Discover Artificial Intelligence

Perspective

Exacerbating, alleviating, or overcoming? Exploring the nexus between artificial intelligence and the crisis of democracy

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Abstract
When discussing the impact of AI on democracy, the debate predominantly centers on its potential threats, such as misinformation and polarization. However, the role of AI in addressing the democratic crisis is more nuanced. This paper examines three ways that AI might impact the crisis of democracy and discusses the conditions for which these scenarios are more likely to materialize. Firstly, AI could exacerbate this crisis by degrading the public sphere, exacerbating authoritarian rule and increasing power asymmetries. Second, AI could alleviate some aspects of the crisis of democracy by improving public services, rationalizing public debate, or paving the way for new forms of collective participation. Thirdly, AI could overcome this crisis by paving the way for new forms of government beyond the current representative systems. If AI will exacerbate, alleviate, or overcome the crisis of democracy will depend not just on AI itself, but rather on the complex sociotechnical relationship between technology and the cultural, social, economic, legal, and political context in which it is developed. Therefore, we should avoid an essentialist perspective that consider "democracy" and "AI" as givens and embrace a more sociotechnical perspective that looks at how these two elements mutually influence each other.

Keywords AI · Democracy · Crisis of democracy · Sociotechnical approach

1 Introduction

Numerous scholars have debated the impact of digital technology on society and political systems. Recently, pessimistic and more critical perspectives have gained prominence, extending beyond academic and intellectual circles. In the United States, 78% of the population distrusts big tech companies, and 64% believe that social media has negatively impacted society, with only 10% perceiving its impact as positive [112]. Artificial intelligence is no exception. Concerns about this technology have grown in recent years, with 52% of U.S. citizens expressing more worry than excitement about AI, compared to just 10% who feel the opposite [111].

The debate over what constitutes artificial intelligence is vast and cannot be fully addressed here. Many scholars argue that comparisons with human intelligence are misleading, primarily because AI applications operate in fundamentally different ways from the human mind. [20, 45]. As Luciano Floridi suggested [25], AI is a "shortcut" for generically referring to different disciplines, services and products. Therefore, a monolithic definition risks being misleading. However, we can embrace an internationally recognized working definition such as that proposed by the OECD, which claims that:

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"*An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.*" ([106], *p. 5)*

This definition includes a wide range of tools and approaches, such as natural language processing (NLP) applications, computer vision applications, speech and audio processing, recommender systems, predictive analytics, robotics systems, and generative AI.

With the rise of generative AI and the massive hype around it, scholars and public opinion attempted to assess the impact of this technology on society and politics, and more specifically on democracy and its crisis [61, 94]. As with the definition of artificial intelligence, the literature on the crisis of democracy is vast and cannot be fully synthesized within the scope of this paper. The challenges contemporary liberal democratic systems are living in have been gone by many names—crisis, distress, malaise—and scholars have emphasized different elements of them [16, 59, 93, 99]. For the purposes of this study, I adopt a broad understanding of the "crisis of democracy," one that serves as a conceptual lens rather than a normative judgment. Specifically, I identify four key domains in which a liberal representative democracy may be challenged. First is the electoral dimension, which includes phenomena such as electoral manipulation, disinformation campaigns, and declining voter turnout. Second, the communicative dimension, which refers to shifts in the public sphere, including heightened polarization, fragmentation of public opinion, and the declining legitimacy of traditional media. Third, the authoritarian threat includes both democratic backsliding within established democracies and the normative influence of authoritarian regimes on the global stage. Finally, I also include a participatory and substantive dimension, focusing on indicators such as political efficacy, social capital, and citizens' willingness and capacity to engage in collective civic and political life. These dimensions guide the selection of literature and empirical cases discussed in the paper, shaping how the interaction between AI technologies and democratic institutions is analyzed.

When discussing AI and the crisis of democracy, many scholars have turned their attention to concerns such as electoral manipulation [119], misinformation and deep fakes [101], micro-targeting of voters [10], polarization fueled by recommendation systems, and the emergence of new influential gatekeepers in the public debate [37].

However, when dealing with the crisis of democracy, the role of AI could be far more nuanced. To have a proper understanding of how AI may interact with the crisis of democracy, I argue that we should also take into consideration other aspects. This paper proposes three possible ways AI could interact with the crisis of democracy. Firstly, AI could exacerbate the crisis of democracy, specifically by degrading the public sphere, exacerbating authoritarian rule, and increasing power asymmetries. Second, AI could alleviate some aspects of the crisis of democracy. Examples include uses of AI for improving public services, facilitating the public debate, or introducing new forms of collective participation. Finally, in the most extreme scenario, AI could overcome the crisis of democracy by challenging the foundations of current representative and liberal systems, thereby paving the way for alternative models of governance, such as direct democracy or technocratic rule.

