up has no useful potential, but it does mean that when we think about deliberative processes and their benefits, we should be critical of scale as the main motivation behind digitalizing those processes.

The second argument was that of transparency of deliberation done through DDIs. It is true that online tools can provide easier communication of and access to necessary information (such as materials on the topic, deliberation outcomes, etc.) for both participants and organizers of deliberation. What is more, DDIs could also make deliberations more publicly visible by providing non-participating citizens an opportunity to easily observe deliberations and get an overview of their results, therefore potentially also encouraging these citizens to also join deliberative initiatives in the future (Berg et al., 2021; Heller, 2011; Przybylska, 2017; Yang, 2006). Overall, digital transparency could be useful in supporting a lot of the processes surrounding deliberation. Still, deliberation through DDIs also comes with significant privacy and security risks, since sensitive information about participants would be stored on the platform (Ford, 2021; Gonçalves et al., 2020; Van Dijk, 2014). Though these risks can be mitigated by new technological developments (e.g., blockchain), more experience and research should definitely be done on implementing these new solutions in the realm of DDIs, which also sketches a new important line of research (Ford, 2021).

Finally, I looked at the potential of DDIs to enhance equality in deliberation. I emphasized that equality is a basic democratic value that is also intrinsically important for deliberation, and therefore I argued that it deserves specific attention when we engage with the topic of deliberative DDIs and their possible benefits and downsides. I outlined relevant dimensions of equality, and I demonstrated that digital technologies could indeed be helpful in enhancing this value. To start with, they could help facilitate deliberative discussions in a more neutral way, counterbalancing some issues related to human facilitators, who can be biased and can at times affect deliberation process with coercive power (Spada & Vreeland, 2013). Even if abandoning human facilitation completely is neither desirable nor possible, digital tools could assist human facilitators immensely by taking away the burden of a variety of tasks and helping to preserve neutrality. Digital tools could make sure that citizens are allocated equal speaking time and are not disrupting other participants, therefore neutralizing dynamics of domination and oppression. Additionally, an AI solution could assist with content moderation and providing useful summaries of discussions and arguments (Landemore, 2022). Deliberation via DDIs could also be beneficial for the inclusion of marginalized and vulnerable groups – thanks to a lack of interruptions and neutral facilitation, vulnerable individuals might be more free to express themselves and their perspectives (Rains, 2005; Stromer-Galley, 2003; Stromer-Galley et al., 2012). Moreover, in terms of inclusiveness, it can also be easier for some vulnerable groups to join deliberations online, rather than spend their time and limited resources on joining in person. Lastly, recruitment and sampling of sufficiently diverse groups of participants for deliberation could also be made more convenient with the assistance of DDIs, which would also contribute to a better quality deliberation.

Questions that could be addressed by further research may include, but are not limited to, reflections on what methods could be employed to ensure AI facilitation in deliberation is up to democratic standards, how we could further ensure that DDIs are inclusive (and not only in their internal processes, but also in their outreach), investigations on the ecosystems of DDIs and the contextual factors which are beneficial for their development; and adequate responses to the digital divide.

Our societies still tend to move toward more, rather than less, digitalization. Therefore, the question of deliberation with DDIs is not a question of whether it should develop – because, with more and more digital initiatives being tried out, it unavoidably will. It is a question of trying to understand how deliberation with digital tools should be organized and which elements of deliberation technologies could actually enhance and support best. There is also no implication that practices of non-digital deliberation should be abandoned in favor of complete digitalization or that the two systems (digital and non-digital) cannot coexist, but it is important to understand the potential strengths, as well as pitfalls, of deliberative DDIs (Elstub and Escobar, 2019). Of course, as was mentioned, much more thinking and research into the concrete practices of digital deliberation is needed, but this paper contributes to our understanding of what elements of deliberating through DDIs deserve special attention and how they can help us advance democracy and democratic values further.

