

Client to Citizen: Civic Empowerment in Cyberspace

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The digital revolution has been overall disappointing for democratic theory. We are now far removed from the early utopian visions of digital networks as emancipatory tools that would help achieve democratic ideals online. Instead, we find ourselves caught in an age of technopessimism, increasingly aware of digital technology's erosive effects on democratic norms. Many have pointed to "addictive devices, an omnipresent surveillance panopticon, racist algorithms, and disinformation machines" to explain how the democratic practice of individuals online is challenged daily by contemporary digital technologies (Bernholz et al. 2021, 3). Democratic theorists, in pursuit of solutions, have identified the need for more robust civic culture online, in which users take on social responsibility to combat the negative effects of such technologies on the digital public sphere (Cohen and Fung 2021; Ford 2021). In other words, digital technologies already offer tools for democratic practice online, but digital users are failing to use available tools with the common good in mind. These analyses raise the question: why is civic investment and obligation currently so weak among users?

I argue that the lack of clear boundaries between public and private digital space negatively affects civic investment among online users. Centralized networks, though physically arranged into digital publics, design software to service the personalized computing needs of users. As users have become reliant on public-facing digital architecture to deliver personalized needs, the boundary between public and private digital space has been obscured and has resulted in a weakened sense of efficacy among users. Free from the burden of maintaining private digital space and subsequently freed from obligation to a digital public beyond those private boundaries, users experience few social pressures to develop pro-social cooperative behaviors. Instead, individual users are encouraged to personalize all aspects of their digital presence and to further entrench reliance on centralized network services for all manner of computing needs. This

combination of heavy reliance on network services and resultant inward turn contribute to digital conditions that inform and shape user behaviors. When such conditions are treated as inevitable, users may unknowingly adopt the digital habits of clients in expansive networks, rather than of potential democratic digital citizens.

In this paper, I look to Jennifer Forestal's work regarding the impact of digital environmental design on the formation of democratic community online for a potential remedy. She applies a Deweyan standard of democracy in investigating how digital platform design affords users stronger senses of identity, durability, and investment within their digital communities. These digital environmental features form a steady foundation upon which democratic practices of recognition and experimentation can flourish (Forestal 2022). I argue that this environmental framework is informative for understanding how digital boundary-setting can be used as a strategy of changing user behaviors. When applied to the individual level, the framework can guide the formation of distinct private digital space and encourage the development of stronger civic investment and obligation by users towards digital publics.

I approach this argument in four steps. First, I define and discuss digital democratic practice within the Deweyan frame. In this view, democratic practice is valued as a strategy of information gathering and deliberative problem-solving. It further emphasizes the importance of education in preparing citizens for civic participation. Second, I look to Jennifer Forestal's application of Deweyan theory in her work on building democratic digital environments. I suggest that her proposals around boundary-setting through platform software, to achieve balance between democratic practices of recognition, attachment, and experimentalism, can help instill a sense of ownership and subsequently civic investment among users. However, Forestal's proposal does not go far enough. Sustainable civic investment requires that digital users be

afforded not only the means to feel ownership in digital communities, but also the responsibilities that come with that privilege. Our modern reliance on network services for the maintenance of our digital commons draws users into the habits of clients. I argue that such clientelist habits are detrimental to those of a digital citizen who, within the Deweyan frame, is called upon to act as responsible stakeholders in their digital environments. I discuss how server-client networks disempower democratic practice online by constraining the possibilities of digital interactions between users, before returning to detail how hardware reform can help realize Forestal's proposals. Finally, I suggest that we design hardware and software to partially disperse the negative effects of server-client networks. We can achieve this by making clearer distinctions between public and private digital space and setting the conditions necessary for users to feel invested in, and responsible for, their digital spaces.

A Digital Democratic Ethos

I adopt the view of John Dewey and scholars of the Deweyan tradition, that democracy is best understood as a method of creating and implementing collective solutions for social problems (Dewey 1939; Anderson 2009; Forestal 2022). The democratic approach is advantageous for social problem solving, compared to other governmental forms, because its participatory values allow a society to draw knowledge and effort from a greater well of human experience. The wager of democracy is that the potential of the many, unburdened by inequalitarian social barriers, will always outweigh the potential of a small elite and that, though it may be prone to error, the democratic approach is capable of self-correction. However, as Dewey consistently emphasizes, these benefits of democracy are not created by simple adoption of democratic procedure or institutions. Instead, democracy is a deeply shared experience with

ethical and moral roots in everyday life. Democracy emerges first as “a personal way of life [that] signifies the possession and continual use of certain attitudes [which form] personal character and [determine] desire and purpose in all the relations of life” (Dewey 1939). These attitudes involve a “moral and spiritual” commitment to the idea that all people are social equals, that social issues require collective solutions, and that human cooperation is continuously capable of solving problems that arise (Dewey 1969, 240). When engrained and acted upon in everyday life, these commitments, held personally by individuals, form a cultural foundation upon which democratic social practice is developed. Dewey argues that this underlying democratic ethos precedes democratic institutions and governance. He calls on us to “think of [institutions] as expressions, projections and extensions of habitually dominant personal attitudes [instead of] thinking of our own dispositions and habits as accommodated to certain institutions” (Dewey 1939, 2). As such, a discussion about the status of democracy in a society is a discussion about the habits of its citizens, and about whether those habits empower individuals to contribute to problem-identifying and problem-solving projects.

