

Big Tech, Algorithmic Power, and Democratic Control*

Ugur Aytac

Utrecht University

[Penultimate, forthcoming in *The Journal of Politics*]

Abstract:

This paper argues that instituting Citizen Boards of Governance (CBGs) is the optimal strategy to democratically contain Big Tech’s algorithmic powers in the digital public sphere. CBGs are bodies of randomly selected citizens that are authorized to govern the algorithmic infrastructure of Big Tech platforms. The main advantage of CBGs is to tackle the concentrated powers of private tech corporations without giving too much power to governments. I show why this is a better approach than ordinary state regulation or relying on market mechanisms. My proposal follows from the critique of Big Tech’s concentrated powers, and explains how this justifies democratizing algorithms in the digital public sphere. My approach thus speaks to a core commitment in democratic theory: enhancing the autonomy of the public sphere from the centers of powers in modern societies, be it corporations or governments.

Keywords:

Democratic Innovations, Big Tech, Algorithms,
Corporate Power, the Digital Public Sphere.

Introduction

Algorithms play a central role in the governance of the digital public sphere. They moderate user content on digital platforms by classifying and sanctioning impermissible speech, determine what discourse should be more visible to whom, and shape incentives about how to participate in the digital public sphere (Gorwa, Binns, and Katzenbach 2020; Caplan and boyd 2018; Hron et al. 2022). While none of these tasks are unique to algorithmic governance, their effects are particularly significant due to “the sheer scale of the data on which the algorithms operate, the precision with which they can target people, and the speed with which this can be calculated...” (Christiano 2022, 114; Simons and Ghosh 2020).

Political theorists have been arguing for or against democratic control over algorithms for some time (Binns 2018; Wong 2020; Zimmermann, Di Rosa, and Kim 2020; Himmelreich 2023). Some argue that the existence of ineliminable moral tradeoffs between rival conceptions of fair algorithmic design warrants democratization because

* The research for this paper received support from two grants in different phases: an NWO Vidi Project titled “Legitimacy Beyond Consent” (grant number 016.164.351) and the project “The Business Corporation as a Political Actor,” funded by the European Research Council (grant number 865165).

only democratic processes of public deliberation and contestation can adequately address a wide range of disagreement (Wong 2020, 229). Others investigate the discursive features of a democratic culture that can effectively hold algorithms accountable, e.g., requiring that algorithmic decisions are justifiable to citizens (Binns 2018, 550).

This paper takes a different tack. In line with the recent calls for studying algorithmic influence by conceptualizing it as a power relation (Benn and Lazar 2022; Aytac 2022), I advance two arguments. First, I argue that Big Tech corporations' concentrated powers give us a distinctive set of reasons explaining why we should democratize algorithms, specifically in the digital public sphere that includes social media platforms, search engines, and other technologies that disseminate information on a mass scale. The negative effects of such powers on democracies are widely acknowledged, but it is less clear whether and why they give us reasons to democratize the same power structures rather than addressing the problem in some other way. By drawing on the existing literature and various democratic theory approaches, I systematize and articulate the specific mechanisms by which Big Tech's concentrated algorithmic powers induce a threat to the health of a democratic public sphere. This diagnosis repurposes the existing literature through the conceptual lens of concentrated elite power. Then I show that these problems can only be adequately addressed via a democratic route that is beyond ordinary government regulation or dispersing power through market mechanisms. So the rationale to democratize algorithms should be to protect and enhance the broader democratic system itself. Note that the scope of my argument is limited to sorting and recommendation algorithms of Big Tech's internet services, by which I mean the largest social network platforms and search engines including Facebook, YouTube, Twitter, and Google (Statcounter 2022).

Following the diagnosis, I argue that instituting *Citizen Boards of Governance* (CBGs) is the optimal strategy to democratically contain Big Tech's concentrated powers in the digital public sphere. I contend that other approaches to democratize algorithms, such as extensive government regulation, are undesirable because they are likely to give rise to alternative forms of concentrated power. CBGs, on the other hand, prevent the formation of persistent elite groups that can control the functioning of the public sphere. They are bodies of randomly selected citizens that are specialized in a single issue and integrated into the corporate governance structure of major tech companies. CBGs are authorized to supervise corporate boards' algorithmic governance, expand inclusive public debate about algorithms through adversarial proceedings, and recruit new experts to reform the algorithmic architecture of a platform. The main advantage of CBGs is to tackle the concentrated power of private tech corporations without giving too much power to governments. By empowering ordinary citizens through random selection, I contend that CBGs can be particularly crucial in enhancing the autonomy of the public sphere from the centers of power in highly stratified societies. This is a major pay-off of my argument as it speaks to a core commitment in democratic theory: defending the autonomy of the public sphere.

The paper makes three contributions. First, it intervenes in the debate on the politics of algorithms and digital platforms by offering a new argument in favor of democratization (Binns 2018; Wong 2020; Zimmermann, Di Rosa, and Kim 2020; Himmelreich 2023). More specifically, moving beyond the idea that Big Tech's algorithmic powers are detrimental to democracies, I show why such a diagnosis calls for a specific kind of democratization as a solution. Second, the proposal of CBGs is inspired by and contributes to the burgeoning literature on democratic innovations, particularly its plebeian variant that aims to empower ordinary citizens against economic elites via new institutional mechanisms (McCormick 2011; Vergara 2020; Arlen and Rossi 2021; Carugati and Levi 2021; Arlen 2022; Bagg 2022). The paper justifies a

concrete institutional proposal to secure popular control over Big Tech, extending and further developing other proposals in the same spirit (Carugati and Levi 2021; Simons and Ghosh 2020). Lastly, my argument exposes how the technological aspects of some companies give rise to novel forms of political power that cannot be reduced to the general legal features of the business corporation. This contribution puts the paper in dialogue with an expanding research program on the democratic theory of the business corporation (Ciepley 2013; Hussain and Moriarty 2018; Bennett and Claassen 2022).

One might wonder why the paper specifically targets algorithms instead of providing a general argument to democratize Big Tech corporations' various powers, including the governance of user data and other aspects of social media design (Forestal 2021b; Fischli 2022). Bodies of randomly selected citizens are typically defended as single-issue institutions. This is because dealing with multiple issues at the same time would quickly overwhelm a group of nonspecialist citizens (Guerrero 2014, 158). That is why I choose to focus on one central aspect of Big Tech corporations' powers over the public sphere and defend a single-issue body tailored to it. Algorithms can be seen as a test case, potentially leading to a full-scale demand for democratization: a network of CBGs authorized to govern different functions of the digital public sphere.

My argument differs from the existing contributions in the debate on Big Tech and democratic innovations. Both Simons and Ghosh (2020) and Carugati and Levi (2021, 53–57) defend similar citizen councils to govern or regulate algorithms. Unlike the brevity of their citizen council proposals, this paper aims to offer a more extensive justification for citizen bodies *compared to* alternative proposals. Further, my proposal provides a relatively detailed articulation of these citizen bodies' procedures, powers, and obligations. Another novel aspect of my argument is to devise the proposed institution with special emphasis on reducing epistemic power asymmetries between citizen members and technical experts. Lastly, I repurpose the institutional mechanism of “adversarial proceedings” not only to tackle the epistemic power asymmetry between citizens and experts in algorithmic governance, but also to articulate how randomly selected citizen bodies can form a healthy relationship with a wide range of citizen initiatives in society at large (Pamuk 2021)

There are more distant cousins of my proposal: Social Media Councils for content moderation advocated by several organizations and academics (“Article 19” 2021). CBGs are more plebeian institutions empowering ordinary citizens, whereas SMCs heavily rely on the selection of representatives from civil society organizations and stakeholder groups (Tworek 2019, 99; “Article 19” 2021, 15–16). Additionally, CBGs are supposed to enjoy the authority to make binding decisions whereas SMCs endorse the principle of voluntary compliance (“Article 19” 2021, 6). This makes my proposal more utopian but also more robust in the face of entrenched corporate interests.

The paper proceeds as follows: I start by identifying a desideratum about the public sphere that informs my critique of corporate algorithmic power within digital platforms. Then I discuss what is wrong with corporate algorithmic power in the digital public sphere, and why these problems require a democratic approach. Following this, I lay out my proposal to institute CBGs and show how these bodies can effectively democratize algorithmic powers. Finally, I review and reply to several objections.

1. A Desideratum about the Public Sphere

My desideratum is relatively thin as different democratic theory approaches would be likely to endorse it including deliberative, republican, and realist conceptions. The desideratum holds that the capacity to influence the processes of public opinion formation should be fairly dispersed among the democratic citizenry:

The functioning of the public sphere should not be controlled by any group of political, social, and/or economic elites.

By the functioning of the public sphere, I mean formal and informal processes of public opinion formation through debate, rhetoric, agenda-setting, protest, and other types of social mobilization. This is a hybrid characterization of the public sphere that involves both deliberative and non-deliberative components (Mansbridge et al. 2012). The desideratum holds that no group of elites should be in the position to make these processes excessively skewed toward their values or interests, for instance by rendering certain issues invisible in the public debate environment, by systematically depriving other social groups of essential resources necessary for their civic participation, or by determining the circumstances under which these resources can be used. The public sphere should be autonomous from *the concentrated powers of social, economic, and political elites*.