**Abbreviations** DDIs: Digital Democratic Innovations; DIs: Democratic Innovations

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## References

- Abdullah, C., Karpowitz, C. F., & Raphael, C. (2016). Equality and Equity in Deliberation: Introduction to the Special Issue. *Journal of Deliberative Democracy*, 12(2), Article 2. <https://doi.org/10.16997/jdd.253>
- Allegretti, G. (2021). Common patterns in coping with under-representation in participatory processes: evidence from a mutual learning space for portuguese local authorities (LAs). *Innovation: The European Journal of Social Science Research*, 34(5), 729–765. <https://doi.org/10.1080/13511610.2021.1997573>
- Alnemr, N. (2020). Emancipation cannot be programmed: Blind spots of algorithmic facilitation in online deliberation. *Contemporary Politics*, 26(5), 531–552. <https://doi.org/10.1080/13569775.2020.1791306>
- Anderson, E. S. (1999). What Is the Point of Equality? *Ethics*, 109(2), 287–337. <https://doi.org/10.1086/233897>
- Bagg, S. (2018). Can deliberation neutralise power? *European Journal of Political Theory*, 17(3), 257–279. <https://doi.org/10.1177/1474885115610542>
- Beauvais, E., & Baechtiger, A. (2016). Taking the Goals of Deliberation Seriously: A Differentiated View on Equality and Equity in Deliberative Designs and Processes. *Journal of Deliberative Democracy*, 12(2), Article 2. <https://doi.org/10.16997/jdd.254>
- Beauvais, E. (2018). Deliberation and Equality. In A. Bächtiger, J. S. Dryzek, J. Mansbridge, & M. Warren (Eds.), *The Oxford Handbook of Deliberative Democracy* (pp. 143–155). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780198747369.013.32>
- Berg, J., Lindholm, J., & Högväg, J. (2021). How do we know that it works? Designing a digital democratic innovation with the help of user-centered design. *Information Polity*, 26(3), 221–235. <https://doi.org/10.3233/IP-200282>
- Bernholz, L., Landemore, H., & Reich, R. (Eds.). (2021). *Digital Technology and Democratic Theory*. University of Chicago Press. <http://ebookcentral.proquest.com/lib/rug/detail.action?docID=6460481>
- Black, L., Burkhalter, S., Gastil, J., & Stromer-Galley, J. (2011). Methods for analyzing and measuring group deliberation. In *The Sourcebook for Political Communication Research: Methods, Measures, and Analytical Techniques* (pp. 323–345). <https://doi.org/10.4324/9780203938669>
- Bohman, J. (2004). Expanding dialogue: the internet, the public sphere and prospects for transnational democracy. *The Sociological Review*, 52(1\_suppl), 131–155. <https://doi.org/10.1111/j.1467-954X.2004.00477.x>
- Carcasson, M., & Sprain, L. (2016). Beyond problem solving: reconceptualizing the work of public deliberation as deliberative inquiry. *Communication Theory*, 26(1), 41–63. <https://doi.org/10.1111/comt.12055>
- Cohen, J., & Fung, A. (2021). Democracy and the Digital Public Sphere. In L. Bernholz, H. Landemore, & R. Reich (Eds.), *Digital Technology and Democratic Theory* (p. 39). University of Chicago Press. <http://ebookcentral.proquest.com/lib/rug/detail.action?docID=6460481>
- Cohen, J. (1989). Deliberation and Democratic Legitimacy. In D. Matravers & J. E. Pike (Eds.), *Debates in Contemporary Political Philosophy: An Anthology*. Routledge, in Association with the Open University.
- Coleman, S., & Moss, G. (2012). Under Construction: The Field of Online Deliberation Research. *Journal of Information Technology and Politics*, 9(1), 1–15. <https://doi.org/10.1080/19331681.2011.635957>
- Crawford, K. (2021). The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence. *Yale University Press*. <https://doi.org/10.2307/j.ctv1ghv45t>
- Curato, N., Dryzek, J. S., Ercan, S. A., Hendriks, C. M., & Niemeyer, S. (2017). Twelve Key Findings in Deliberative Democracy Research. *Daedalus*, 146(3), 28–38.
- Dalton, R. J. (2004). Democratic Challenges, Democratic Choices: The Erosion of Political Support in Advanced Industrial Democracies. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199268436.001.0001>
- Dillard, K. N. (2013). Envisioning the Role of Facilitation in Public Deliberation. *Journal of Applied Communication Research*, 41(3), 217–235. <https://doi.org/10.1080/00909882.2013.826813>
- Dryzek, J. S. (2002). *Deliberative Democracy and Beyond: Liberals, Critics*. Oxford University Press.