The Deweyan approach frames habits as having both instrumental and epistemic impacts on democratic practice. The instrumental value arises from the daily integration of egalitarian values, which makes everyday life constitutive of, and constantly contributive to, a democratic ethos. The lived experiences of individuals impart beneficial variety on how social knowledge is presented, understood, and shared. Additionally, shared egalitarian values ensure that the knowledge that is accumulated in everyday life is imminently deployable as political resources. Information sharing and deliberation is necessary to convert the personal preferences of individuals into shared political views representing public will. Only when citizens communicate regularly as social equals can such processes, which entail coordination and principled

contestation, be conducted to full effect. The epistemic influence of democratic habits arises when individuals come to understand themselves as citizens. The habit of living out democracy prepares the individual to participate in formal democratic processes by instilling a reasonable expectation that participation in governance is meaningful. Democratic citizens recognize that “the governors and the governed are not two classes, but two aspects of the same fact -- the fact of the possession of society by a unified and articulate will” (Dewey 1969, 239). Recognition of this fact of democracy, that citizens are responsible members of a governing body, changes the context of democratic commitments. Deliberation molds personal disagreements into a dynamic process of collective persuasion, where preferences are transformed “not just in the sense of changing individuals’ minds about what each wants, but of changing *our* mind of what *we* want when we act collectively as citizens” (Anderson 2009, 216). The personal openness to challenge and change is essential for the citizen, as it not only instills a latent participatory potential in individuals, but also primes individuals to understand themselves and their personal interests as inexorably tied to public interest.

If we take seriously the Deweyan idea that democracy emerges only when individuals regularly act according to principles of fundamental equality, then we must conclude that the experience of the average digital user is not democratic. I argue that this is the case by first pointing out that digital users are accustomed to distinguishing between different classes of users. One distinction is that between the average user and the administrator, who holds privileged access and the ability to change digital environments. There are immediate concerns with this distinction. It sets up a dynamic in which users have to seek approval from administrators in order to enact changes, thus hindering user autonomy. One could also argue that, because administrators tend to be chosen privately rather than by election, the existence of

administrators as a distinct category of user seems inegalitarian and anti-democratic (Schneider 2024). However, it is clear that the role of administrator is functional and necessary for coordinative digital operations. Even if the category were abolished today, functional necessity would simply establish another type of elevated role. Therefore, solving the problem of digital inequality cannot be boiled down to equalizing classes of users. Instead, we must locate digital inequality in the habits that form around the reliance on administrators for the delivery of digital goods and services – a reliance which displaces and disincentivizes social collaboration between users.

An educational imperative underpins democracy, wherein citizens are called upon to proactively share, obtain, and apply social knowledge in pursuit of shared goals. Democracy, as Elizabeth Anderson reminds us, is “the collective exercise of practical intelligence or learning, applied to the problems of living together as equals” (Anderson, 2009, 226). Such interactions, which are driven by a civic responsibility to contribute to shared needs, are meant to educate citizens both in how they might practically solve issues and how they can see themselves as invested citizens. But no exercise, no application of learning takes place when users are content to be served as clients by expert administrators. The continuation of a digital democratic ethos is threatened as users understand – and increasingly expect – digital goods as something that is owed to them as a consumer, rather than as something that is forged by collaboration between equals. This, I argue, is the issue that faces democratic practice in digital networks today. The reliance that is central to the clientelist habit erodes the individual users’ senses of responsibility and cooperation that would aid the development of digital citizen habits. The problem is not so much that administrators and other privileged user classes exist, but rather that a clientelist

culture prevents users from coordinating the counterbalances necessary to check the expansive power claims of a small technocratic elite.

So, what do we make of this situation, where technocracy is necessary to ensure expert maintenance of social cyberspace but also fundamentally impacts the ability of users to democratically interact through digital media? On one hand, it is undeniable that digital infrastructure requires specialized expertise. On the other hand, the past two decades have seen expert services become increasingly entrenched as necessities in the digital lives of users. Local storage, for example, was once the default method of keeping user data; advancements in data storage often entailed larger storage capacity on devices. In recent years, cloud storage has replaced that model. Similarly, though computer processors are increasingly powerful with each passing year, many users seek hardware that is minimalistic and optimized for processing services offered via cloud. Services have reduced pressure on users to be self-sufficient in managing their computing and data, evident in the way that computer literacy has waned in younger generations as cloud services have become default tools of digital engagement (Chin 2021). In other words, contemporary problems in the digital public sphere regarding the outsized influence of platforms are not only due to the expansion of tech firms, but also due to the contraction of user capability within their digital environments.

If we are to find lasting solutions to the digital issues facing contemporary democracy, such as rampant misinformation, endemic surveillance, and algorithmic influence, we cannot only look to the ways that technocratic bodies might improve their operations. We must seek remedies on the part of platforms and on the part of the individual user. A reinvigorated educational spirit is needed, both to address the practical need for digital literacy and the epistemic needs in establishing a digital citizen identity. However, there are challenges to be