This is a thin desideratum: different traditions in democratic theory endorse commitments akin to it. First, deliberative democrats typically favor a model of the public sphere in which opinion formation and dissemination channels should “be kept free from the pressure of political and other functional elites” (Habermas 1996, 442). Christiano (2008, 201) similarly argues that “the process of public deliberation should be structured in an egalitarian way” to ensure that ordinary citizens’ interests are respected. To the extent that there is a concentration of power in the central venues of the public sphere, e.g., the mass media, deliberative democrats’ ambition to empower ordinary citizens through informal deliberative processes will be undermined.

Second, the republican strand of democratic thought, which prioritizes the concepts of freedom and domination over the ideal of public deliberation, would similarly be likely to endorse the desideratum. A republican democracy can be viable if the public sphere complements electoral institutions, and empowers citizens in a particular way, ensuring that their political capabilities are “individualized, unconditioned, and efficacious” (Pettit 2012, 132, 188). This is possible if citizens have qualified access to the channels of democratic contestation: in order to keep political and economic elites from dominating a polity, there has to be unconditionally available mechanisms by which citizens initiate popular resistance (Pettit 2012, 218–25). This involves an agonistic and lively public sphere in which citizens, non-governmental organizations, and other civil society actors exhibit vigilance against the dangers of elite capture (Pettit 2012, 226). Elite capture in the public sphere would therefore be in tension with the republican ideal of popular sovereignty.

Third, the newly emerging realist strand in democratic theory involves key ideas that are aligned with an anti-elitist stance on the public sphere. Bagg’s (2018, 892) critical realist approach traces the value of democratic institutions to their potential to undermine the consolidation of elite control in the political system. Other realists similarly center their democratic theory projects on the task of challenging oligarchic tendencies in contemporary polities (Arlen and Rossi 2021; Arlen 2022; Prinz and Westphal, 2023). These approaches are considerably inspired by plebeian democrats (McCormick 2011; Vergara 2020). As the control over the functioning of the public sphere is consequential for capturing political power, realist democrats have reasons to endorse the desideratum. For instance, Klein’s (2022, 39) democratic power approach conceives of democratic institutions in terms of their potential to “organize the collective power of the generally disorganized majority”. One natural outcome of this view is that the public sphere as a domain of political communication should be structured to enhance the collective power of the weak and marginalized “against the already organized, such as the wealthy and incumbent state actors” (Klein 2022, 37).

2. What Is Wrong with Corporate Algorithmic Power in the Digital Public Sphere?

Algorithms are often defined as “encoded procedures for solving a problem by transforming input data into a desired output” (Yeung 2018, 506; Aytac 2022). In the digital public sphere, algorithms operate within “a programmable digital architecture” that shapes user experience, dissemination of information, and the terms of online visibility (Bucher 2012; van Dijck, Poell, and de Waal 2018, 4). By corporate algorithmic power, I mean Big Tech companies’ automated capacity to shape these significant characteristics of the digital public sphere. Hence, the discussion below is primarily about the recommendation and sorting algorithms of major social media platforms and search engines.

I shall argue that there are three different ways Big Tech’s corporate algorithmic governance is incompatible with my public sphere desideratum. Before discussing these, one important clarification is in order. I do not claim that Big Tech’s digital platforms, e.g., Facebook, Twitter, YouTube, and Google, are the only effective venues of the public sphere. Nor are they the exclusive examples of concentrated power. Nonetheless, it would be fair to presuppose that these platforms are at least a significant component of the modern public sphere. Loi and Dehaye (2017, 153) even argue that “dominant internet platforms” are a part of “society’s basic structure” due to their “profound and pervasive influence on all or most persons in society.” Big Tech’s digital environment captures a large portion of public attention, and the industry is extremely concentrated with only 5 platforms above the market share of 1% (Statcounter 2022; Martin 2018). Similarly, visibility and participation in these environments tend to be consequential for the success of political actors and social movements due to their impact on the creation of collective identities and mobilization of resources (Breuer, Landman, and Farquhar 2015). As a result, I assume that any normatively problematic aspect of Big Tech’s media has important implications for the overall health of the public sphere.

2.1 Algorithmic Power and Political Equality

Big Tech’s algorithmic powers are in tension with the desideratum because they imply that a small group of corporate elites exercises a significant degree of control over one crucial function of the modern public sphere: the management of online visibility. What matters specifically is how their governance of online visibility generates normatively salient political inequalities. By political equality, I mean various conceptions of what we should aim to equalize in the public sphere in order to live up to democratic standards.

Big Tech’s algorithmic curation of online visibility can structure the field of public communication in a way that disproportionately benefits certain groups in the political process. Forestal (2021b, 138) convincingly argues that boosting personalization via algorithmic curation is likely to promote mobilization around influential accounts such as Donald Trump. This is corroborated by Trump’s dominance in attracting Twitter attention in 2016 US Presidential debates (Lukito and Pevehouse 2022). Some researchers showed that “right-wing parties benefit at least as much, and often substantially more, from algorithmic personalization than their left-wing counterparts” on Twitter (Huszár et al. 2022, 4). While these findings are useful illustrations of algorithms’ differential effects on visibility, the democratic legitimacy deficit of algorithmic curation is not necessarily tied to any specific empirical pattern. Take another example: YouTube’s algorithm that recommends the next video has been shown to moderate the degree of partisan bias in some experimental studies (Lutz et al. 2021, 3). One can even imagine an instance of algorithmic curation that mirrors the pre-existing distribution of interests and dispositions among users.

The problem concerns concentrated elite control that decides what conception of political equality is realized in the digital public sphere.¹ Each of these choices about visibility involves tradeoffs between different interpretations of political equality, which can be seen as an essentially contested concept (Gallie 1955). Suppose a specific algorithmic amplification criterion creates an ideological bias in online visibility. In that case, this can still be squared with a procedural understanding of equality insofar as a non-arbitrary justification for the selection criterion can be given. Say the trait X in online speech, e.g., appeal to emotions or argumentation, is algorithmically amplified, and such traits are overrepresented in certain political circles. If the trait itself is deemed an unproblematic feature of egalitarian public opinion formation processes, the inequality of outcome is not necessarily at odds with political equality.² The democratic legitimacy deficit stems from two issues: i) whether the management of online visibility should prioritize a procedural conception of equality over an outcome-oriented conception, and ii) whether the abovementioned X is a desirable trait for the public sphere are matters of political judgment (Simons and Ghosh 2020, 6).³ As these decisions presuppose a specific comprehensive understanding of what our public communication environment should look like in a healthy democracy, they are likely to shape how informal processes of public opinion formation operate.

Further, the visibility on online platforms is consequential for political actors and social movements, impacting their mobilization opportunities (Breuer, Landman, and Farquhar 2015). Hence, the terms of algorithmic curation shape what courses of action actors pursue to boost their visibility (Gillespie 2017). As a result, algorithmic governance resembles a form of political power not because it necessarily limits political participation opportunities but because it implies a set of enforced standards that shapes the rules of the game in political competition.⁴ Regardless of the substance of these decisions, private corporations do not seem to be the right kind of actors to impose a specific interpretation of equality in the public sphere (Cordelli 2020, 119), and this power becomes more arbitrary when such a control is exercised in a highly concentrated manner by a few giant corporations.

Even when algorithmic amplification mirrors preexisting user preferences without discrimination, it is still far from being a neutral position as Gillespie (2018, 31) has already shown in the context of content moderation. Mirroring existing patterns of thought and interest prioritizes equality as descriptive representation over equality as genuine opportunity to contest and transform the dominant sets of convictions in public opinion. One might argue that algorithmic amplification violates equal voice when it distorts our perception of public opinion by underrepresenting prevalent views. In contrast, there is also a sense in which political equality goes hand in hand with the fluidity of political power: today's minority opinions can form tomorrow's hegemony, and a core normative aspect of democratic systems is to allocate these opportunities to

¹ My argument about inequalities is different from algorithms' reproduction of "patterns of inequality across gender, race, age, and zip code" (Simons and Ghosh 2020, 4). It is more about what specific conception of equality is realized in the digital public sphere in terms of allocation of visibility.

² See (Knight and Johnson 1997) for a critique of equality of outcome from a deliberative democracy perspective.

³ See (Wong 2020) for a similar argument that determining what counts as algorithmically fair necessarily leads to controversial political claims.

⁴ Vaccari and Valeriani (2021, 13) contend that social media can be seen as "participation equalizers". See Aytac (2022, 10) for the argument that social media's expansion of our participation opportunities is compatible with the fact that they dominate users at the same time.

all groups. If algorithms mainly amplify preexisting user preferences, minority groups would *ceteris paribus* have less visibility, which is needed to engage with and transform the majority's entrenched convictions, implying a status quo bias. Big Tech corporations, rather than democratically mandated institutions, are currently allowed to make these binding decisions. They determine the shape and limits of political equality in the digital public sphere by exercising concentrated control over the organization of visibility.