- Dryzek, J. S. (2005). Deliberative democracy in divided societies: alternatives to agonism and analgesia. *Political Theory*, 33(2), 218–242.
- Ekstrand, M. D., Burke, R., & Diaz, F. (2019). Fairness and discrimination in recommendation and retrieval. *Proceedings of the 13th ACM Conference on Recommender Systems*, 576–577. <https://doi.org/10.1145/3298689.3346964>
- Ekstrand, M. D., & Kluver, D. (2021). Exploring author gender in book rating and recommendation. *User Modeling and User-Adapted Interaction*, 31(3), 377–420. <https://doi.org/10.1007/s11257-020-09284-2>

- Elstub, S., & Escobar, O. (Eds.). (2019). *Handbook of Democratic Innovation and Governance*. Edward Elgar Publishing Ltd. <https://doi.org/10.4337/9781786433862>
- Epstein, D., & Leshed, G. (2016). The Magic Sauce: Practices of Facilitation in Online Policy Deliberation. *Journal of Deliberative Democracy*, 12, 4. <https://doi.org/10.16997/jdd.244>
- Fishkin, J. S. (2011). When the People Speak: Deliberative Democracy and Public Consultation. <https://doi.org/10.1093/acprof:osobl/9780199604432.001.0001>
- Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines*, 28(4), 689–707. <https://doi.org/10.1007/s11023-018-9482-5>
- Florida, A. (2017). *From Participation to Deliberation: A Critical Genealogy of Deliberative Democracy*. ECPR Press.
- Ford, B. (2021). Technologizing Democracy or Democratizing Technology? A Layered- Architecture Perspective on Potentials and Challenges. In L. Bernholz, H. Landemore, & R. Reich (Eds.), *Digital Technology and Democratic Theory*. University of Chicago Press. <https://doi.org/10.7208/chicago/9780226748603.001.0001>
- Gonçalves, F., Prado, A., & Baranauskas, M. (2020). OpenDesign: Analyzing Deliberation and Rationale in an Exploratory Case Study: *Proceedings of the 22nd International Conference on Enterprise Information Systems*, 511–522. <https://doi.org/10.5220/0009385305110522>
- Goodin, R. E., & Dryzek, J. S. (2006). Deliberative impacts: the macro-political uptake of mini-publics. *Politics and Society*, 34(2), 219–244. <https://doi.org/10.1177/0032329206288152>
- Goodin, R. E. (2008). 12 Representing diversity. In R. E. Goodin (Ed.), *Innovating Democracy: Democratic Theory and Practice After the Deliberative Turn* (p. 0). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199547944.003.0012>
- Gorwa, R., Binns, R., & Katzenbach, C. (2020). Algorithmic content moderation: Technical and political challenges in the automation of platform governance. *Big Data and Society*, 7(1), 2053951719897945. <https://doi.org/10.1177/2053951719897945>
- Habermas, J. (1991). *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society (5th or later Edition)*. The MIT Press.
- Habermas, J. (1996). *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy* (W. Rehg, Trans.). MIT Press.
- Hänggli, R., Pournaras, E., & Helbing, D. (2021). Human-centered Democratic Innovations with Digital and Participatory Elements. *DG.O2021: The 22nd Annual International Conference on Digital Government Research*, 227–233. <https://doi.org/10.1145/3463677.3463708>
- Heller, N. (2011). Is Open Data a Good Idea for the Open Government Partnership? *Global Integrity*. <http://staging.globalintegrity.org/2011/09/15/open-data-for-ogp/>
- Hilbert, M. (2009). The Maturing Concept of E-Democracy: From E-Voting and Online Consultations to Democratic Value Out of Jumbled Online Chatter. *Journal of Information Technology and Politics*, 6(2), 87–110. <https://doi.org/10.1080/19331680802715242>
- Kadlec, A., & Friedman, W. (2007). Deliberative Democracy and the Problem of Power. *Journal of Deliberative Democracy*, 3(1), Article 1. <https://doi.org/10.16997/jdd.49>
- Karpowitz, C. F., Mendelberg, T., & Shaker, L. (2012). Gender inequality in deliberative participation. *The American Political Science Review*, 106(3), 533–547.