As a second point of the paper, I argue that if AI exacerbates, alleviates, or overcomes the crisis of democracy will depend not just on technology itself or how it is used, but rather on the complex sociotechnical relationship between what we understand by AI itself and the cultural, social, economic, legal, and political context in which it is developed. For a proper understanding of the AI-democracy nexus, we should avoid an essentialist perspective that considers "democracy" and "AI" as givens and embrace a more relational, sociotechnical perspective that looks at how these two elements mutually influence each other. The subject matter is so extensive that it is impossible to cover every issue exhaustively, and more empirical research will be needed on each of the three fields I pinpointed: exacerbating, alleviating, and overcoming. Nonetheless, considering all the different elements is essential to develop a comprehensive understanding of the relationship between AI and democracy.[1]

This article offers a literature review that synthesizes existing scholarship and real-world developments at the intersection of artificial intelligence and the crisis of democracy. By organizing the field into three key scenarios, it aims to clarify the main sociotechnical dynamics currently at play. The contribution of this paper lies in its conceptual framing, which seeks to open new avenues for future research. This analytical structure provides a foundation for further sociotechnical investigations into how AI technologies are reshaping democratic institutions, practices, and imaginaries.

[1] Focusing on the crisis of democracy means that this paper will not cover all the possible societal impacts of AI or the political consequences of artificial intelligence. The goal is to pinpoint some of the issues that have been more challenging for liberal democracies.

2 Exacerbating the crisis of democracy: public sphere degradation, electoral manipulation, authoritarian rule, and power asymmetries

Many works criticize AI's role in democratic societies, suggesting it poses a threat (Coeckelbergh [14]) or that the technology itself is anti-democratic [54]. Specifically, media and scholarly concerns have focused on four main areas: the degradation of the public sphere through polarization, misinformation, and disinformation,new possibilities for electoral manipulation; the facilitation of authoritarian rule; and the exacerbation of existing power asymmetries.

2.1 Public sphere degradation

Starting with the first concern, the widespread access to generative AI technology and its unprecedented ability to produce credible content rapidly (including images, videos, and texts) has raised alarms about disinformation and misinformation. These concerns encompass the increase in both the quality and quantity of misinformation, the heightened personalization of misinformation, and the involuntary generation of plausible but false information [13, 68]. Particular attention has been given to the issue of deepfakes, synthetic media created using AI techniques that generate hyperrealistic but fake content. Despite cases of usage of deepfakes and AI-generated images being used in recent elections [43], though, there is no evidence that deepfakes have significantly increased the spread of disinformation or misinformation, nor that generative AI is driving a higher demand for disinformation [113].

The problem with communication and artificial intelligence extends beyond misinformation and disinformation, and it includes polarization and the creation of echo chambers through AI-based recommendation systems on social media. Without delving into the debate on filter bubbles and echo chambers [86], it is crucial to understand the logic behind recommendation systems. Their primary goal is not to provide diverse information, but to maximize the time users spend on the platform by presenting increasingly engaging content to maximize ad revenues. To achieve this, recommendation systems propose user-tailored content to generate engagement, which is often sensational and hyperbolic [110]. This may have consequences in terms of polarization and increasing incivility of the public discourse since, as Bail argues, the "social media prism distorts how extremists see themselves and others, which creates a self-fulfilling prophecy that pushes people further apart" [5], p. 56). It is as if reality on social media was distorted by a filter that favors homophily, exaggeration, and polarizing topics, steering the public sphere in that direction.

On the other hand, some scholars have emphasized the potential political significance of incivility (which is often censored by social media) for socially marginalized groups. Oh & Downey [107] criticize recommendation systems for suppressing marginalized voices in public discourse, arguing that this challenges democracy by undermining free speech and the conditions for political agency. Striking a balance between moderating extreme, polarized content and fostering democratic dialogue is clearly a challenging task. It is also tough to accurately assess the extent to which technology contributes to the "pollution" of public debate. For instance, in an extensive study on social media platforms spanning more than three decades, Avalle et al. [4] show the persistence of toxicity discourse despite changes in platforms and societal norms, suggesting that human behavior and attitudes are more critical than specific algorithmic agencies.

Amidst this complexity, some observers fear that AI-led transformations of the public sphere, coupled with the increasing ambiguity between what is human and what is not, are creating an infosphere where it becomes increasingly difficult to trust others, institutions, and facts themselves, as well as to focus on what is truly relevant. Therefore Coeckelbergh argues that AI threatens democracy by diminishing citizens' epistemic agency—their capacity to make autonomous and informed decisions: "If I no longer know what is true or not, real or not" he asks, "then how can I discuss with other citizens about common good under such conditions, or even vote?" ([14], p. 63).

The discussion on the crisis of trust and forms of knowledge is particularly significant, especially since trust levels are strongly correlated with the quality of democracy [83]. AI may exacerbate these trends [76], as for now people do not seem very able to distinguish between AI-generated and human-produced texts [42]. However, the erosion of trust and the undermining of epistemic agency are not entirely new phenomena, as declining levels of trust in institutions and individuals have been recorded over the past decades in democratic societies [77]. Oxford Dictionary selected "post-truth" as the word of the year already in 2016, describing situations where objective facts are less influential in shaping public opinion than appeals to emotion and personal belief. Moreover, some scholars claim that the erosion of a shared sense of reality began with the rise of post-modernity and a hyper-mediated culture, well before the advent of generative AI. In the early 1980 s, Jean Baudrillard, in his work *Simulacra and Simulation* [7], introduced the concept of the "desert of the real" to describe a society transformed into a barren landscape of simulations devoid of an authentic point of reference.