overcome before such practice can meaningfully take root. One such challenge lays in the uncertainty of identity online. Because digital technology allows individuals to represent themselves as multiple personalities across multiple contexts, it is increasingly difficult to distinguish between real and fake user accounts. This uncertainty has an immediate effect, in that it erodes the trust needed for social cooperation, but also a secondary effect in that users are tempted to adopt multiple profiles as a social strategy. For example, some users who are wary of the constant peer surveillance of social media separately maintain “main” accounts that are curated to be presentable to a local audience and alternative “fake” accounts where they can represent themselves without inhibitions (Dewar et al. 2019; Kang and Wei 2020). These strategies reveal that users treat their digital identities as flexible and dependent on the social pressures that are presented to them. Unlike one’s physical self, which is difficult to fully obscure in social situations, a digital self is constructed only by information that is given voluntarily. It is easy to hide oneself in the face of digital social pressures. This ease of evasion is unhelpful for democracy as the purpose of collaboration is to overcome and solve the problems that we collectively face. For digital democratic practice to be meaningful, not only do users need to be educated into the habits of digital citizens, but these habits must engage with real stakes for a person’s identity – which can only arise when identity is durable. For this reason, the first step towards digital citizenship involves ensuring a firm basis for digital identity – one with which other users can consistently interact, cooperate, and build community.

Building Democratic Spaces in Networks

Digital democratic theorists offer one path forward. In her (2022) study into democratic digital community, Jennifer Forestal argues that democratic digital spaces can only arise when

the digital environments of social media consciously design features that facilitate collaborative behaviors. She presents an analysis of social media platforms that compares their built environments for their effect on users' senses of recognition, attachment, and collaboration with their community. Forestal proposes that the absence of these affordances tends to result in community dissolution, whereas their incorporation into platform design grants the boundaries, durability, and flexibility that digital communities need to be sustainable in the long term. Once established, digital communities have a firm basis to further develop democratic practices of recognition and experimentalism.

Recognition, in this case, refers to the ability of all users to distinguish one community from another. Forestal notes that, "In communities... members have a 'sense of shared space, rituals of shared practices, and exchange of social support,' as well as a shared identity as members of the community" (2022, 36). A community cannot exist if it does not define itself in contrast to other communities. The purpose of clear boundaries, she asserts, is to provide clear limits which distinguish the community within. As digital space lacks physicality, boundaries of online communities can only be ensured through consistent expression and assertion of the communal identity. As an example, Forestal points to Facebook in its early expansionary stages and notes how it started as a college-based dating platform. To join, users needed to provide a college-affiliated email, which neatly defined the boundaries of early Facebook as a student-oriented community. This requirement anchored social interactions in that shared identity. When Facebook opened up and unbound itself from the school email requirement, the character of the Facebook community fundamentally shifted away from its college-based identity. Instead, individual users found themselves part of a globe-spanning space. Forestal argues that "the result of Facebook's unbounding [of] its platform... was the disintegration of the site's communal

bonds” (2022, 55). Facebook itself felt the negative impacts of dissolved boundaries, as it eventually reversed course through their introduction of Groups – bounded communities with community defined goals. By facilitating the creation of purposed Groups and adjusting their systems to support Group growth, Facebook was “reintroducing boundaries [and] modeling a strategy for building boundaries into digital spaces, [and] thus providing environments within which democratic communities might more easily form” (2022, 62).

Forestal further asserts that democratic practice requires that there be reliable and continuous interaction by its membership. She writes that “without a rooted sense of place and the place attachment it generates... citizens are more likely to turn their attention inward, to focus on their own individual interests instead of recognizing their entanglements with, and obligations toward, the *specific* communities of which they are members” (2022, 77). Code requires conscious repetition, as well as sustained infrastructure, to build a semblance of durability. Forestal posits that private platforms have been the most successful in facilitating digital social interactions and this success can be traced to effective software design. Software, when applied to a digital environment, grant users the ability to collaborate with one another and to maintain their communities over time. These design cues are balanced by other incentives, such as ad revenue optimization. An effective platform will achieve balance between incentives, so that corporate governance can maintain its business model and so that users can cultivate their communities over time.

Though Forestal emphasizes boundaries and durability, her proposals do not seek to ossify platform spaces. Collaboration requires both inclusive participation and an openness to improvement. Forestal, quoting Dewey, writes: “the democratic commitment to progress, to improvement through “continuous adjustment,” requires that citizens practice the “experimental

mind of habit, that which regards ideas and principles as tentative methods of solving problems and organizing data” (2022, 105). Such ideals of progressive improvement ensure that citizens not only can participate, but also that such participation is oriented towards continuous benefit for the community. This combination of experimental habits and inclusive engagement is assured through “built environment[s] characterized by flexibility, meaning spaces that...host a variety of perspectives and...[which are] malleable, affording citizens control over their environment so that they may receive the space to fit their needs” (2022, 99). This control must also be genuinely inclusive to meet democratic standards. Forestal highlights this point by pointing out that “not all self-sustaining communities should properly be called democratic” (2022, 103). A truly democratic community features citizens who are committed to inclusive improvement and who work to ensure that the democratic community can sustain itself and grow over time. The built environment can only do so much to facilitate democratic organization; the citizenry must supply the substance of a democratic community.