- Karpowitz, C. F., & Mendelberg, T. (2014). Why Women Don't Speak. In C. F. Karpowitz & T. Mendelberg (Eds.), *The Silent Sex: Gender, Deliberation, and Institutions* (p. 0). Princeton University Press. <https://doi.org/10.23943/princeton/9780691159751.003.0004>
- Karpowitz, C. F., & Raphael, C. (2016). Ideals of Inclusion in Deliberation. *Journal of Deliberative Democracy*, 12(2), Article 2. <https://doi.org/10.16997/jdd.255>
- Kennedy, R., Sokhey, A. E., Abernathy, C., Esterling, K. M., Lazer, D. M., Lee, A., Minozzi, W., & Neblo, M. A. (2021). Demographics and (equal?) voice: assessing participation in online deliberative sessions. *Political Studies*, 69(1), 66–88. <https://doi.org/10.1177/0032321719890805>
- Klein, M. (2012). Enabling large-scale deliberation using attention-mediation metrics. *Computer Supported Cooperative Work (CSCW)*, 21(4–5), 449–473. <https://doi.org/10.1007/s10606-012-9156-4>
- Klein, M. (2007). Achieving Collective Intelligence via Large-Scale On-line Argumentation. *Second International Conference on Internet and Web Applications and Services (ICIW'07)*, 58–58. <https://doi.org/10.1109/ICIW.2007.13>
- Landemore, H. (2013). *Democratic reason: Politics, collective intelligence, and the rule of the many*. Princeton University Press.

- Landemore, H. (2020). *Open Democracy: Reinventing Popular Rule for the Twenty-First Century*. Princeton University Press. <https://doi.org/10.1515/9780691208725>
- Landemore, H. (2021). Open Democracy and Digital Technologies. In L. Bernholz, H. Landemore, & R. Reich (Eds.), *Digital Technology and Democratic Theory* (p. 28). University of Chicago Press. <http://ebookcentral.proquest.com/lib/rug/detail.action?docID=6460481>
- Landemore, H. (2022). *Can AI bring deliberative democracy to the masses?* <https://www.law.nyu.edu/sites/default/files/Helen%20Landemore%20Can%20AI%20bring%20deliberative%20democracy%20to%20the%20masses.pdf>
- Landwehr, C. (2010). Discourse and Coordination: Modes of Interaction and their Roles in Political Decision-Making. *Journal of Political Philosophy*, 18(1), 101–122. <https://doi.org/10.1111/j.1467-9760.2009.00350.x>
- Luskin, R., Fishkin, J., & Hahn, K. (2007). *Consensus and Polarization in Small Group Deliberations*.
- Mansbridge, J., Bohman, J., Chambers, S., Estlund, D., FÅllesdal, A., Fung, A., Lafont, C., Manin, B., & MartÅ, J. (2010). The Place of Self-Interest and the Role of Power in Deliberative Democracy\*. *Journal of Political Philosophy*, 18(1), 64–100. <https://doi.org/10.1111/j.1467-9760.2009.00344.x>
- Matias, J. N. (2023). Humans and algorithms work together—So study them together. *Nature*, 617(7960), 248–251. <https://doi.org/10.1038/d41586-023-01521-z>
- Migchelbrink, K., & Van de Walle, S. (2019). When Will Public Officials Listen? A Vignette Experiment on the Effects of Input Legitimacy on Public Officials' Willingness to Use Public Participation. *Public Administration Review*, 80(2), 271–280. <https://doi.org/10.1111/puar.13138>
- Miller, D. (1992). Deliberative Democracy and Social Choice. *Political Studies*, 40(s1), 54–67. <https://doi.org/10.1111/j.1467-9248.1992.tb01812.x>
- Moore, A. (2012). Following from the front: Theorizing deliberative facilitation. *Critical Policy Studies*, 6(2), 146–162. <https://doi.org/10.1080/19460171.2012.689735>
- Neblo, M. A., Esterling, K. M., Kennedy, R. P., Lazer, D. M. J., & Sokhey, A. E. (2010). Who Wants To Deliberate—And Why? *The American Political Science Review*, 104(3), 566–583.