2.2 Algorithmic Power over the News Media Industry

Another reason why Big Tech's algorithmic powers are incompatible with the desideratum is that such powers imply concentrated elite control over the news media industry, which is a crucial component of public opinion formation.⁵ As the news media industry's dependence on revenues from online advertising deepens, outlets' efforts to maximize social media visibility have become a structural constraint over the autonomy of journalistic practices (Peterson-Salahuddin and Diakopoulos 2020, 34). Further, Big Tech has become an extremely centralized gatekeeper in the news media industry. Facebook and Google accounted for about 70% of news websites' external traffic in 2017 (Diakopoulos 2019, 179).

One way corporate algorithmic power limits the autonomy of journalists is that their choices about coverage are influenced by their beliefs about whether a story is suitable for algorithmic dissemination on social media (Peterson-Salahuddin and Diakopoulos 2020, 33; van Drunen 2021, 11). In a competitive environment where media outlets aim to maximize profits from online advertising, boosting visibility by producing the kind of content that one believes recommendation algorithms prioritize is crucial (Peterson-Salahuddin and Diakopoulos 2020, 27). This influences framing, emphasis, and delivery style – all of which can significantly change how an audience processes and reacts to a news story (Peterson-Salahuddin and Diakopoulos 2020, 33–34; Bell et al. 2017, 39).

A vivid illustration of how Big Tech's power can impact news websites' online visibility is when “Facebook's algorithm re-prioritized friends and family over publishers” in 2016, which substantially reduced the visibility of media outlets (Caplan and boyd 2018, 6). In a way, Big Tech determines to what extent media outlets reach news consumers (van Drunen 2021, 11). Similarly, social media algorithms that prioritize certain forms of expression, e.g., videos over texts, increase “the cost of production” for media outlets (Bell et al. 2017, 37-38). This imposes an additional financial burden that might adversely influence resource allocation decisions, i.e., video production eating up resources that could have been used to achieve a broader range of coverage needed for a pluralist content environment. However, while arguing that Big Tech's algorithmic powers impose significant constraints over the autonomy of the news media industry, one should not overstate the degree of this control. In many cases, journalists acknowledge that their journalistic principles still play an important role in editorial decision-making (Peterson-Salahuddin and Diakopoulos 2020, 34).

One might object that Big Tech's algorithmic control over the news media industry is a mere remanifestation of how the imperatives of market competition and profit maximization restrain the autonomy of the mass media. I do not deny apparent continuities between Big Tech's algorithmic power and other pressures of capitalism in the news media. However, the former exacerbates the problem in a distinctive way. In a paradigmatic capitalist news market, the pressure to respond to market demand is created

⁵ Simons and Ghosh (2020, 6) problematize algorithmic news dissemination itself whereas I focus on how this is likely to exacerbate pressures on the autonomy of journalism as discussed below.

by the dispersed influence of millions of consumers. Consumer preferences can be shaped by conventional media actors, but these actors' powers are not as centralized as Big Tech's (Noam 2016, 1022). This new dynamic gives a few giant corporations the power to determine the parameters of success in a competitive environment of algorithmic amplification.

Another concern is that the critique of Big Tech algorithms in the news media shifts attention away from media outlets' responsibilities. One might argue that the autonomy-restraining effects of algorithms can be avoided if non-profit maximizing alternatives proliferate. Indeed, there are some concrete examples of what alternative journalism might look like if we consider unorthodox business models or even the recent expansion of non-profit outlets (Forman-Katz, Shearer, and Matsa 2022). I acknowledge that we should not let conventional corporate media off the hook. However, there are still good reasons to take Big Tech algorithms seriously, even if it is not the sole or gravest problem in news production. For-profit media corporations are likely to play a major role in the near future. The reach of for-profit news media still dominates, with 468 million "average monthly unique visitors" from the top 5 outlets in the United States (*CNN Digital* 2022). A subscription-based revenue model might be an alternative to advertisement, but the share of subscriptions in total revenues is remarkably marginal (Chyi and Ng 2020). Given that conventional for-profit media is likely to retain its dominant position, it makes sense to critically analyze how Big Tech algorithms interact with the profit-maximizing behavior of these media outlets.

Further, Big Tech algorithms can generate similar problems for non-profit news production. Non-profit news organizations owe their continued existence to their financial viability, and they "change their news practices as the economic context in which they operate changes" (Ryfe 2021, 70). Unless they primarily raise funds from foundation grants, which can be a different kind of problem for the autonomy of journalism, their online visibility in algorithmically mediated environments is consequential for their financial survival (Ferrucci and Nelson 2019).

2.3 Algorithms' Potential to Counteract Concentrated Power

The third problem with corporate algorithmic powers is that the lack of democratization deprives citizens of significant opportunities to counteract preexisting concentrated power in the public sphere. Algorithms are particularly skillful at "directing and disciplining attention, focusing on specific points and canceling out all other data" (Amoore 2009, 22; Beer 2013, 86). For example, social media platforms' algorithmic decisions "draw the attention towards particular cultural products and thus exercise the power to shape cultural encounters that then feed into taste" (Beer 2013, 94). The lack of democratization prevents the use of these algorithmic capabilities in order to improve the overall balance of powers in contemporary political orders.

Although the control over attention is in many ways related to the organization of visibility I discussed above, I use these two terms to refer to different problems. The former is about the distribution of attention between *different issues*, whereas the latter focuses on the *unequal visibility of actors*. They often overlap as actors typically aim to boost the visibility of certain issues. However, some core normative problems are different: rendering certain actors relatively invisible can be understood as interference with their *ability to advance their interests*, whereas concentrated control over human attention is an intervention at a deeper level. It depoliticizes certain issues and might even *hinder actors from formulating and articulating their interests* concerning the subject from which attention is diverted (Diakopoulos 2019, 183).

The political importance of control over attention is best understood through the second face of power, which is the idea that powerful actors can depoliticize certain

policy issues and render them invisible in public debate (Bachrach and Baratz 1962, 952). A substantial degree of public attention seems to be a necessary condition for the widespread politicization of an issue, bringing it to the public's agenda so that there can be meaningful debate and contestation. However, real-world democracies suffer from political and economic elites' disproportionate capacity to unilaterally narrow the range of public deliberation and exercise control over agenda-setting (Domhoff 2017, 26; Schlosberg 2016, 48).

The lack of democratic control over Big Tech algorithms is then problematic for two reasons. First, Big Tech's control over algorithms introduces an additional layer of concentrated elite influence over the organization of attention, as algorithmic filtering reflects corporate elites' arbitrary will, interests, and biases in determining what issues should be more noticeable in the public sphere. In some ways, the rise of Big Tech can even be said to worsen the situation. For instance, news coverage about wealthy or high-status actors is less frequent in the online media environment than in conventional media (Harcup and O'Neill 2017, 1480). Second, and perhaps more importantly, the lack of democratization deprives citizens of an important tool to at least partially counteract elites' concentrated control over the organization of attention and agenda-setting. Insofar as algorithms are effective ways of channeling attention in certain ways, popular control over them might reasonably be expected to emphasize public affairs that are normally depoliticized by elite interests. By democratizing recommendation and sorting algorithms, their attention-directing powers can be utilized in order to boost the salience of important policy domains that are under the heavy influence of elite power.

2.4 Why Democratization?

One might argue that there are more straightforward and conventional ways of eliminating concentrated powers in the digital public sphere than democratic control. One proposal is to break up monopolistic Big Tech companies (Kuehn and Salter 2020, 2598). By increasing the number of technology companies that control the digital public sphere, corporate elites' power can be considerably dispersed. However, this approach has two shortcomings. First, the size of user networks on social media is why they play a valuable role as public sphere (Muldoon 2022, chap. 4): splitting the digital public sphere into smaller networks undermines the whole point of connecting with as many people as possible. Further, since the algorithmic architecture is still governed by corporate actors in this scenario, algorithms' democratic potential to counteract disproportionate elite influence on the organization of human attention cannot be utilized, as I discussed in the previous section.

Second, some might argue that corporate algorithmic power can be dissolved through empowering individuals to purchase their own algorithms in the market. Some social media platforms had plans to create an app store for algorithms that speak to different consumer preferences (Kastrenakes 2021). This proposal could effectively disperse power over algorithms, and would allow users to partially determine what kind of public communication environment should be dominant. However, hyper-individualizing algorithmic arrangements might exacerbate the complaints about fragmentation in the digital public sphere (Aytac 2022, 14). Similarly, decentralized networks with diverging algorithmic norms can prioritize small community formation over building a wider, shared public sphere (Rozenshtein 2023, 229). For the digital public sphere to have a democratic value, it should operate as a "common world" to a certain extent (Forestal 2021a, 28), enabling a shared symbolic domain necessary for meaningful public deliberation and/or popular mobilization.