For him, simulations became the main way humans experience reality, including media and television, celebrity culture, movies, advertisements, news, and so on. These representations had replaced concrete reality, leaving it exhausted and empty, like a desert.

2.2 Electoral manipulation

Beyond communication dynamics, other scholars focused on how hostile actors may use AI for anti-democratic purposes, such as electoral manipulation. The most famous case is doubtlessly the Cambridge Analytica scandal, involving the unauthorized harvesting of personal data from millions of Facebook users by the political consulting firm Cambridge Analytica. The company used the information to influence voter behavior in the 2016 U.S. presidential election and the Brexit referendum, sparking significant privacy and ethical concerns [91]. The media coverage of the case and the terrific accuracy of AI systems for profiling and targeting [80] sparked many fears over the capacity of computational politics to influence citizens and manipulate elections [116]. However, there is no strong empirical evidence for the persuasive effect of what Zuboff called "instrumentarian power", the influence exerted by big tech's AI systems that would limit people's capacity to determine their own future [84]. Empirical research shows that the impact of targeted advertisements and political microtargeting may be far less persuasive and more context-dependent than expected (Tappin et al. [73]). While it is true that people seem more persuaded when they receive a political ad containing a text that is tailored or framed based on data relating to their psychological make-up [81] and microtargeting may increasing party ties and loyalty [47], effects on vote and increasing electoral turnout are conditional on the alignment of message, audience, and electoral salience [30]. As Jungherr concludes, "AI's impact on elections seems limited, given the relative scarcity of the predicted activity—voting" ([37], p. 8).

2.3 Fostering authoritarian rule

More troubling for democracy could be the use of AI for digital authoritarianism-related goals, such as pervasive surveillance, censorship, and political control [18]. In the last Freedom House report [98], the authors show how more and more countries are relying on "AI as an amplifier of digital repression, making censorship, surveillance, and the creation and spread of disinformation easier, faster, cheaper, and more effective". China has been considered the superpower of digital authoritarianism. Even if the depiction of a fully Orwellian regime is probably ill-posed (Strittmatter [72]), many works documented the increasing capacity of Chinese authorities to use AI and newest technologies for surveillance purposes, with facial recognition cameras, smart cities technology [88] pervasive censorship on the web, and the use of bots, particularly aimed at impeding the rise of collective action [39, 48]. For Feldstein, AI is particularly useful for authoritarian regimes because:

> "*Instead of relying on a dense security-force infrastructure to enable widespread surveillance, harassment, and intimidation of opponents across the state's territory, authoritarian leaders can use AI to cultivate a digital repression capability at a lower cost—and reduce principal-agent concerns" ([22], p. 42)*

In other words, given its ability to centralize information and decision-making, the current uses of AI would be more suitable for exercising power in an authoritarian manner, rather than in a democratic one. From this perspective, AI may further exacerbate the crisis of democracy by providing authoritarian countries with an asymmetrical advantage in legitimizing and perpetuating their political system, which democracy would not have.

2.4 Power asymmetries

Another major worry among the public and scholars concerns the role of AI in exacerbating power inequalities, a key focus of critical data studies [34]. In *Atlas of AI*, Crawford [15] looks at AI as an extractive industry, in terms of labor (with lowly paid and exploited workers), natural resources (with the degradation of the environment), and data (with pervasive and surveillance-oriented data collection strategies) that reproduce, optimize, and amplify existing structural inequalities. Power asymmetries may be amplified in terms of racism, with search engines perpetuating racial stereotypes (Noble [60]), facial recognition systems that misidentify people of color at higher rates [85], predictive policing algorithms that disproportionately target minority communities, or health care algorithms that under-serve Black patients. In terms of class inequality, Eubanks [21] shows how AI-powered welfare systems disproportionately target and discriminate against marginalized communities, particularly people experiencing poverty and people of color. Gender bias and cases of

discrimination against the LGBTQIA + community have been reported as well [17, 115], together with further exacerbation of power asymmetries in the workplace [65, 74]. Power concentration and inequality may also emerge in how big tech companies control and produce information. It is not merely about who holds the largest market share, but how these monopolies or duopolies can shape communication dynamics. As Jungherr and Schroder suggest:

> "AI-reliant public arena will largely shift away from the current state—a predominantly open, noisy, and sometimes offensive web—toward structures allowing for greater control over safe and vetted spaces. This will further empower different types of gatekeepers, weaken challengers of the status quo, and reinforce the status quo and established power relations." (Jungherr and Schroder, 2023, p. 8)

From this perspective, AI may exacerbate the crisis of democracy by contributing to creating a structurally unequal society, where discrimination is systemic under the apparent objectivity of technology, power concentrates in a few people's hands, and marginalized groups do not have a fair shot.

3 Alleviating the crisis of democracy: better public services, public debate, and citizens' empowerment

Less academic and public attention has been devoted to how artificial intelligence could somehow alleviate the crisis of democracy itself. Literature on this subject is still emerging, even if AI tools are increasingly employed for democratic purposes [64]. More specifically, AI could follow three main roads in this direction: improving public administration, enhancing public debate in a deliberative direction, and creating new participatory institutions aimed at empowering citizens.