- Newton, K., & Norris, P. (2000). THREE. Confidence in Public Institutions: Faith, Culture, or Performance? In S. J. Pharr & R. D. Putnam (Eds.), *Disaffected Democracies* (pp. 52–73). Princeton University Press. <https://doi.org/10.1515/9780691186849-007>
- Norheim, O. F., Abi-Rached, J. M., Bright, L. K., Bærøe, K., Ferraz, O. L. M., Gloppen, S., & Voorhoeve, A. (2021). Difficult trade-offs in response to COVID-19: The case for open and inclusive decision making. *Nature Medicine*, 27(1), 10–13. <https://doi.org/10.1038/s41591-020-01204-6>
- Norris, P. (2001). Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide. *Cambridge University Press*. <https://doi.org/10.1017/CBO9781139164887>
- Norris, P. (2011). Democratic Deficit: Critical Citizens Revisited. *Cambridge University Press*. <https://doi.org/10.1017/CBO9780511973383>
- O'Flynn, I. (2007). Divided Societies and Deliberative Democracy. *British Journal of Political Science*, 37(4), 731–751.
- O'Flynn, I., & Setälä, M. (2020). Deliberative Disagreement and Compromise. *Critical Review of International Social and Political Philosophy*, 25, 1–21. <https://doi.org/10.1080/13698230.2020.1737475>
- Ozanne, M., Bhandari, A., Bazarova, N. N., & DiFranzo, D. (2022). Shall AI moderators be made visible? Perception of accountability and trust in moderation systems on social media platforms. *Big Data and Society*, 9(2), 20539517221115664. <https://doi.org/10.1177/20539517221115666>
- Park, J. Y. (2012). *Testing Conditional Effects of a Moderator in Deliberation: A Lab Experiment* (SSRN Scholarly Paper 2110648). <https://papers.ssrn.com/abstract=2110648>
- Pasquale, F. (2015). *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press. <https://www.jstor.org/stable/j.ctt13x0hch>
- Pasquale, F. (2016). Platform neutrality: Enhancing freedom of expression in spheres of private power. *Theoretical Inquiries in Law*, 17(2). <https://doi.org/10.1515/til-2016-0018>
- Przybylska, A. (Ed.). (2017). *ICT for dialogue and inclusive decision-making*. Peter Lang.
- Przybylska, A. (2021). Model Solutions and Pragmatism in Developing ICT for Public Consultations. *Journal of Deliberative Democracy*, 17(1), Article 1. <https://doi.org/10.16997/10.16997/jdd.980>
- Rains, S. A. (2005). Leveling the organizational playing field—virtually: a meta-analysis of experimental research assessing the impact of group support system use on member influence behaviors. *Communication Research*, 32(2), 193–234. <https://doi.org/10.1177/0093650204273763>
- Rhee, J. W., & Kim, E.-M. (2009). Deliberation on the Net: Lessons from a Field Experiment. In T. Davies & S. P. Gangadharan (Eds.), *Online Deliberation: Design, Research, and Practice* (pp. 223–232). CSLI Publications.