Consequently, we face a dilemma between Big Tech corporations' concentrated and anti-democratic powers, and dispersing that power at the cost of legitimate

democratic functions we attribute to the digital public sphere. This tension is rooted in the fact that shared online platforms are necessarily “built environments” created by design choices (Forestal 2021a, 26, 38). They are not spontaneous orders as in the Hayekian depiction of market relations. On the one hand, online platforms implement certain algorithmic standards as an inevitable aspect of information processing and creating meaningful user experience, e.g., for content moderation (Gillespie 2018, 5). On the other hand, such powers tend to concentrate insofar as there is a democratic need to build large agoras connecting different parts of the citizenry. The paradoxical situation is that the concentration of such powers creates new dysfunctions in the democratic system.

The way out of this dilemma is to disperse power without depriving ourselves of authorized institutional bodies that can intentionally build the algorithmic environment of the digital public sphere. In Claude Lefort’s (1988, 17) terms, even if the digital public sphere is necessarily governed, its locus of power should be an “empty place”. If we wish to resolve the dilemma, then the task is to create an institutional order that can exercise algorithmic powers to build a shared environment, without it being traceable to any identifiable group of political or economic elites. If we also rule out, for obvious reasons, majoritarian tyranny together with corporate domination and decentralization, then opting for a properly democratic approach is the most desirable way to contain Big Tech’s concentrated algorithmic powers. In the next section, I further unpack what I mean by democratization.

3. A Democratic Solution: Empowering Citizens in the Corporate Governance of Big Tech

In this section, I outline a proposal to democratize algorithmic powers in the digital public sphere through an institution that I call *Citizen Boards of Governance* (CBGs): randomly selected citizen bodies furnished with the authority to oversee and govern algorithmic infrastructures. Before getting into the details of my proposal, let me first explain why other approaches to democratize Big Tech’s concentrated algorithmic powers remain either undesirable or incomplete.

3.1 The Limitations of Other Routes to Democratization

An alternative approach might be to democratize algorithms through conventional political institutions, e.g., more extensive regulation by electorally accountable legislative or executive bodies. Both nation states and supranational political bodies already regulate a wide range of issues in the digital public sphere such as data protection, copyright, public incitement to crime, and algorithmic transparency, e.g., the EU’s Digital Services Act (Tworek and Leerssen 2019; Leerssen 2023). Why not expand their domain of authority to more effectively shape algorithmic governance? A major problem with this solution is that extensive state involvement might jeopardize the autonomy of the digital public sphere as much as Big Tech’s concentrated powers. Politicians are subject to immense self-interested pressures from a variety of sources, including their own interests as career politicians, electoral short-termism, and corporate lobbying, and they are incentivized to shape the political process in favor of the powerful and wealthy (Gilens 2012; Bagg 2022, 6). Consequently, they can hardly be seen as the impartial voice of the common good. Further, granting the control of algorithmic governance to conventional political institutions is likely to create a significant status quo bias. If the public sphere is not autonomous from actors that it democratically tames, including politicians, then this is no different from a defendant selecting the members of their own trial jury. Authorizing governments to control recommendation algorithms and determine the

terms of online visibility is a get-out-of-jail-free card for politicians who want to consolidate power.

The available alternatives are not limited to state-centric proposals. Muldoon's (2022, chap. 5) conception of platform socialism is an idiosyncratic model of democracy for Big Tech. This model applies to Big Tech platforms as a whole rather than a specific policy domain such as algorithmic governance. Muldoon advocates a multi-stakeholder approach in which instituting collective ownership would be "combined with new structures of democratic governance", including representatives of workers, consumers, and communities (Muldoon 2022, 143). However, his model's reliance on electoral mechanisms might be vulnerable to elite capture. Success in electoral competition is a function of effective resource mobilization, which can filter out non-elite members of a stakeholder group. While I remain neutral about the use of electoral mechanisms in other domains of Big Tech platforms, I hold that random selection of citizens is particularly suitable for algorithmic governance and other powers that directly shape the public sphere. To the extent that the public sphere is valuable as an enabler of popular mobilization and contestation, we have a strong reason to be risk-averse about the possibility of elite capture in the governance of such channels of contestation.

Lastly, I would like to highlight that my proposal is compatible with various conceptions of user and/or workplace democracy on online platforms, especially in relation to issues that disproportionately or exclusively affect employees and/or platform users (Engelmann, Grossklags, and Herzog 2020). For instance, the interests of social media users can be represented through separate mechanisms as their personal data harvested by Big Tech give users an extra set of interests that should be protected on the grounds of ownership, privacy, and anonymity (Fischli 2022). However, they are not suitable mechanisms to control Big Tech's algorithmic powers. This is mainly because the normative grounds that justify popular control over algorithms are about the democratic quality of the public sphere, in which all citizens have comparable interests.

3.2 Citizen Boards of Governance

In the rest of the paper, I lay out and defend my own proposal to democratically control Big Tech's algorithmic powers through bodies of randomly selected citizens. CBGs are political bodies that are integrated into the corporate governance structure of Big Tech companies. Their members are selected through stratified random sampling, and are authorized to oversee and shape algorithmic architecture in the digital public sphere. My proposal is at the intersection of politicizing corporate governance and democratic innovations. In the last decade, scholars of corporate social responsibility have argued that business corporations' influence on political processes creates a democratic legitimacy deficit (Hussain and Moriarty 2018). Some argue that an adequate response to illegitimate corporate power is to democratically decide what social goals corporations should serve, e.g., through citizen assemblies supervising whether corporations live up to societal expectations (Bennett and Claassen 2022). My proposal for CBGs draws on the literature on democratizing corporations, especially those who advocate integrating democratic processes into the governance structures of corporations.

Moreover, my approach provides a detailed articulation of how to integrate citizen bodies into corporations without falling prey to difficulties common with democratic innovations. CBGs are essentially a form of innovative mini-public: a group of citizens "selected through random or stratified sampling" and "tasked with learning, deliberating and advising or deciding on a policy or issue" (Beauvais and Warren 2019, 893). The proponents of mini-publics emphasize their numerous benefits, including "high-quality deliberation" among a small number of citizens with time and resources, "informing public debates", epistemically beneficial "representation of diverse social perspectives",

and a reduction in legitimacy deficits by including citizen input from a broader range of demographic backgrounds (Arlen 2022; Setälä 2017, 848; Goodin and Dryzek 2006, 228; Brown 2006, 209; Beauvais and Warren 2019, 902). In contrast, some critics warn against the dangers of overestimating the democratic potential of mini-publics. Lafont (2015, 52) argues that granting mini-publics policy-making power would undermine democratic legitimacy, as these bodies cannot be held accountable through the usual electoral mechanisms.

Drawing inspiration from realist democratic accounts of mini-publics (Arlen 2022; Bagg 2022), I envisage my proposal as an institutional innovation to democratically tame the concentrated elite power in algorithmic governance. I argue that furnishing a citizen body with the authority to oversee and shape algorithmic governance is a promising way to democratize Big Tech's concentrated powers in the public sphere. Compared to private corporations and conventional state institutions, ordinary citizen bodies are better positioned to promote *the relative autonomy of the public sphere* from powerful elites in a stratified society.

CBGs satisfy my public sphere desideratum. No identifiable group of social, economic, or political elites can ensure that their members are disproportionately represented due to randomization. Random selection of citizen members provides an egalitarian mechanism of political influence where “every citizen has exactly the same chance of being chosen...” (Landemore 2020, 90). The selection method is also less likely to be captured by powerful interest groups because i) it is difficult to distort or manipulate randomized selection compared to elections as inequalities in lobbying power and resource mobilization do not affect the former (Bagg 2022, 6), and ii) citizen members are less likely to develop a distinct set of self-interests like career politicians as they cannot seek re-election or consolidate their position alienated from the rest of the political community (Ibid., 6).

Let me further zoom in on how CBGs satisfy the desideratum. Consider one of the problems with concentrated algorithmic power I previously discussed: Big Tech's undue influence on the news media. Perhaps it is an unfortunate fact that corporate algorithms have effects on the way we interact with our informational environment. However, it is a much less unfortunate fact when this power is exercised by a randomly selected, deliberating mini-public instead of private corporations and governments. Algorithms determine the extent and shape of information flows, and their political consequences most of the time depend on what would happen if a sufficiently large group of citizens were exposed to an instance of speech. This is not to say that citizens have an interest in infinite exposure, which would create an informational cacophony. But the issue is that identifying the type of algorithmic regulation citizens would benefit from is politically risky. Once information flows are shaped, most citizens will not be in a position to find out whether or not they are disadvantaged, because they do not know what alternative configurations of our information environment would look like. As a result, we need a specific type of institutional agency that i) sufficiently shares the interests of the broader citizenry in the domain of algorithmic governance, and ii) lacks incentives and opportunities to establish a distinct set of interests in how information flows and online visibility are regulated. Bodies of randomly selected citizens are better than governments and private corporations on both counts. They descriptively reflect the values and perceived interests of a broader group of ordinary citizens. Moreover, the institutional design of CBGs does not allow them to become too alienated from the larger community.