3.1 Better public services

First, if adopted by public administrations, AI could be valuable in optimizing civil servants' work, producing better outcomes, and creating more transparent and efficient services for citizens. Parliaments worldwide have adopted AI systems to enhance their legislative processes. The U.S. Congress implemented the Policy Growth Model (PGM), a predictive model analyzing the interplay between economic growth and the federal budget. Utilizing the Comparative Print Suite (CPS), a natural language processing software, U.S. Congress members can visualize potential changes in existing laws if a new bill is approved. Brazil's Chamber of Deputies utilizes Ulysses, a machine learning-powered platform providing insights from large volumes of data and documents. The Estonian Parliament adopted HANS, a large language model for transcribing all parliamentary meetings. In India, the Digital Sansad enables Members of Parliament to listen to speeches in their mother tongue in real-time [100].

AI may play a crucial role in citizen services, serving various purposes such as answering questions, filling out and searching documents, routing requests, translating, and drafting documents [105]. Some recent research emphasizes the potential of artificial intelligence for greater productivity, simplified procedures, and reduced obligations in the public administration [1], also showing how generative AI has been rapidly implemented in many sectors[2] [89]. However, research on the topic is still emerging, and we lack definitive data on AI's capacity to significantly improve public services.

Adopting and implementing AI in the public sector also faces potential challenges [92], including a lack of competence among civil servants, algorithmic bias, privacy concerns, and technical issues. Various municipalities globally have tried to deploy chatbots to streamline and enhance communication with citizens. Nevertheless, these attempts have encountered issues: for instance, New York's MyCity Chatbot was reported to suggest unlawful actions to users [104]. Additionally, the application of AI in public administration is fraught with ethical dilemmas, such as the trade-off between increasing efficiency while decreasing human autonomy, or concerns related to the protection of privacy and citizens' data [50].

3.2 Improving public discussion

A second way through which AI may favor democracy is by facilitating informed and rational discussion, which is a critical feature of a deliberative understanding of democracy [19, 74]. If developed appropriately, AI systems can serve as effective fact-checkers, detecting fake news and misinformation, or expanding the knowledge base for making informed

[2] For an overview of AI-powered initiatives in the European Union, see: https://joinup.ec.europa.eu/collection/public-sector-tech-watch/cases-viewer-statistics.

decisions. Experiments and examples of this are not missing. Argyle et al. [3] developed an AI chat assistant offering real-time, evidence-based suggestions for divisive online political discussions, while Ito et al. [36] created an AI-powered platform to facilitate crowd discussions. AI can also sustain deliberative processes by producing alternatives and implicitly finding preferences, which help people's decision-making process [97]. To counter false or misleading news, X recently adopted Community Notes, a system in which contributors can leave notes on any post, and if enough contributors from different points of view rate that note as helpful, the AI will publicly show the note on a post. Even if extensive studies are still missing, the system seems promising [2].

Recognizing that engagement-maximizing recommendation systems can sometimes foster division, some scholars have developed alternative systems with opposing objectives. Ovadya and Thorburn [110] refer to these as *bridging systems*, aiming to enhance mutual understanding and trust across divides, fostering productive conflict, deliberation, or cooperation. Instead of prioritizing engagement and market potential, these AI systems seek content that bridges different viewpoints and ideological divides. Recommendation systems can be designed for various "moral purposes" beyond market goals. For example, computer scientists working on the Spotify algorithm have incorporated a "fairness" metric to increase the inclusion of new artists and those from diverse demographics in recommendations and playlists [90].

3.3 New participatory institutions and citizens' empowerment

A third way in which AI can positively impact democracy is by fostering more open and participatory institutions, thereby narrowing the gap between formal politics and citizens (Landemore [44]). Over the last decades, projects aiming to enhance people's participation have emerged within civic tech and e-participatory platforms. In Taiwan, the government and the movement vTaiwan used the Pol.is AI system for involving citizens in policymaking. With this platform, opinions are collected on a specific topic, automatically summarized, and analyzed through machine learning tools to identify consensus among participants. Eventually, the results are used to inform legislation [56]. With this method, Taiwan could engage with thousands of citizens and create a new regulation for Uber. vTaiwan is an example of what Aviv Ovadya calls *collective response systems*. These systems provide a platform for diverse individuals to express their perspectives and overcome the traditional limitations of surveys, public assemblies, voting, referendums, etc. [109].