The vital importance of the boundary in Forestal’s perspective is that it affords communities a sense of ownership, which then lends to recognition, durability, and experimentalism. It is ownership that incentivizes communities to continue to invest time and energy in maintenance and improvement. It should be noted that this ownership does not mean that community members legally or physically own the infrastructure that contains their digital space. Instead, communities feel ownership over their bounded digital spaces because those spaces are constructed by the very interactions that occur between members. Users participate in democratic practice within communities to protect, maintain, and perpetuate the ability to hold communal interactions. Ownership, in this case, speaks more to how those spaces are to be legitimately governed as commons than to how space might be valued as property. This

distinction is best highlighted by Forestal's apprehensions about how ownership has previously been addressed in the digital context. She is critical of arguments that say democratic practice can only be fully realized if network features, such as algorithms, are owned and controlled by a public of users rather than governed by private corporations (2022, 174). Though she acknowledges, as do many other digital scholars, that algorithms indeed have negative effects on information gathering and deliberation among citizens online, she argues that the conversation about legal ownership is unhelpful for democratic community building because digital communities are not yet well established as durable social entities. "[Some] solutions... designed to increase individual user control have successfully wrested that control away from corporations without thinking about how to draw out and support the (existing) communities which must take their place" (2022, 174). In such cases, the achievement of public ownership came at the cost of an engaged and invested userbase. Forestal's arguments frame the importance of establishing a conceptual basis of ownership, of before turning to exercise democratic power – hence the need to build recognizable digital spaces via boundary-setting.

Lack of Democratic Digital Individuals

In the same way that the lack of democratic governance over platforms might be explained by the absence of durable democratic communities, the lack of democratic civic culture in digital networks might be explained by the absence of durable democratic individuals. I suggest that the tendency of digital users to prioritize "narrow interests and commitments" (Cohen and Fung 2021) is not only a normative problem but also an epistemic problem, arising from an insecure understanding of the role and duties as an individual digital user. Drawing from

Forestal's boundary approach, I argue that this uncertainty can be understood as the lack of effective private digital space for individuals.

As Forestal points out, identities and behaviors change as digital conditions are shaped and reshaped. In her Facebook example, the expansion of the platform into a "global community" led to the "disintegration of the sites communal bonds" (2022, 55). It is not so much that the community ceased to exist, but that the community did not have gravitational strength to keep together once boundaries disappeared. When Facebook turned back to community-focused boundaries, little had changed in terms of digital architecture. It was effectively a redistribution of digital space which carved up a globe-spanning public digital space back into discrete (relatively) private digital space. The execution was quite simple – users accounts were toggled to connect with close friends by default, which established a "close friends" boundary that filtered out the previously overwhelming number of global connections possible. In other words, the digital space surrounding the individual user shrunk significantly. This change effectively empowered individual users to take on the responsibility of establishing their own connections, of reaching out to others socially, and from there of building community relationships.

This change in user behavior can be attributed to a modification of the incentive structure for users, by tying the stakes of digital interactions to one's local community. It is, for example, reasonable to expect that a user would be more willing to express offensive and anti-social ideas if their audience consists of complete strangers on the other side of the world, than if their audience were their parents or local peers. Shrinking boundaries impact users by making such social pressures more palpable; people tend to act in more controlled ways if they feel that social consequences could be close at hand. Users then organize themselves to deal with in-boundary social pressures – rules and etiquette are established to maintain strong communal relationships,

voting systems are implemented to determine community governance, and leaders are chosen to take on communal tasks. This in-community development is essential in Forestal's calculations, as these behaviors form a basis for what interactions beyond the boundaries of the community might look like. Most importantly, however, is that these behaviors react to changes in boundaries. Communities take action to differentiate themselves from the digital spaces beyond their boundaries and, in do so, become internally efficacious and sustainably so. Without this reactive element driven by the community's need to see itself as a distinct entity, there would be little need for the community to develop skills, to establish standard operating procedures, or to adopt democratic practices that continuously improve the inner workings of community.

And this is the issue at hand on the individual level – that digital users, conditioned by the instant availability of instant and seemingly-free digital services, are disincentivized to develop their autonomous digital skills. The absence of this development then affects their sense of obligation to the digital public sphere. After all, if a user is reliant on the centralized services of a platform to meet basic computing needs, and they know that all other users are similarly reliant, then surely the provider of that service is responsible for meeting those needs and for maintaining the space that hosts those services. This viewpoint is corrosive for digital democracy because it fundamentally affects the possibilities for democratic development by eroding the ability of individuals to express personal needs. As individual users are decreasingly able to autonomously make decisions about their digital experiences, their ability to maintain meaningful preferences, opinions, and perspectives – all fundamental factors in Deweyan experimentalism and disagreement – become restricted and shaped standardizing tools of platform design and services. It is this reason that I argue that default platform ownership of digital space is problematic – not because “privately owned digital spaces... incentivize users to

act as consumers and products,” but because shifts in the digital economy towards services are incentivizing users to act as *clients*, whose participation in digital publics is entirely dependent on platforms. A Deweyan habit of experimentalism requires that individuals possess “curiosity and resourcefulness to imagine new possibilities and make changes” (Forestal 2022, 27). This cannot happen if users do not have the incentive to build skills towards achieving that resourcefulness, nor if, before users have the time to build skills, platform services emerge to render those skillsets obsolete anyway. To address these two concerns simultaneously, we need to look beyond the realm of software.

Historical Development of Networks

Before further discussing how Forestal’s proposals might be better supported through greater consideration of hardware, I look at Manuel Castells’s 2010 *The Rise of the Network Society* to clarify the relevance of hardware networks as a social structure. The network, as an organizational form, is nothing new. So long as there have been people capable of maintaining multiple relationships at a given time, the potential for framing those relations in a network model has existed. What is new, Castells tells us, is the organizational advantage of the network over hierarchical structure. In his accounting, the near-instantaneous speed of electronic communication overcame the inefficiencies that pre-electronic networking faced. Where once the hierarchical model was advantageous, as its chain of command was necessary for organizational stability, electronic networks now offered a similar level of stability while also solving the inefficiencies of hierarchical gatekeeping. As electronic, and then digital, technology began diffusing throughout global society, so did the network model of social organization (Castells 2010).