Moreover, CBGs' control over algorithms can possibly alleviate the class bias in our conventional media ecology. It is barely conceivable that ordinary state regulation of algorithms would make more visible the otherwise ignored news stories about political

corruption or elite interests. In contrast, CBGs' socio-economic composition and autonomy would at least make such policies a vivid possibility. It is not certain that CBGs would prefer such algorithms. However, it would not be an exaggeration to say that they would have an interest in preferring them. Algorithms that aim to cultivate an increased sense of vigilance against the powerful would be an example. As a result, CBGs might also be a plausible solution to the third problem that I previously discussed, i.e., the lack of popular control over the organization of human attention via algorithms.

To put it more clearly, CBGs do not automatically lead to the implementation of neutral, pro-democracy algorithms that will improve the substantive quality of curated digital communication. They are rather a procedural or processual improvement: they counteract concentrated power by constituting an alternative scheme of algorithmic governance that does not rely on the existing centers of power, including governments and corporations. This reduces the capacity of these entities to distort public opinion formation processes. However, the core procedural/processual improvement through CBGs cannot be easily detached from substantive outcomes. They imply that some undesirable outcomes associated with elite capture are likely to be filtered out, e.g., corporations turning algorithmic policy-making into ethics washing due to their prioritization of profit motives or professional politicians exercising algorithmic authorities to consolidate their own power. This also means that CBGs improve the balance of power between citizens and elites. Insofar as such improvements in the balance of power are likely to strengthen formal and informal procedures in democratic systems, the substantive and procedural aspects of my proposal are intertwined (Klein 2022, 44).

Even if this is mainly a procedural/processual improvement, one might still ask whether CBGs will likely have any implications for the kind of algorithms we would be subject to in the digital public sphere. If not, then is the procedural improvement too trivial? One might object that the existing algorithms already cater to user preferences if we look at how they typically curate content based on users' own input such as search history, likes, and other online interactions.⁶ However, we have good reasons not to take user preferences for granted in algorithmic policy-making. Politically endorsing rules and policies that may clash with your private preferences is a common feature of the human condition. An addicted smoker might have a strong first-order desire to keep smoking as a private individual. However, as a citizen, they may favor smoking bans that could nudge them and others to smoke less (Pettigrew 2022). Similarly, although algorithmic personalization caters to our existing preferences, this does not mean that they reflect the kind of digital communication environment we have strong reasons to endorse. For instance, when the members of CBGs think about algorithmic design choices as policy-makers rather than as consumers, they might endorse less personalized algorithms to tackle online addiction (Flayelle et al. 2023). Relatedly, the endogeneity of preferences is an important aspect of CBGs as they are not a mere mechanism of preference aggregation (Niemeyer 2011). As discussed below, CBGs involve various layers of (potentially transformative) deliberation and contestation including interactions with experts and civil society actors through adversarial proceedings.

Lastly, CBGs should be integrated into the corporate governance structure of Big Tech companies so that corporate elites cannot even attempt to arbitrarily exercise their algorithmic powers in the first place. This seems more effective than retrospective oversight by a citizen body, as those reacting after the facts often lag behind them, especially in the context of digital technologies that evolve at a high pace (Flew 2019, 14). Further, as the formulation and execution of democratic reforms in algorithmic

⁶ I thank the reviewer for this objection.

architecture require extensive knowledge of corporate policies, democratizing them internally is more convenient on pragmatic grounds. This would help CBGs bypass Big Tech’s defense strategies, e.g., the discourse of corporate secrecy.

In what follows, I discuss CBGs’ composition, powers, and obligations. In doing so, I show how the design of CBGs aims to address the problem of corporate algorithmic power without falling prey to common worries about empowering mini-publics, e.g., questions about expertise, connection with the broader public sphere, and legitimacy. I merely provide a general outline rather than a detailed legislative proposal. Further specification of CBGs should be derived from a democratic process, consisting of deliberations and negotiations among a broader body of experts, political parties, social movements, and other stakeholders.

3.2.1 Composition

CBGs are single-issue boards that are authorized and function within national jurisdictions, following necessary legislative changes to create this arms-length institution including modifications in corporate law. The single-issue focus is needed to reduce complexity so that citizen boards can achieve a sufficient level of epistemic competence within a reasonable timeframe devoted to learning about algorithmic governance (Guerrero 2014, 158; Bagg 2022, 4). I propose that there are separate boards of 51 citizens for each of the Big Tech companies, which are identified according to their market share and importance for the overall public communication environment. Members are selected for a three-year term through stratified random sampling to ensure that users of these platforms and other important demographic characteristics are adequately represented. 51 members per CBG is far from ideal to accurately represent the wider population, but larger groups may suffer from high costs of coordination in their governance tasks. Furthermore, when all the CBGs of online platforms are taken together, i.e., the 5 major Big Tech companies, the statistical power of stratified random sampling will improve. Service is voluntary in CBGs but substantial financial compensation is offered to members to minimize the self-selection of the wealthy.⁷

Secondly, 10 experts from a variety of fields including software engineering, law, applied ethics, and social sciences are selected for an advising and facilitation committee of a CBG. The eligibility conditions for appointment entail an advanced degree and research experience in a cognate field, or relevant industry experience, including in both the fields of technology and civil society activities around digital technologies. The committee has a number of responsibilities: i) overseeing and ensuring the integrity of the randomized selection of citizen members, ii) organizing training for citizen members regarding legal, technical, and societal aspects of Big Tech algorithms, and iii) providing knowledge transfer upon citizen members’ request. Each member of this expert body is appointed by one of the 10 biggest political parties in a country. In doing so, the committee is guaranteed to maintain a high degree of ideological heterogeneity, which is important to avoid partisan elite capture. However, experts also have intra-group biases beyond ideological divides, and it is essential to eliminate their undue influence on citizen members. For this reason, I suggest that one third of a citizen board is renewed every

⁷ In this and following paragraph, the composition of CBGs partly draws on the general structure of Arlen’s (2022) citizen tax juries. Most importantly, my expert committee is equivalent to Arlen’s (2022, 205) “regulatory appendage” in terms of its tasks, but mine is different due to its explicitly partisan composition and specific eligibility requirements. I believe combining partisan appointment with qualification-based eligibility requirements is the right balance between competing demands of democratic legitimacy and epistemic authority. In my version, the committee has an additional responsibility to govern the selection procedure.

year. Staggered selection might be particularly helpful to minimize excessive expert influence, as there would be continuous transfer of knowledge and experience between newcomers and older citizen members (Guerrero 2014, 156). This can substantially restrict experts' power to shape the agenda of citizen bodies, as newcomers would not have to overly rely on experts. I further discuss the danger of undue expert influence in the next subsection.

I prefer to leave the details of CBGs' inner workings relatively unspecified. My aim is to provide an outline that can be adapted to different approaches in democratic theory while its core commitment, i.e., democratizing concentrated corporate power, remains intact. For instance, agonistic democrats might favor CBGs whose internal deliberations are more suitable for confrontational interactions, whereas deliberative approaches might prioritize consensus-seeking (Westphal 2019). However, I pay special attention to how CBGs should form their agenda in the next subsection as it has important implications for minimizing undue expert influence.

3.2.2 Powers and Obligations

My starting point is that Big Tech corporations are currently marked by deep power asymmetries. Efforts to democratize them through discursive mechanisms without “neutraliz[ing] the differentiated bargaining power that each participant has” are likely to be toothless (Sabadoz and Singer 2017, 196). Hence, I envisage a major redistribution of power: CBGs are authorized to i) oversee Big Tech corporate boards' activities in algorithmic governance, ii) freeze the implementation of a particular algorithm, and/or veto the introduction of a new algorithm, and iii) introduce a new algorithm or modify an existing algorithm for the platform they govern. To avoid the arbitrary use of these powers, CBGs are obliged to communicate their justifications to both corporate boards and the broader public through public hearings, explaining why a particular algorithmic model has non-negligible impacts on the democratic public communication environment. Whether CBGs' decisions respect this requirement is subject to judicial review. The exact nature of this review depends on the type of alleged abuse of power: reviewed by administrative courts in disputes between CBGs and corporate boards, and by constitutional courts if CBGs' decisions are claimed to involve discrimination against protected groups or unacceptable restrictions on free speech. It is important to note that judicial reviews can only apply to CBGs' claim about the relevance of their decisions to democratic public communication, or to whether their decisions are compatible with laws protecting free speech and prohibiting discrimination. Beyond these two aspects of review, courts cannot decide whether the content of CBGs' decisions is good for democracy.⁸ Further details about these judicial reviews are beyond the scope of this paper, but I believe this brief discussion should clarify the legal limits of CBGs' powers.