According to a study conducted with the platform *Talk to the City*, LLMs (large language models) analysis excel at condensing lengthy, complex discussions into concise summaries, uncovering key themes, and even identifying unexpected topics. LLMs are good at creating accessible, informative reports that provide essential context and insights. When combined with voting data, they offer valuable explanations for decision-making [117]. Generally, these pro-democracy AI platforms are characterized by features like preserving agency and autonomy, encouraging mutual respect, preserving equality and inclusiveness, and, most importantly, augmenting rather than substituting for active citizenship [75]. In other words, rather than being an instrument for perpetuating power hierarchies, these AI systems are used and designed to empower people, especially the most disadvantaged. In a study on Afghan women, scholars demonstrated how conversational agents can qualitatively and quantitatively empower marginalized groups [29]. Another example is Jugalbandi, an LLM-powered chatbot allowing Indian residents in rural regions to access government services in their native language.[3]

AI-powered civic tech platforms share a particular focus on citizens' empowerment, at least in their rhetoric. Ethelo's goal[4] is to "Empower" by utilizing instant scenario analysis which inspires participant ownership and lets you make fair decisions that get support." CitizenLab[5] relies on five main features: inform, consult, involve, collaborate, and *empower*. Citizens Foundation[6] opens its website with the slogan: "Platforms and AI empowering citizens and governments." Similarly, POPVOX's[7] mission is to "inform and empower people and make government work better for everyone."

Despite the significant number of cases and the emerging recognition of the issue's urgency by some companies, AI-powered platforms for participation remain relatively rare. They seem to lack the capacity (or opportunity) to become mainstream within the public and political debate. Currently, these platforms are well-known primarily among academics and practitioners. Whether these platforms have the potential to alleviate the crisis of democracy is yet to be determined.

[3] See: https://www.jugalbandi.ai/mission.

[4] See: https://ethelo.com.

[5] See: https://www.citizenlab.co/.

[6] See: https://www.citizens.is/.

[7] See: https://popvox.com/.

4 Overcoming the crisis of democracy: beyond representation

After examining different ways AI might impact (or is already impacting) the crisis of democracy, the third scenario to consider is the potential for AI to overcome this crisis, namely, to terminate liberal representative democracy as we know it. Some intellectuals and decades of science fiction narratives strongly support this perspective (Harari, 2016). However, this position has often been criticized as extremist and unrealistic, echoing fears of the singularity and the power of artificial general intelligence (AGI).[8]

In this context, overcoming the crisis of democracy is not envisioned as a dystopian Terminator or Matrix-like machine government, but rather as a transformation of our political system through the systematic implementation and use of artificial intelligence. This could potentially undermine some principles of representative government as identified by Manin [52]: recurring elections to choose representatives, partial freedom of the elected, decision-making preceded by some form of discussion, and the freedom of public opinion. Therefore, it would not be the end of democracy per se, but rather the end of representative democracy as we know it. For this reason, I leave aside more theoretical contributions on the potential risks of algorithmic technocracy and governmentality [66] to focus instead on current situations as evidenced by empirics and real-world cases.

Generally, moving beyond representative democracy in AI is seen as a shift toward direct democracy rather than authoritarianism. Advocates for the potential of technology to create a more direct form of democracy often begin by criticizing the current system, especially the representatives' failure to meet citizens'needs. For some, AI could eliminate the need for representatives and establish a more robust direct democracy, giving citizens a greater voice. For instance, economist and data scientist Cesar Hidalgo challenges the role of politicians through its "augmented democracy", a system allowing every citizen to create an AI-powered avatar with their preferences, to vote simultaneously on multiple issues. In his view:

> *"Augmented Democracy (AD) is the idea of using digital twins to expand the ability of people to participate directly in a large volume of democratic decisions. A digital twin, software agent, or avatar is loosely defined as a personalized virtual representation of a human. It can be used to augment the ability of a person to make decisions by either providing information to support a decision or making decisions on behalf of that person".*[9]

Without challenging the principle of representation, but with a very different understanding of what representation entails, Andrew Gray ran for Member of Parliament in the Selby and Ainsty constituency in the UK with a unique platform. He crowdsourced his campaign program using a machine-learning algorithm, collecting citizens'opinions, and automatically identifying areas of consensus with AI. His promise was to continue to use the algorithm if elected, allowing his constituents to keep him constantly informed and enabling him to vote on proposals based on their input. His candidacy garnered some media attention, including coverage by POLITICO [118] and The Guardian [95]. However, electoral results have been dissatisfactory, with just 99 votes (0,3%).

The attempt to go beyond human representation also reached political parties by creating crowdsourced-powered virtual politicians. In 2022, a group of activists created the Danish Synthetic Party,[10] the first political party "led by an algorithm": the chatbot "Leader Lars". An artist collective designed the chatbot to engage with human members on Discord, training the algorithm with the programs of Danish fringe parties since 1970. The chatbot's goal was to bring the voices of those not represented by the Danish political system, including parties that did not reach the threshold for entering Parliament and citizens who did not take part in elections. Another case in point is Sam, in New Zealand. Trained with political databases, social media public data, and local news sites, Sam aimed to better understand and represent citizens' views, being "truly neutral" and "treating each and every New Zealander equally". The goal for Sam was to be a candidate in the 2020 New Zealand general election, but the project sank [96].

[8] *Singularity* refers to a hypothetical moment when technology surpasses human capacity of understanding and foreseeing future changes. By overcoming human intelligence, technology will lead to uncontrollable and irreversible scenarios. *Artificial General Intelligence (AGI)* is a type of AI that possesses the ability to understand, learn, and apply knowledge across a wide range of tasks at a human-like level. Unlike narrow AI, which is designed for specific tasks, AGI can perform any intellectual task that a human can, exhibiting general cognitive abilities. Developing this kind of AI is the official goal of companies like OpenAI. However, many scholars and practitioners express skepticism regarding the very feasibility of such a technology.