He posited that the rapid evolution of electronic technology first worked to maximize the productive potential of mature industrial economies. The technological shift in industrial processes increased productivity, made global chains more viable, and led to the paradigm of information technologies. Such advantages in directing productive force then incentivized further innovations in information, in what Castells describes as “a virtuous circle of interaction between the knowledge sources of technology and application of technology to improve knowledge generation and information processing” (2010, 17). These advances culminated with the Internet, which Castells points to as an exemplar of networked social organization.

For Castells, this historical development serves as evidence that the network structure has a direct impact on material production processes and subsequently on cultural production. From his perspective, not only is the network model ascendent, but information technology is so effective at influencing human behavior that systems now prefigure human social habits, preferences, and decisions. He calls this as the “pre-eminence of social morphology over social action” (2010, 69) – a theme we could use to describe the way that algorithms influence and shape user behavior in online platforms today. Castells does not say that networks have rendered individual decision-making moot; individuals still have agency and responsibility within networks. However, as with rigid hierarchies of the past, the roles within the network social structure determine the breadth of action that individuals within roles can take. Machines within a network are set up to perform tasks and the nodes of a network inevitably perform roles which serve the goals of the network core. Human users, who utilize and direct those machines, are similarly conditioned in certain roles and tasks. Networks, from Castells’s point of view, are no longer maps of potential relations between individual people, but of cybernetic relations influenced simultaneously by machine operation and human direction.

Server-Client Networks

The influence of machine relations over human relations is made clearer through analysis of centralized networks. The network model reframes power as located centrally where interconnections between nodes of a network are most numerous. As conditions at these critical intersections can influence the nodes that bookend those connections, political actors deploy strategies to capture social power within networks either by rerouting connections through their controlled nodes to forge centrality, or otherwise by occupying existing central nodes.

The first strategy of creating centrality can be described as the configuration of a server-client network. Under this network model, core servers act as main hubs for all network communications and can collect and distribute information along any line of connection. The connected machines of users are designated as “clients,” and their communication paths are directly linked to the central server. Though individual machines may have computing power and network potential, client machines in this network configuration are treated as auxiliary to the central server. Central servers function as the data hosts, and client machines gain ready access to server data through browsers and login credentials. Clients have minimal responsibilities for storing, protecting, and managing access to their data – such tasks are typically managed as a service provided to users. Clients are freed from the labor of data maintenance, which translates into low barriers of network entry, and which subsequently allows for easy growth of social interconnection. It is, for example, this core distributive organization that has allowed for the high levels of interactivity within the digital public sphere today. Social media platforms, and most all other forms of public-facing forums, rely on server-client models of organization.

While convenient in day-to-day operations, however, server-client configuration creates unequal relations with authorities holding substantial influence over clients and their data. They can access, modify, or restrict centrally stored user data according to their needs. As all inter-user communications necessarily run through the central server, central network authorities directly shape how and when users can communicate with one another. Though it is impossible to completely rid networks of asymmetrical relations – after all, network operation requires expert specialization, which is inherently asymmetric – the server-client model’s popular use, including in networks essential for public functions, poses potential challenges to democratic norms.

Nathan Schneider’s (2024) work on digital governance offers a helpful frame for understanding the political tensions that emerge from asymmetrical digital relations. He argues that digital networks are organized around “an *implicit feudalism* [which organizes] community management on the dominant platforms for online communities [around] a pattern that grants user-administrators absolutist reign over their fiefdoms” (Schneider 2024, 18). The metaphor relays the ways in which digital community governance is “subject to a power structure that is apparently absolute and unalterable by those who lack specific permissions” (2024, 18). Authority over a digital network is distributed from the top down, with administrator permissions and privileges granted in a personalistic manner similar to feudal title distribution. The legitimacy of the resultant hierarchy is justified through appeals to technical skills and experience. When new users join a digital space, they are, by default, subject to the rules of administrators and hold little sway over operations and governing rules.

According to Schneider, these underlying feudal digital relations have emerged repeatedly, despite significant changes in technology, as a habit among users. In the past, when digital communities were based out of the home servers of individual founders, feudal relations

provided a practical method of digital governance. For example, Schneider looks at the history of Linux software and how its founder, Linus Torvalds, has maintained a central authority throughout Linux's growth from an open-source project to an ecology of software. This authority was necessary in the beginning, as Linux began as a personal project of Torvalds's. To maintain the durability of the project, Torvalds maintained a hand on the wheel by personally contributing to updates and selectively integrating improvements made by the developers that he trusted. 35 years later, however, even after Linux has grown into a viable alternative to industry standards such as Windows and iOS, he still retains a technocratic power over the Linux ecology due to his possession of the core lists and records. Though users are free to use, edit, and share Linux versions for their personal use, Torvalds sets systemwide standards as he "decides which version is canonical and which community contributions it includes" (Schneider 2024, 27).