Let me further unpack these powers to show how CBGs can govern Big Tech algorithms in the context of technical complexity. Citizen members will most probably lack the sufficient technical skills to design algorithms themselves, or to give extremely detailed design instructions, even after their training. Most socio-political tasks about algorithms require a translation of normative policy criteria into advanced mathematical and coding language in a way that algorithms can recognize (Žliobaitė 2017). Further, experts from Big Tech or the advising committee can reflect their own implicit value judgments about what counts as algorithmic discrimination under the guise of technical facts when they translate the meaning of an algorithmic practice, e.g., whether it discriminates against certain groups. Consider the question of whether recommendation

⁸ Blanc (2023) proposes corporate constitutional courts as a layer of judicial review at the level of the firm.

algorithms boost content creators from certain demographic groups. Some experts might say this is an entirely technical issue to the extent that such algorithmic decisions purely aim to achieve predictive accuracy (Zimmermann and Lee-Stronach 2022, 10). In such cases, CBGs are authorized to enact adversarial proceedings to partially overcome the problem of technical complexity and experts' potential depoliticization of algorithms and training data. Adversarial proceedings are confrontational debate arrangements that are employed to test expert claims against their opponent peers (Pamuk 2021, 115). The proceedings should empower citizen members by enabling them to pit one expert group against another to reveal "the background assumptions, potential biases, and omissions in rival expert claims" (Pamuk 2021, 24). Although citizen members are lay people, they can still indirectly assess the quality of expert claims in these proceedings by observing whether experts can display a clear and sound line of reasoning in support of their views and debunk the opponent's arguments (Goldman 2001, 95; Pamuk 2021, 115). Given mini-public participants' well-documented willingness to learn about policy issues (Arlen 2022, 210; Jacquet 2019, 647–51), their initial training phase, and moderate degree of specialization in a single issue over a three-year term, it is fair to believe that citizen members can reasonably assess experts' performance in these confrontational settings. As a result, adversarial proceedings can substantially alleviate epistemic power asymmetries between experts and citizen members.

One might worry that CBGs are not well-positioned to govern Big Tech algorithms even with the help of expert knowledge and adversarial proceedings because the most advanced algorithms can be unexplainable (Castelvecchi 2016). The basic idea is that algorithms can be quite opaque when we try to understand how they arrive at optimal decisions. First, this objection applies to any attempt to meaningfully regulate algorithms, be it by corporate boards, technocratic institutions, or democratic bodies. Hence, it does not give us any reason to be particularly skeptical about democratic governance. Further, choosing between explainable and unexplainable algorithms is itself a political decision. When there is a tradeoff between effectiveness and transparency in algorithms, a democratic institution can legitimately strike a balance between the two by enforcing a threshold of acceptable complexity in certain algorithms.

Another function of CBGs' adversarial proceedings is to democratize the agenda-setting phase. While citizen members have the liberty of enacting a proceeding any time they deem appropriate, it is mandatory to organize an adversarial proceeding in the agenda-setting phase of each term. These proceedings involve the deliberation of what CBGs' main focus should be in the following term, e.g., algorithmic gender or racial discrimination, polarization in the digital public sphere, automated moderation of hate speech, or online visibility of marginalized groups. This is particularly important to communicate the existing grievances and harms induced by dominant algorithms. For instance, feminist movements have criticized Google's sorting algorithms for rendering abortion services relatively invisible (Ala-Siurua 2022). Adversarial proceedings are the main mechanism through which such grievances can be channeled into a CBG's policy-making agenda. CBGs are formally obliged to relate their agenda to the ideas and problems debated in these proceedings, which aims to ensure discursive accountability. Participants are selected by i) CBGs upon the recommendation of the advising and facilitation committee, and ii) through the initiatives of NGOs or social movements that collect a sufficient number of nomination signatures to send their representatives to the proceedings.

Mandatory adversarial proceedings democratize the agenda-setting of CBGs in two ways. First, not only members of CBGs but also ordinary citizens in the broader public sphere can influence policy-making by sending their representatives to agenda-setting adversarial proceedings. In this sense, CBGs expand the range of public debate

and democratic contestation about Big Tech, and function as an integrated part of the broader public sphere rather than an isolated institutional experiment, building a bridge between opinion- and will-formation processes (Owen and Smith 2015, 215; Chambers 2009, 333). Second, the possibility of sending representatives to the proceedings is likely to curb experts' undue influence as a wider range of social groups will be available to contest them.

When it comes to CBGs' powers to oversee and/or veto Big Tech platforms' algorithmic arrangements, the initial training phase and adversarial proceedings might sufficiently equip citizen members to judge the qualities of a particular algorithm, e.g., whether it creates undesirable incentives in the news media, fosters online polarization, or reinforces racial discrimination. This will require citizen members to develop an understanding of what other purposes an algorithm should serve in addition to predictive accuracy and user satisfaction. However, active policy-making to reform the algorithmic architecture is a more demanding task for which citizen members lack the technical skills such as translating desired characteristics into a coding language, training an algorithm with large data sets, and integrating it into the broader technological environment of a tech company. A more realistic solution is to envisage CBGs' active policy-making authority as an indirect power. CBGs should be authorized to commission new projects to reform the algorithmic architecture of a Big Tech platform. In doing so, CBGs will be able to i) identify the desired characteristics of a new algorithmic arrangement measured in terms of its observable effects, ii) select the collaborators who will undertake a project, including research institutes, universities, or an internal unit from the company, iii) legally oblige the corporate board to collaborate with the project team, and iv) oversee the project team throughout the process. CBGs can indirectly reform algorithmic arrangements by outsourcing expert knowledge while being the ultimate decision-maker.

However, the exercise of such indirect policy-making powers should be subject to a number of regulations to minimize the risk of corruption. First, to ensure fair competition, commissioning algorithmic reform projects, jointly funded by the public and the relevant company, should be subject to the existing tendering law that generally applies to ordinary public procurement decisions. Second, commissioned projects should respect transparency guidelines, and be open to public scrutiny in adversarial proceedings as well as through journalistic coverage. This is important not only to ensure accountability but also to minimize the risk that experts manipulate CBG members. By achieving greater transparency and public scrutiny, CBG members can draw on additional input from civil society actors in their oversight.

4. Objections and Replies

Let me now review and reply to several objections. First, one might argue that outsourcing expertise in the implementation of CBGs' algorithmic reforms will effectively transfer policy-making powers to experts as citizen members' technical knowledge can never be adequate to hold them accountable. Although citizen members lack the technical skills to micro-manage experts, the former can still hold the latter accountable indirectly by checking whether these delegated technical processes deliver desirable and observable outcomes (Turner 2001, 140). For instance, some common measures to minimize algorithmic discrimination include the suggestions that an algorithm's predictions "should be equally accurate for members of legally protected groups", or that an algorithm leads to "the same percentage of false positives or negatives for each of the groups at issue" (Hellman 2020, 811). After an initial phase of training, interpreting similar measures would be hardly incomprehensible to citizen members, and they can be effectively used to indirectly assess expert performance.

The second objection is that instituting CBGs is unrealistic because it is incompatible with the shareholder primacy doctrine in corporate law, which suggests that “the corporation exists only to make money for its shareholders” (Stout 2001, 1189). Integrating a democratic body into the corporation is likely to clash with the objective of profit-maximization. This is hard to square with the idea that shareholder interests trump all other interests. However, corporate law scholars are far from having a consensus on the plausibility of the shareholder primacy view, and some even argue that this view is not always dominant in informing court decisions in corporate law (Avi-Yonah 2005). Other legal frameworks such as the concession theory of the business corporation are entirely compatible with my approach as their proponents often argue that corporate purpose is a product of governmental authorization, and therefore should be designed in line with a wide range of public interests (Ciepley 2013). Moreover, even if one subscribes to the shareholder primacy view in general corporate law, one might still think of corporations with transformative effects on the public sphere as a special case that needs its own legal category.

The third objection concerns the political legitimacy of CBGs. Granting a randomly selected citizen body political powers can generate a legitimacy deficit as its members cannot be held accountable through electoral mechanisms (Lafont 2015; Setälä 2017, 851). I believe this objection overlooks the fact that CBGs create new authorities by democratizing powers that have been previously exercised by unaccountable private corporations, rather than shifting existing state power from electoral politics to randomly selected bodies. Compared to Big Tech’s private powers, CBGs are considerably democratic and accountable. Their agenda is determined by adversarial hearings that include a wide range of citizen voices across society. Lastly, CBGs can derive their political legitimacy partly from the idea that they counterbalance the excessive influence of corporations and wealthy individuals in politics. This can be understood as a form of quasi-output legitimacy, making a political arrangement desirable not because of its purely procedural qualities but because of its democratically valuable impact on the overall balance of power in a polity.

5. Conclusion

In this paper, I have defended a new institutional model to democratically control Big Tech’s influential algorithms in the digital public sphere. I first explained why the problems with Big Tech’s concentrated powers require a properly democratic solution, highlighting the limitations of relying on market mechanisms and regulations. I also showed that conventional state institutions should not be seen as the appropriate democratic actor who should control the algorithmic infrastructure of the digital public sphere because this would give rise to similar problems of power concentration. As an alternative, I argued that instituting CBGs is the optimal solution. CBGs are well-positioned to enhance and maintain the autonomy of the public sphere from the centers of power in highly stratified societies. They lack the means and incentives to persist as a distinct group of elites, descriptively represent the wider public, and create room for democratic contestation via adversarial proceedings.