[9] See: https://www.peopledemocracy.com/.

[10] See: https://detsyntetiskeparti.wordpress.com/.

Efforts to move beyond traditional democracy through artificial intelligence are still relatively rare, sporadic, and not widely supported. This observation is supported by these individual case studies and increasing research into how citizens perceive the use of AI in governance. Concerning the EU decision-making process, research shows that if AI were the only decision-maker for political decisions, citizens would view these decisions as illegitimate [71]. Other studies suggest that combining human judgment with algorithmic expertise is seen as more legitimate than relying solely on algorithms [31, 81]. Acceptance of (partial) AI rule also depends on the policy area. Konig [40] argues that German citizens are overall skeptical towards the use of AI in government and politics, especially in high-level politics, while there is a certain acceptance for administrative tasks, as it has also been found in other research [28].[11]

It is essential to remember that these results are not definitive. A research from 2019 showed that almost a quarter of European citizens are somewhat or totally in favor of letting an artificial intelligence make important decisions about the running of their country, and 23% would be excited to substitute politicians with digital avatars (while 77% of the people would be somewhat or very worried).[12] In addition to that, attitudes may change dramatically from country to country [38]

In line with this sentiment, some scholars are less critical of the extensive use of AI in government. Saetra [67], for instance, argues that if people ensure that control and backup mechanisms are established and design a system where humans oversee the direction and fundamental goals of society, AI could better serve political goals than the current representative system. In his view, this technology is better than humans in advanced strategic reasoning and analysis of vast amounts of data to solve complex problems. This understanding rests on the idea that politics is just about maximizing an output, providing the best possible policies.

Other scholars disregard this position by suggesting that the very core of politics is never having a single, established solution. According to Innerarity, the essence of democracy lies in the recognition that even when individuals share common values and have access to comprehensive data, a single, unequivocally optimal outcome may still be unattainable [35]. Politics involves making decisions in the absence of clear-cut truths, where the goals are often debated, unclear, or require further definition. What is very political is the fact that you need to choose (Barber, 1984). In other words: "A decision is political when, even following a long process of deliberation and preceded by all the objective analyses within our reach, the ultimate option is still not fully clear" [35], p. 5).

If this is what politics entails, then an AI takeover would be impossible, as these technologies would never be able to provide a definitive solution to societal problems. These solutions are inherently partial, subjective, and intertwined with human values and biases. Moreover, Saetra's argument rests on the premise that AI could produce an "objective" and neutral outcome. However, this is fundamentally unachievable. Since AI systems are trained on data generated by humans and reflect the values and prejudices of their developers, they are necessarily political to some degree. The politics embedded in AI can manifest as racial biases, but it can also align with left-leaning and progressive ideologies. For example, recent research by Motoki and colleagues (2024) provides robust evidence that ChatGPT exhibits a significant and systematic political bias in favor of the Democrats in the US, Lula in Brazil, and the Labour Party in the UK.

5 The sociotechnical construction of AI and democracy

The three scenarios outlined earlier provide a complex portrait of the relationship between artificial intelligence and democracy, offering more nuances than the typically catastrophic or overly optimistic narratives that often prevail. This relationship is inherently multifaceted and cannot be reduced to a single perspective. Different AI applications play varying roles: for instance, while social media recommendation systems can exacerbate public debate polarization, the Pol.is algorithm enables tens of thousands of people to express their opinions on public policies in Taiwan. Moreover, the same applications can serve different functions in different contexts. A facial recognition camera can infringe human rights in the absence of a legal framework ensuring privacy protection, yet it can also enhance public services and increase citizen satisfaction in other contexts.

[11] Against the argument of AI as a possible solution to the crisis of democracy König claims that: "there is only very weak evidence that citizens perceive AI as the answer to perceived deficits regarding the working of democracy […] This also means that it is very unlikely that citizens will call for AI as a kind of *deus ex machina* should future political developments erode political support" ([40], p. 16).

[12] See: https://www.ie.edu/cgc/research/european-tech-insights/?submissionGuid=e2233a64-989b-4143-972f-34a8d0608a48#download-cgc.

While certain pessimism about the use of AI, such as its impact on information dynamics and political micromarketing, may be moderated by empirical research, the potential for AI to improve the current crisis of democracy largely remains theoretical. When applied in practice, projects have not succeeded in significantly influencing "mainstream" politics. Current evidence suggests considerable skepticism regarding the overcoming of democracy as well. Citizens' aversion towards"the power of algorithms"is significant [103], and the few instances of virtual politicians or alternative systems remain relatively anecdotal.

Given this scenario, we may conclude that AI is generally contributing further to the crisis of democracy by exacerbating power asymmetries, enabling authoritarian systems to strengthen, and partially transforming the public sphere, even if the dynamics of this transformation still need to be properly assessed. The prospect of overcoming representative democracy seems distant, and the development of democratic AI has yet to fully emerge, together with evidence supporting its positive impact on public administrations. But why is this the case? What is determining AI's impact on democracy? Is AI inherently a challenge for democratic principles?