Feudal logic has remained strong, even as digital spaces have evolved into expansive networks of client machines and industrial server complexes, because the habituated acceptance of digital feudal relations has been coopted by new forms of network organization. One way has been through the subsumption of the feudal structure into the business models of modern server-client networks. Where we would expect digital business models to organize their networks through formal employment – that is, allocating wages in exchange for labor in service of centrally determined goals – platform authorities instead organize by distributing network privileges and authority directly. The digital fiefdoms allocated to trusted users, such as community influencers and moderators, act as compensation for the work that comes with its oversight and upkeep. This reliance on feudal privilege distribution makes sense from a cost perspective. As platform networks expanded, more administrative labor was required. Networks formalized feudal distribution as an incentive to offset the cost of labor compensation. Instead of

employees, particularly influential users became platform partners and brand ambassadors.

“Rather than criminally low wages,” Schneider observes, “platforms offer moderators the perk of unchecked power” (2024, 30). By avoiding the need to keep these digitally “landed” moderators on payroll, platforms are more able to dedicate efforts and resources to offering digital services for free. This is the essence of the access model that dominates networks today – content is sourced from users but captured and guarded as assets by network authorities (Wark 2004). The everyday details of digital space moderation are handled at the community level. Digital locals are expected to be self-sufficiently productive with regard to content. Central authorities are not – arguably, cannot be – expected to produce content, or trends, or other locally meaningful digital goods. Instead, central network authorities are only expected to maintain high-level digital goods and services such as platform regulation, cybersecurity, and infrastructural maintenance.

Where does this leave the average user? The abundance of “free” services has an alluring pull; a choice between convenience and autonomy tends to favor the former. The user – unconscious of the power dynamics governing their network and lacking the capacity to establish digital autonomy from centralized storage and services – willingly joins these server-client networks and becomes a client of these centralized services. And so long as users operate in the network, they are subject to the influence and decisions of feudalized authority. Even if users were to disagree with a design choice, with a particular policy, or with the imbalance of power, they are left with little recourse to change those conditions. This is the case for any server-client network, including the social media platforms on which we rely for digital public interactions.

The Power of Network Reconfiguration

Now that we have discussed how network structure can restrict the range of digital actions available to individual users, we can discuss why reform on the level of hardware, rather than software, is relevant to digital democracy. Software is easily modified by authorities in networks and can be deployed at whim to change network functions. This makes any boundary that is defined solely through software easily circumventable given enough resources. Boundaries pegged to hardware are more durable, as physical possession of computer hardware makes it difficult for any actor to unilaterally impose changes through a network.

It is tempting to assume that effective changes can be organized from within the software of platforms. The many different opportunities of participation available online seemingly equip users with tools needed to socially organize and to act collectively to achieve digital goals. We often see the digital realm countless collective actions, including information campaigns, petition signing, and online protest. Underlying these actions is an assumption that we can effectively duplicate conditions of physical society – that, through software, we can reshape barriers to democratic practice by socially constructing stronger senses of user data rights and other enforceable boundaries. Forestal's argument, for one, sees the average user as empowered through the software designs of digital environments and assumes that platforms can be persuaded to further implement digital designs that facilitate democratic practice among user communities. This may be true, but only under conditions where pro-democratic designs happen to align with the interests of platforms.

Reddit, for example, is lauded by Forestal for its ability to provide digital users with the senses of recognition, attachment, and flexibility needed for a democratic community. Under normal operations, these conditions indeed allow Reddit users a great deal of influence over their communities as well as opportunities for experimentalism. However, when confronted with the

need to quickly address external pressures, private platforms can and do favor corporate decision-making processes to override democratic dissent. This was the case in 2023 when Reddit moderators – volunteers elevated to leadership by their own communities – organized a platform-wide protest in reaction to planned API pricing changes. Moderators were concerned that pricing changes would “kill essentially every third-party Reddit client now operating... leaving only Reddit's official mobile app [which is] widely regarded as poor quality, not handicap-accessible, and very difficult to moderate a subreddit with” (u/Toptomcat 2023). The protest was carried out, thousands of communities went dark, and millions of users lost access to the platform’s content. The shutdown had network-wide effects, at one point even negatively affecting Google’s search index. Incensed, the Reddit CEO compared protesting mods to “landed gentry” and considered changing moderator removal policies (Ingram 2023). After 48 hours of blackout, Reddit authorities began threatening to directly remove moderators from their positions. Some communities reopened after two days of protest while others remained closed for two weeks. The moderators of the communities that held out were removed after two weeks and their communities were reopened with new moderators replacing them (Peters 2023).

This brief example highlights the frailty of privileges when faced with pressures from network authorities. Under normal operations, democratic processes and participation indeed shape how communities are run and governed. These processes imparted a sense of empowerment and of self-efficacy. But when push came to shove, network authorities easily bypassed these processes. This is because the access power of these users and their community leaders was never pegged to control over platform hardware; any control over a community was always conferred at the pleasure of network authorities. For a platform such as Reddit, a poster child for community-based governance, the protest’s resolution revealed underlying feudal

structures of the platform, as well as how divergent its governing structure actually was from its ostensibly democratic character.

The ability of Reddit to enact such decisive intervention arises not from the particular way that their software is designed, but rather from the fact that their server-network model acts as a final backstop against challenges to centralized authority. For all the advantages of flexibility that software allows, and for all the resources platforms can muster to optimize the deployment of software, network power ultimately relies on control over the hardware of a network. Because their central position affords them the ability to determine conditions for all connected machines within a network, when platforms and other authorities are confronted with dissent by users, they have the option to reconfigure connections directly on the hardware level, whereas the average user is limited only to access to software.