Acknowledgements

This paper was presented at the 2022 MANCEPT Workshop on Digital Democracy, TU Delft's workshop on the ethics and politics of technology, ECPR Joint Sessions in Toulouse, and ECPR General Conference in Prague, both in 2023. I am grateful for the audiences' feedback. I also wish to thank Barbara Bziuk, Ben Cross, Enzo Rossi, Faik Kurtulmuş, Henrik D. Kugelberg, James Muldoon, Janosch Prinz, Manon Westphal, Philipp Stehr, Rutger Claassen, Tully Rector, and Zeynep Pamuk for valuable comments. Finally, I benefited from feedback from three anonymous reviewers for the Journal of Politics and from the editors' guidance.

References

- Ala-Siurua, Venny. 2022. "Google's Algorithm Is Endangering Access to Women on Web's Online Abortion Service." *Women on Web*. <http://www.womenonweb.org/> (accessed November 20, 2022).
- Amoore, Louise. 2009. "Lines of Sight: On the Visualization of Unknown Futures." *Citizenship Studies* 13 (1): 17–30.
- Arlen, Gordon. 2022. "Citizen Tax Juries: Democratizing Tax Enforcement after the Panama Papers." *Political Theory* 50 (2): 193–220.
- Arlen, Gordon, and Enzo Rossi. 2021. "Must Realists Be Pessimists about Democracy? Responding to Epistemic and Oligarchic Challenges." *Moral Philosophy and Politics* 8 (1): 27–49.
- "Article 19." 2021. Social Media Councils. <https://www.article19.org/wp-content/uploads/2021/10/A19-SMC.pdf> (accessed June 15, 2023).
- Avi-Yonah, Reuven S. 2005. "The Cyclical Transformations of the Corporate Form" *Delaware Journal of Corporate Law* 30 (3): 767–818.
- Aytac, Ugur. 2022. "Digital Domination: Social Media and Contestatory Democracy." *Political Studies*. Published ahead of print. <https://doi.org/10.1177/00323217221096564>.
- Bachrach, Peter, and Morton S. Baratz. 1962. "Two Faces of Power." *American Political Science Review* 56 (4): 947–52.
- Bagg, Samuel. 2018. "The Power of the Multitude: Answering Epistemic Challenges to Democracy." *American Political Science Review* 112 (4): 891–904.
- Bagg, Samuel. 2022. "Sortition as Anti-Corruption: Popular Oversight against Elite Capture." *American Journal of Political Science*. Published ahead of print. <https://doi.org/10.1111/ajps.12704>.
- Beauvais, Edana, and Mark E. Warren. 2019. "What Can Deliberative Mini-Publics Contribute to Democratic Systems?" *European Journal of Political Research* 58 (3): 893–914.

- Beer, David. 2013. *Popular Culture and New Media: The Politics of Circulation*. Springer.
- Bell, Emily J., Taylor Owen, Peter D. Brown, Codi Hauka, and Nushin Rashidian. 2017. "The Platform Press: How Silicon Valley Reengineered Journalism." Tow Center for Digital Journalism Publications. Columbia University.
- Benn, Claire, and Seth Lazar. 2022. "What's Wrong with Automated Influence." *Canadian Journal of Philosophy* 52 (1): 125–48.
- Bennett, Michael, and Rutger Claassen. 2022. "Taming the Corporate Leviathan." In *Wealth and Power: Philosophical Perspectives*, Michael Bennett, Huub Brouwer, and Rutger Claassen, eds. Routledge. 145-165.
- Binns, Reuben. 2018. "Algorithmic Accountability and Public Reason." *Philosophy and Technology* 31 (4): 543–56.
- Blanc, Sandrine. 2023. "Deliberative Democracy and Corporate Constitutionalism" *Journal of Business Ethics*, 1–15. <https://doi.org/10.1007/s10551-022-05206-x>.
- Breuer, Anita, Todd Landman, and Dorothea Farquhar. 2015. "Social Media and Protest Mobilization: Evidence from the Tunisian Revolution." *Democratization* 22 (4): 764–92.
- Brown, Mark B. 2006. "Survey Article: Citizen Panels and the Concept of Representation." *Journal of Political Philosophy* 14 (2): 203-225.
- Bucher, Taina. 2012. "Want to Be on the Top? Algorithmic Power and the Threat of Invisibility on Facebook." *New Media and Society* 14 (7): 1164–80.
- Caplan, Robyn, and danah boyd. 2018. "Isomorphism through Algorithms: Institutional Dependencies in the Case of Facebook." *Big Data and Society* 5 (1): 1-12.
- Carugati, Federica, and Margaret Levi. 2021. *A Moral Political Economy*. Cambridge University Press.
- Castelvecchi, Davide. 2016. "Can We Open the Black Box of AI?" *Nature* 538 (7623): 20. <https://doi.org/10.1038/538020a>.
- Chambers, Simone. "Rhetoric and the Public Sphere: Has Deliberative Democracy Abandoned Mass Democracy?" *Political Theory* 37(3): 323-350.
- Christiano, Thomas. 2008. *The Constitution of Equality*. Oxford University Press.
- Christiano, Thomas. 2022. "Algorithms, Manipulation, and Democracy." *Canadian Journal of Philosophy* 52 (1): 109-124.
- Chyi, Hsiang I., and Yee M. M. Ng. 2020. "Still Unwilling to Pay: An Empirical Analysis of 50 US Newspapers' Digital Subscription Results." *Digital Journalism* 8 (4): 526–47.

- Ciepley, David. 2013. "Beyond Public and Private: Toward a Political Theory of the Corporation." *American Political Science Review* 107 (1): 139–58.
- CNN Digital. 2022. "CNN Digital Dominates All Competitors; #1 Digital News Outlet of 2021," 2022. <https://cnnpressroom.blogs.cnn.com/2022/01/26/cnn-digital-ratings-top-competitors-largest-digital-news-outlet-2021/#:~:text=%231%20IN%20U.S.%20MULTIPLATFORM%20UNIQUE,2021%20across%20mobile%20and%20desktop> (accessed June 14, 2023).
- Cordelli, Chiara. 2020. *The Privatized State*. Princeton University Press.
- Diakopoulos, Nicholas. 2019. *Automating the News*. Harvard University Press.
- Domhoff, G. William. 2017. *Studying the Power Elite*. Routledge.
- Engelmann, Severin, Jens Grossklags, and Lisa Herzog. 2020. "Should Users Participate in Governing Social Media?" *First Monday* 25 (12). <https://doi.org/10.5210/fm.v25i12.10525>.
- Ferrucci, Patrick, and Jacob L. Nelson. 2019. "The New Advertisers: How Foundation Funding Impacts Journalism." *Media and Communication* 7 (4): 45–55.
- Fischli, Roberta. 2022. "Data-Owning Democracy" *European Journal of Political Theory*. Published ahead of print. <https://doi.org/10.1177/14748851221110316>.
- Flayelle, Maèva, Damien Brevers, Daniel L. King, Pierre Maurage, José C. Perales, and Joël Billieux. 2023. "A Taxonomy of Technology Design Features That Promote Potentially Addictive Online Behaviours." *Nature Reviews Psychology* 2 (3): 136–50.
- Flew, Terry. 2019. "The Platformized Internet: Issues for Internet Law and Policy." *Journal of Internet Law*, 22(11): 3-16.
- Forestal, Jennifer. 2021a. "Constructing Digital Democracies: Facebook, Arendt, and the Politics of Design." *Political Studies* 69 (1): 26–44.
- Forestal, Jennifer. 2021b. *Designing for Democracy*. Oxford University Press.
- Forman-Katz, Naomi, Elisa Shearer, and Katerina Eva Matsa. 2022. "Nonprofit News Outlets Are Playing a Growing Role in Statehouse Coverage." Pew Research Center. 2022. <https://www.pewresearch.org/short-reads/2022/04/29/nonprofit-news-outlets-are-playing-a-growing-role-in-statehouse-coverage/>.
- Gallie, W. B. 1955. "Essentially Contested Concepts." *Proceedings of the Aristotelian Society* 56: 167–98.
- Gilens, Martin. 2012. *Affluence and Influence*. Princeton University Press.
- Gillespie, Tarleton. 2017. "Algorithmically Recognizable: Santorum's Google Problem, and Google's Santorum Problem." *Information Communication and Society* 20 (1): 63–80.
- Gillespie, Tarleton. 2018. *Custodians of the Internet*. Yale University Press.