Scholars in *science and technology studies* and the sociology of technology provide valuable insights into understanding what influences the social impact of different technologies. The core point for those who share a *sociotechnical* approach is that technology is never developed in a vacuum, never fully independent, but it is structurally related to social, cultural, and political elements [9]. Winner [79] suggested that technologies "have politics" because they can be used for specific political purposes or, by their very nature and design, some artifacts could be more coherent with certain political relations (such as nuclear weapons may be more coherent with a war setting). Concerning AI specifically, Simon [68] argues that machine learning systems are political because they almost always prioritize the interests of some social groups over others, and the design of these models is built on some values but forecloses others.

A sociotechnical understanding of technology should move away from essentialist views that attribute all agency to the artifact or to the human subject. Contrary to the technological determinist perspective, which posits that "technologies change due to scientific advances or their own inherent logic and then impact society" [49], p. 24), the social and technical are mutually constitutive (from this, the name *sociotechnical*). As actor-network theory suggests, humans and artifacts form complex assemblages where agency is distributed among "actants," which include more than just human beings [46]. This perspective helps us understand that the impact of AI on the crisis of democracy is not absolute,rather, it depends on the specific sociotechnical configuration in which it is embedded. In other words, AI is unlikely to positively impact democracy if the AI itself, as well as the values and interests of the surrounding society that influence its development (what Bijker [8] would call the "frame" of a specific technology), are not democratic.

Recognizing the political nature of technology, an increasing number of scholars are working in the direction of democratizing AI [12, 63]. These students argue that AI should be accessible to a broader audience to generate a positive social impact, for instance by including people beyond tech experts with councils or participatory processes [53]. Democratizing AI is also seen as a way to address algorithmic bias and promote inclusive, deliberative governance [11, 120]. This perspective is also related to the growing body of literature focused on creating value-oriented technologies. AI alignment, for example, is a field dedicated to ensuring that AI systems align with human intentions and values (Kasirzadeh & Gabriel, 2023 [102],). Similarly, value-sensitive design is an approach that incorporates human values into the technology design process [27].

Alongside the technical artifact, it is therefore necessary to examine how society influences its development. To address issues of bias and polarization, one could suggest replacing current recommendation systems with bridging systems, as we argued in Sect. 3. However, this would conflict with the private interests of companies aiming to maximize user engagement on their platforms, thereby increasing advertising revenues. That implies that the development of AI cannot be separated from the economic context in which it occurs and the interests of the stakeholders who develop these systems.

Another key element of a sociotechnical approach to artificial intelligence is the need to critically examine the specific contexts in which AI is trained, developed, and studied, and to understand how these contexts are shaped by existing power relations. For example, the concentration of AI research and development in the Global North is not a neutral fact; it influences how the technology is designed and deployed. This can lead to the marginalization of certain groups [108], such as Black communities (Noble [60]), or to the structuring of global value chains in ways that exploit the natural resources and labor of the Global South [15]. In response, some scholars have called for moving beyond the assumption of "data universalism" and instead embracing diverse contexts, knowledge systems, and epistemologies [55].

Analyzing how society shapes the development of technology also includes the myths, imaginaries, and narratives surrounding AI [6, 45, 82]. If AI is perceived as a technology that could endanger democracy in concrete ways in today's

world, more research will focus on making AI more compatible with democratic values. Conversely, if AI is seen as an autonomous artificial general intelligence (AGI) that will overcome humanity, today's risks may be overlooked for focusing on long-term Terminator-like scenarios (which is the core assumption of long-termism).[13]

In a sociotechnical understanding, the very idea we have of what democracy and politics are may contribute to shaping technology as well. If democracy is reduced to the act of voting, the focus on the social impact of AI will concentrate primarily on electoral and informational dynamics, neglecting other aspects. Conversely, suppose democracy involves participation, civil society engagement, and the construction of horizontal power relations even outside formal politics. In that case, it is more likely that a movement for the democratization of technology will emerge, since technology is not seen as outside the political realm, but as an indispensable part of it. Similarly, our very understanding of politics can influence this process, particularly the potential for AI to transform representative democracy. If politics is perceived as a technical, administrative task aimed at solving societal problems, then the possibility of AI resolving the crisis of democracy through some form of technocracy becomes more plausible (Saetra, 2020). On the contrary, if politics is seen as an open space without predetermined outcomes, a "confrontation between conflicting hegemonic projects with no possibility of final reconciliation" [58], p. 25), then the political prestige of AI, with its promise of objectivity, diminishes, as there will be a heightened awareness of the essential political role of humans.

In a nutshell, we cannot solely understand the impact of AI on the crisis of democracy through its applications: it also requires examining how democracy and technology shape each other. Currently, AI exacerbates the democratic crisis due to a complex interplay between social and technical factors. For example, AI's role in increasing polarization on social media is not merely a technological issue but involves the economic rationale of social media platforms, human tendencies towards group behavior, and social validation [32] and the design of the technology itself. The lack of democratic development in AI is driven by private economic incentives, inadequate antitrust policies that fail to challenge the dominance of big tech corporations, and a narrow, "thin" understanding of democracy that overlooks the potential democratic dimensions of technological artifacts. All these elements should be taken into account when assessing the mutual relationship between democracy and technology.