- Ryfe, D. M. (2006). Narrative and deliberation in small group forums. *Journal of Applied Communication Research*, 34(1), 72–93. <https://doi.org/10.1080/00909880500420226>
- Sen, A. (1995). Equality of What? In A. Sen (Ed.), *Inequality Reexamined* (p. 0). Oxford University Press. <https://doi.org/10.1093/0198289286.003.0002>
- Shortall, R., Itten, A., van der Meer, M., Murukannaiah, P. K., & Jonker, C. M. (2022). Inclusion, equality and bias in designing online mass deliberative platforms. *Frontiers in Political Science*, 4, 946589. <https://doi.org/10.3389/fpos.2022.946589>
- Shortall, R., Itten, A., van der Meer, M., Murukannaiah, P. K., & Jonker, C. M. (2022). Reason against the machine: future directions for mass online deliberation. *Frontiers in Political Science*, 4, 946589. <https://doi.org/10.3389/fpos.2022.946589>
- Smith, G. (2009). Democratic innovations: designing institutions for citizen participation. Cambridge University Press. <https://doi.org/10.1017/CBO9780511609848>
- Smith, G. (2019a). Lessons From Democratic Innovations. In H. Tam (Ed.), *Whose government is it?* (1st ed., pp. 91–108). Bristol University Press. <https://doi.org/10.2307/fj.ctwcb59gp.11>
- Smith, G. (2019b). Reflections on the Theory and Practice of Democratic Innovations. In S. Elstub & O. Escobar (Eds.), *Handbook of Democratic Innovation and Governance*. Edward Elgar Publishing Ltd. <https://doi.org/10.4337/9781786433862>
- Spada, P., & Klein, M. (2015). *A First Step toward Scaling-up Deliberation: Optimizing Large Group E-Deliberation using Argument Maps*. <https://doi.org/10.13140/RG.2.1.3863.5688>
- Spada, P., & Vreeland, J. R. (2013). Who Moderates the Moderators? The Effect of Non-neutral Moderators in Deliberative Decision Making. *Journal of Deliberative Democracy*, 9(2). <https://doi.org/10.16997/jdd.165>
- Steiner, J. (2012). The foundations of deliberative democracy: empirical research and normative implications. Cambridge University Press. <https://doi.org/10.1017/CBO9781139057486>
- Stromer-Galley, J. (2003). Diversity of political conversation on the internet: users' perspectives. *Journal of Computer-Mediated Communication*, 8(3), 0–0. <https://doi.org/10.1111/j.1083-6101.2003.tb00215.x>
- Stromer-Galley, J., Webb, N., & Muhlberger, P. (2012). Deliberative e-rulemaking project: challenges to enacting real world deliberation. *Journal of Information Technology and Politics*, 9(1), 82–96. <https://doi.org/10.1080/19331681.2012.635971>
- Sunstein, C. R. (2000). Deliberative trouble? why groups go to extremes. *The Yale Law Journal*, 110(1), 71–119. <https://doi.org/10.2307/797587>
- Trénel, M. (2009). Facilitation and Inclusive Deliberation. In T. Davies & S. P. Gangadharan (Eds.), *Online Deliberation: Design, Research, and Practice* (p. 6). Center for the Study of Language and Information.
- Van Dijck, J. (2014). Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology. *Surveillance and Society*, 12(2), 197–208. <https://doi.org/10.24908/ss.v12i2.4776>
- Velikanov, C., & Prosser, A. (2017). *Mass Online Deliberation in Participatory Policy-Making*. [https://www.academia.edu/37537592/Cyriel\\_Velikanov\\_Alexander\\_Prosser\\_MASS\\_ONLINE\\_DELIBERATION\\_IN\\_PARTICIPATORY\\_POLICY\\_MAKING](https://www.academia.edu/37537592/Cyriel_Velikanov_Alexander_Prosser_MASS_ONLINE_DELIBERATION_IN_PARTICIPATORY_POLICY_MAKING)
- Velikanov, C. (2012). *Mass Online Deliberation*. [https://www.academia.edu/12031548/Mass\\_Online\\_Deliberation](https://www.academia.edu/12031548/Mass_Online_Deliberation)
- Vorvoreanu, M., Zhang, L., Huang, Y.-H., Hilderbrand, C., Steine-Hanson, Z., & Burnett, M. (2019). From Gender Biases to Gender-Inclusive Design: An Empirical Investigation. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 1–14. <https://doi.org/10.1145/3290605.3300283>
- Wisniewski, C. (2013). Digital Deliberation? *Critical Review*, 25(2), 245–259. <https://doi.org/10.1080/08913811.2013.843877>
- Wojciechowska, M. (2019). Towards intersectional democratic innovations. *Political Studies*, 67(4), 895–911. <https://doi.org/10.1177/0032321718814165>
- Wojcieszak, M., Thakur, A., Ferreira Gonçalves, J. F., Casas, A., Menchen-Trevino, E., & Boon, & M. (2021). Can ai enhance people's support for online moderation and their openness to dissimilar political views?. *Journal of Computer-Mediated Communication*, 26(4), 223–243. <https://doi.org/10.1093/jcmc/zmab006>
- Yang, K. (2006). Trust and citizen involvement decisions: trust in citizens, trust in institutions, and propensity to trust. *Administration and Society*, 38(5), 573–595. <https://doi.org/10.1177/0095399706292095>