This power of network reconfiguration is not commonly discussed in the literature on digital networks as political actors. Scholarly focus on digital politics has often been placed onto algorithms, data storage, user agreements, and data tracking technologies (Zuboff 2018; Cheneval 2018; Mainz 2020). But all these technologies are reliant, both in development and in distribution, on a server-client network. By focusing on the products of network power rather than its source, we risk naturalizing the influential position of central network authorities as indispensable. To break out of this mold, we need to affect changes that reshape digital environments not only on the software-level but also on the underlying hardware-level.

At this point, Kean Birch's (2019) discussion on "technoscience rent" helps to illustrate the functional influence of hardware network configuration on social meaning within digital space. He addresses how digital rentiership has grown in popularity in digital networks and demonstrates how changes to a network's hardware configuration can create value for a central

network authority. This approach draws in another possibility – that hardware-level changes on a user's end of a network might be effective in disrupting centralized policies and be a strategy for establishing user autonomy in-network.

Birch argues that technoscientific rentiership is “characterized by the (re)configuration of a range of “things” (e.g., infrastructure, data, knowledge, bodies) as assets or capitalized property,” as a means of capturing economic rents from digital networks (2019). Firms attempt to exploit the protections afforded by copyright law by treating software as extensions of their digital domain rather than as distinct units of product. Software is never given to paying customers – it is only ever shared on a temporary basis. The traditional transfer of ownership that characterizes economic trade is undermined. Birch discusses a 2017 article that detailed how John Deere tractors were locked by software so that all repairs and modifications of said tractors had to be done through John Deere – for an upcharge fee, of course. In response, farmers in the United States began purchasing black market software for their John Deere tractors to break the proprietary lock and to conduct repairs themselves. The company John Deere subsequently lodged copyright complaints against farmers for infringement of their software copyright (Weins 2015). Such conflicts highlight the tension emerging over the property status of software with relation to hardware.

Birch shows how, through the ownership of devices, network authorities and users alike can exert influence over a network. The most important aspect for a network configuration strategy is control over the computer hardware that enables inter-user communications. The reason that clientelist relations are so common in server-client networks is that all user communications are routed through the computing resources of the network authority. With no way to compete with the concentration of resources at the center of networks, users end up

relying on network services to provide for all their communications. However, a re-configuration of networks oriented towards the optimization of user autonomy could reinvigorate the role of the user as a true participant in digital communities. In the case of John Deere, farmers did exactly that by severing the network connection between their tractors and John Deere's proprietary network. The farmers were able to maintain and maximize the benefits of their equipment while, of course, John Deere's network remains intact and able to service equipment with software. It shows that re-configuration strategies which loosen server centralization could empower individual users as invested members of digital communities while also maintaining vital functions of public-facing platform infrastructure.

Forestal's Shared Courtyard

I now circle back to Forestal's ideas of building democratic community and situate her proposals within a context that sees network structure and hardware ownership as influential over user behavior. Forestal keeps with a Deweyan approach in tracing the roots of democratic organization to the everyday interactions between users. Her argument is that democratic participation can be encouraged and facilitated through conscious architectural design. To highlight how this works, she provides an example of the shared courtyard. Forestal vividly illustrates how the boundaries of a common space can define the tenor and purpose of a shared space. As she puts it:

“The courtyard is clearly demarcated by its boundaries; residents' houses visibly form its limits. As a result of these clear boundaries, it becomes easier for residents to acknowledge that they share the space with others (their neighbors) and thus have a shared (collective) interest in, and responsibility for, participating in its upkeep and maintenance” (2022, 42)

Though the courtyard is not the axiomatic metaphor of Forestal's argument, it conveys the Deweyan observation that public space and interest emerge from the intersections of individual interest. Most importantly, the courtyard frames a way of thinking about the boundary between public and private digital space. The shared collective interest that arises from architectural cues, Forestal asserts, forms an important basis for digital communities but that individual interests necessarily contrast it. The "residents' houses [which] visibly form [the shared courtyard's] limits" are completely closed to other residents, unless (presumably) consent for access is given by the owner. The contrast is necessary, as the shared space of the courtyard loses meaning if the majority of user activity occurs in "public" rather than in a private domain. Within private space, the individual is free to make decisions that affect his/herself without needing to negotiate and compromise with others. That threshold between private and public is what differentiates individual interest from common good. In the absence of private space, the individual has no reprieve, no safe space in which to have exclusive preferences and interests. In public, under the constant gaze of social others, an individual is more exposed to social influences and can be expected to act in ways that diverge from, or even contradict, their own felt preferences.

However, these assumptions about private versus public behavior only hold if there is a distinguishable difference between private and public. In physical society, the shift from private to public is marked when one steps out the front door, or when one becomes aware that their actions are being watched. Individuals adjust their behaviors accordingly. In digital spaces, however, the default condition is that a user cannot be sure whether they are being watched or not. This obfuscation of the border between public and private digital space is the result of the server-client network, which uses public-facing digital architecture for the delivery of personalized services. This leads to strange overlaps where the ostensibly "private" space of

users is also publicly accessible by other users. In most cases, users are unaware of when exactly they are being surveilled by peers and other audiences. Instead, users must guess and shape their digital behaviors with a considerable margin for error. Some users even forego self-curation altogether and turn to strategies of creating alternative “burner” accounts to minimize the potential of mistakenly revealing private information to an attentive local audience (Dewar et al. 2019; Kang and Wei 2020). These norms and everyday strategies in navigating social cyberspace highlight the fact that users often feel a gap in their ability to control public access to their immediate digital spaces, even when those spaces are constructed by their own digital data.