The sociotechnical perspective outlined here also enables a more nuanced problematization of a fundamental issue underlying the relationship between AI and democracy: human autonomy and agency. If democracy is a political system that attempts to maximize as much as possible people's autonomy, does AI pose a risk to this autonomy? [26] The concern is not so much that AI "holds power" by occupying a public office, but rather that it"exerts power"by acting without intelligence [24], automating processes, and thereby diminishing human agency. For example, in the field of politics, political speech revision may no longer be the sole domain of humans, but increasingly involve AI. Similarly, AI could play a role in crafting political programs and curating social media content. Intuitively, the ease and immediacy with which AI provides responses might further reduce individual autonomy, as people increasingly rely on technology and abdicate their roles. If humans become less active and more inclined to delegate decisions to third-party systems, the very foundation of democracy could be at risk.

However, it is also important to remember that agency is not a zero-sum game. While it may diminish in one area, it can be gained in another. For instance, AI might reduce the need for manual grammatical checking but could free up time for deeper analysis of the text's meaning. Moving towards a society where the emphasis is on asking the right questions rather than providing answers that technology could better provide might enhance human autonomy at a deeper level. The interaction between AI and human intelligence can amplify their capabilities through synergistic human-AI interactions, resulting in hybrid intelligence. This approach can expand human cognitive capacities by providing valuable tools for processing, filtering, sorting, and navigating vast amounts of information (Maedche et al. [51]).

6 Limitations and conclusion

In this paper, I argued that the impact of artificial intelligence on democracy is more complex and nuanced than the dominant, mainstream view suggests. While AI does contribute in various ways to the crisis of democracy, it also has the potential to mitigate this crisis and even pave the way for new political systems. Furthermore, by adopting a sociotechnical perspective, I proposed that AI's influence on democracy depends on the interplay between the technology and the prevailing cultural, economic, and political dynamics in society.

[13] See: https://www.centreforeffectivealtruism.org/longtermism.

This study presents some limitations. The first concerns the social and geographical context of the literature reviewed. Many of the studies cited exhibit a strong Western bias, particularly those based on empirical research involving social media, which almost exclusively focus on the United States or Europe. While other regions are represented to some extent (such as Taiwan in the case of Pol.is, China in discussions around the authoritarian uses of artificial intelligence, or India and Brazil when dealing with AI implementation into parliaments), many parts of the world remain underrepresented, especially the Global South. Future research on the relationship between democracy and artificial intelligence must take this dimension into account, placing greater emphasis on exploring how this nexus plays out beyond the Western context.

Secondly, the three categories I have proposed should be viewed as conceptual references for analysis, rather than rigid and discrete compartments. In fact, a single element may simultaneously contribute to alleviating the crisis of democracy in one regard, while exacerbating it in another. For instance, the implementation of artificial intelligence systems in public services may, on the one hand, improve the efficiency of services for certain segments of the population and enhance trust in institutions, but on the other hand, it may perpetuate biases and discrimination that undermine fundamental human rights. Therefore, the three suggested categories – exacerbating, alleviating, and overcoming—must always be contextualized within their multifaceted and complex effects.

A third limitation concerns the nature of this paper, which does not rely on original empirical research but instead aims to systematize existing studies in order to offer a clearer conceptual framework for understanding the relationship between AI and the crisis of democracy. The paper's contribution lies in organizing existing works into three categories—exacerbating, alleviating, and overcoming—to highlight the complex, sociotechnical nature of the relationship between AI and democracy. The obvious limitation of this approach is that, due to the continuous production of new research across various disciplines, the paper cannot include all existing studies. Nonetheless, it remains valuable to establish a"current state"of research, as a step for developing future lines of analysis, particularly concerning the key threats to democracy identified in this work.

For instance, if one of the main concerns about AI undermining democracy is the concentration of power, a promising area of research is exploring how AI might instead empower individuals, enhancing their agency and sense of political efficacy. The central question to consider is how certain technologies may either numb political action or enhance, promote, and encourage it. Several prominent scholars have criticized technologies like television from this perspective. According to Putnam [62], television and digital technologies are among the main culprits for the erosion of social capital and civic life in American politics since they individualized people's leisure time and reduced the incentives to gather with others. Sartori [114] also critiqued the role of television in democratic societies, arguing that the pervasive nature of TV diminishes the cognitive capacities of *Homo sapiens*, reducing their abilities for abstract thought and, consequently, their epistemic agency.[14]

Understanding how AI will affect autonomy and agency may be the crucial question for assessing the impact of this technology on democratic societies. Once again, whether AI will act as a catalyst for agency or inhibit it will depend on its sociotechnical direction. This direction will be influenced by factors such as the design of the artifacts, prevailing imaginaries, economic interests, legislative frameworks, and common understandings of democracy and participation. Taking into account all these elements will be a major challenge for both practitioners and scholars.

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[14] Sartori suggested that"a world reduced to images is disastrous for the reasoning capacities of a rational animal, and television causes democracy to regress by weakening its foundation, namely public opinion" ([114], p. 112).

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