- Goldman, Alvin I. 2001. "Experts: Which Ones Should You Trust?" *Philosophy and Phenomenological Research* 63 (1): 85–110.
- Goodin, Robert E., and John S. Dryzek. 2006. "Deliberative Impacts: The Macro-Political Uptake of Mini-Publics." *Politics and Society* 34 (2): 219–44.
- Gorwa, Robert, Reuben Binns, and Christian Katzenbach. 2020. "Algorithmic Content Moderation" *Big Data and Society* 7 (1): 1-15.
- Guerrero, Alexander A. 2014. "Against Elections: The Lottocratic Alternative." *Philosophy and Public Affairs* 42 (2): 135–78.
- Habermas, Jürgen. 1996. *Between Facts and Norms*. The MIT Press.
- Harcup, Tony, and Deirdre O'Neill. 2017. "What Is News?: News Values Revisited (Again)." *Journalism Studies* 18 (12): 1470–88.
- Hellman, Deborah. 2020. "Measuring Algorithmic Fairness." *Virginia Law Review* 106 (4): 811–66.
- Himmelreich, Johannes. 2023. "Against 'Democratizing AI.'" *AI and Society* 38 (4): 1333–46.
- Hron, Jiri, Karl Krauth, Michael I. Jordan, Niki Kilbertus, and Sarah Dean. 2022. "Modeling Content Creator Incentives on Algorithm-Curated Platforms." *arXiv*. <https://arxiv.org/pdf/2206.13102.pdf>.
- Hussain, Waheed, and Jeffrey Moriarty. 2018. "Accountable to Whom? Rethinking the Role of Corporations in Political CSR." *Journal of Business Ethics* 149 (3): 519–34.
- Huszár, Ferenc, Sofia Ira Ktena, Conor O'Brien, Luca Belli, Andrew Schlaikjer, and Moritz Hardt. 2022. "Algorithmic Amplification of Politics on Twitter." *Proceedings of the National Academy of Sciences* 119 (1): 1-6.
- Jacquet, Vincent. 2019. "The Role and the Future of Deliberative Mini-Publics: A Citizen Perspective." *Political Studies* 67 (3): 639–57.
- Kastrenakes, Jacob. 2021. "Twitter's Jack Dorsey Imagines an App Store for Social Media Algorithms." The Verge. <https://www.theverge.com/2021/2/9/22275441/jack-dorsey-decentralized-app-store-algorithms> (accessed July 8, 2022).
- Klein, Steven. 2022. "Democracy Requires Organized Collective Power." *Journal of Political Philosophy* 30 (1): 26–47.
- Knight, Jack., and Johnson, James. 1997. What sort of political equality does deliberative democracy require. In *Deliberative Democracy: Essays on Reason and Politics*, eds. Bohman, James and Rehg, William. 279-319.

Kuehn, Kathleen M., and Leon A. Salter. 2020. "Assessing Digital Threats to Democracy, and Workable Solutions" *International Journal of Communication* 14 (1): 2589-2610.

Lafont, Cristina. 2015. "Deliberation, Participation, and Democratic Legitimacy: Should Deliberative Mini-Publics Shape Public?" *Journal of Political Philosophy* 23 (1): 40–63.

Landemore, Hélène. 2020. *Open Democracy*. Princeton University Press.

Leerssen, Paddy. 2023. "An End to Shadow Banning? Transparency Rights in the Digital Services Act between Content Moderation and Curation." *Computer Law and Security Review* 48.

Lefort, Claude. 1988. *Democracy and Political Theory*. Translated by David Macey. Cambridge: Polity Press.

Loi, Michele, and Paul-Olivier Dehaye. 2017. "If Data Is The New Oil, When Is The Extraction of Value From Data Unjust?" *Filosofia e Questioni Pubbliche* 7 (2): 137–78.

Lukito, Josephine, and Jon C. Pevehouse. 2022. "Competing for Attention on Twitter during the 2012 and 2016 US Presidential Debates." *Journal of Information Technology & Politics*, 1–14.

Lutz, Michael, Sanjana Gadaginmath, Natraj Vairavan, and Phil Mui. 2021. "Examining Political Bias within Youtube Search and Recommendation Algorithms." In *2021 IEEE Symposium Series on Computational Intelligence (SSCI)*, 1–7. IEEE.

Mansbridge, Jane, James Bohman, Simone Chambers, Thomas Christiano, Archon Fung, John Parkinson, Dennis F. Thompson, and Mark E. Warren. 2012. "A Systemic Approach to Deliberative Democracy." In *Deliberative Systems: Deliberative Democracy at the Large Scale*, 1–26. Cambridge University Press.

Martin, Nicole. 2018. "How Social Media Has Changed How We Consume News." *Forbes*. 2018. <https://www.forbes.com/sites/nicolemartin1/2018/11/30/how-social-media-has-changed-how-we-consume-news/?sh=40a061e63c3c> (accessed March 1, 2022).

McCormick, John P. 2011. "Machiavellian Democracy: Controlling Elites with Ferocious Populism." *American Political Science Review* 95 (2): 297–313.

Muldoon, James. 2022. *Platform Socialism*. Pluto Press.

Niemeyer, Simon. 2011. "The Emancipatory Effect of Deliberation: Empirical Lessons from Mini-Publics." *Politics and Society* 39 (1): 130–40.

Noam, Eli M., ed. 2016. *Who Owns the World's Media?* Oxford University Press.

Owen, David, and Graham Smith. 2015. "Survey Article: Deliberation, Democracy, and the Systemic Turn." *Journal of Political Philosophy* 23 (2): 213–34.

- Pamuk, Zeynep. 2021. *Politics and Expertise*. Princeton University Press.
- Peterson-Salahuddin, Chelsea, and Nicholas Diakopoulos. 2020. "Negotiated Autonomy: The Role of Social Media Algorithms in Editorial Decision Making." *Media and Communication* 8 (3): 27–38.
- Pettigrew, Richard. 2022. Autonomy for Changing Selves. *The Routledge Handbook of Autonomy*. Ed. Colburn, B. Routledge.
- Pettit, Philip. 2012. *On the People's Terms*. Cambridge University Press.
- Prinz, Janosch, and Westphal, Manon. 2023. "The Tribune as a Realist Democratic Innovation." *Political Theory*. Published ahead of print. <https://doi.org/10.1177/00905917231191089>
- Rozenshtein, Alan Z. 2023. "Moderating the Fediverse: Content Moderation on Distributed Social Media." 3 *Journal of Free Speech Law*, Minnesota Legal Studies Research Paper No. 23-19, 217-236.
- Ryfe, David. 2021. "The Economics of News and the Practice of News Production." *Journalism Studies* 22 (1): 60–76.
- Sabadoz, Cameron, and Abraham Singer. 2017. "Talk Ain't Cheap: Political CSR and the Challenges of Corporate Deliberation." *Business Ethics Quarterly* 27 (2): 183–211.
- Schlosberg, Justin. 2016. *Media Ownership and Agenda Control*. Routledge.
- Setälä, Maija. 2017. "Connecting Deliberative Mini-Publics to Representative Decision Making." *European Journal of Political Research* 56 (4): 846–63.
- Simons, Josh, and Dipayan Ghosh. 2020. "Utilities for Democracy." Brookings Institution. <https://www.brookings.edu/research/utilities-for-democracy-why-and-how-the-algorithmic-infrastructure-of-facebook-and-google-must-be-regulated/> (accessed May 18, 2023).
- Statcounter. 2022. "Social Media Stats Worldview." <https://gs.statcounter.com/social-media-stats> (accessed July 8, 2022).
- Stout, Lynn A. 2001. "Bad and Not-so-Bad Arguments for Shareholder Primacy." *Southern California Law Review* 75: 1189.
- Turner, Stephen. 2001. "What Is the Problem with Experts?" *Social Studies of Science* 31 (1): 123–49.
- Tworek, Heidi. 2019. "Social Media Councils". In *Models for Platform Governance*, Centre For International Governance Innovation, 97-102.
- Tworek, Heidi, and Paddy Leerssen. 2019. "An Analysis of Germany's NetzDG Law." Transatlantic Working Group. https://www.ivir.nl/publicaties/download/NetzDG_Tworek_Leerssen_April_2019.pdf (accessed August 1, 2021).

- Vaccari, Cristian, and Augusto Valeriani. 2021. *Outside the Bubble*. Oxford University Press.
- Van Dijck, José, Thomas Poell, and Martijn de Waal. 2018. *The Platform Society*. Oxford University Press.
- Van Drunen, Max. 2021. "Editorial Independence in an Automated Media System." *Internet Policy Review* 10 (3): 1–24.
- Vergara, Camila. 2020. *Systemic Corruption*. Princeton University Press.
- Westphal, Manon. 2019. "Overcoming the institutional deficit of agonistic democracy." *Res Publica* 25(2): 187- 210.
- Wong, Pak-Hang. 2020. "Democratizing Algorithmic Fairness." *Philosophy and Technology* 33 (2): 225–44.
- Yeung, Karen. 2018. "Algorithmic Regulation." *Regulation and Governance* 12 (4): 505–23.
- Zimmermann, Annette, Elena Di Rosa, and Hochan Kim. 2020. "Technology Can't Fix Algorithmic Injustice." Boston Review. 2020.
<https://bostonreview.net/articles/annette-zimmermann-algorithmic-political> (accessed July 25, 2022).
- Zimmermann, Annette, and Chad Lee-Stronach. 2022. "Proceed with Caution." *Canadian Journal of Philosophy* 52 (1): 6–25.
- Žliobaitė, Indrė. 2017. "Measuring Discrimination in Algorithmic Decision Making." *Data Mining and Knowledge Discovery* 31 (4): 1060–89.