The lack of user control over these functions negatively affects the digital identities of users, particularly as it relates to their social responsibility as potential citizens. Responsibility follows from self-efficacy. The clientelist habit disempowers digital users, and they naturally calculate that the obligations of maintaining a digital public sphere fall on those who can actually change digital environmental conditions. As central network authorities are in control of all platform operations and maintenance, they are made responsible for any negative behaviors or occurrences on their platforms. Without any stakes in the matter, users act in digital spaces with minimal concern for consequences because, put simply, it is not their problem. Certainly, if a user is offensive enough to garner attention from other users and network administrators, the offending account may be removed. However, barriers to re-entry after discipline are not insurmountable. As users with burner accounts are well aware, the creation of an alternate account is more inconvenient than it is costly. Bad actors can easily circumvent platform discipline and because they know that platforms are bound to maintain normal operations in service to users, there are few social pressures that can convince them to self-moderate their digital behaviors. Without the responsibilities associated with private space and left out of the

feudal power structures of centralized networks, the average user is effectively untethered to consequences and acts accordingly. This bodes poorly for the establishment of digital citizenship. If we are to move away from the habits of the client, and towards the habits of the digital citizen, users need to be afforded some palpable stakes and sense of investment.

Front Doors to the Courtyard

The relevance of establishing private digital space is in introducing a notion of ownership that can convince users to take on greater responsibility and develop themselves as digital social individuals. Though Forestal's argument deemphasizes this imbalance in ownership between the user and the platform, I believe it to be central to this discussion. She argues that "while questions of ownership and control are important, we must place these questions alongside concerns about the *communal* effects of algorithmic design if we are to build environments supportive of democratic politics" (Forestal 2022, 29). Though agreeable, the argument presumes that, given enough user input, "algorithms [can be democratized] in ways that... increase user control over their digital environments and the algorithms that structure them" (2022, 142). I argue that such gains in user control would still be subject to unilateral changes by platforms, for reasons potentially obscured by the black box nature of private business, if users hold no leverage in negotiating such changes. The way forward is to not only rely on software but to design digital environments through the reconfiguration of hardware as well. By doing so, we establish a stronger distinction between public and private digital space which, in turn, gives users a stronger basis upon which to build senses of communal recognition, attachment, and experimentalism.

As Birch's (2019) example illustrates, though digital equipment such as a tractor may rely on proprietary software, the user enjoys personal power over his or her property in moments of discontinuity when a user can operate independently without network connection. The logic behind proprietary software locks is that they force the consumer to rejoin the network at specified points in time – in this case when a tractor requires repairs. However, by extending those moments of discontinuity, farmers forestall their reliance on the network. In participating in the network at their own pace and on their own terms, individual farmers can assert power over the digital space that their equipment occupies – that digital space which is rightfully their own. If we can apply this same strategy to the context of social media to ensure more autonomy for users and a greater sense of investment in their digital environment. By reconfiguring networks and creating opportunities for discontinuity, a user gains effective network privacy while maintaining digital capabilities.

The proposal for realizing this is straightforward – users should establish private home-based networks, centralize their data storage onto one point within that private network, and then limit public network traffic to one entry point. In other words, users should form server-client networks in miniature, focused entirely on their own hardware and with a single front door to the public Internet. Like a private home, a private network would afford boundaries, to separate the user from the public, while ensuring “room” for basic computing activities. Local data storage with secured connections between user devices would ensure both privacy of personal information and immediate access as needed. Moreover, if the Internet traffic of all home devices were routed through a singular point before exiting the “door” to the public Internet, users would be afforded an additional opportunity to review outbound data before it is sent out. Similarly, inbound information could be screened at the singular entry point before its final delivery to the

user's personal device. This configuration would give users a centralized structure through which to manage public-private exchange.

Such a strategy has benefits on the individual and community level. The creation of a durable private digital space contributes to the establishment of digital citizen habits. The ability to retreat from public-facing networks grants users a level of autonomy. That autonomy, upheld by the maintenance of owned hardware, presents real stakes and incentivizes the individual user to seek solutions. As digital autonomy entails lessened reliance on public networks, the individual user would be driven by personal interest to reduce their burdens by collaborating with other autonomous users who face similar pressures. In other words, by presenting commonly shared problems of necessity to be solved, the establishment of private digital space would help the individual user form a firmer sense of digital self and see other users as digital equals. This mutual recognition would encourage the adoption of democratic habits, particularly those of a responsible citizen, as individual users will begin to see their interests as tied to a common public interest. Additionally, the possession of private digital space by users would aid the realization of Forestal's principles of recognition, attachment, and experimentalism in democratic community building. First, with a firm sense of digital self, users would join communities with genuine interest and, following Dewey's logic, shape communal institutions to reflect their lived values. Though the idea of private digital space raises concerns that individuals would retreat from public interactions altogether, given the value that users find in engaging in public networks, it is unlikely that a systemic possession of private digital space would threaten to unravel social networking. Rather, it would benefit social networking. By placing responsibility for digital data in the hands of users, there is a reduced need to rely on evasive strategies, such as when users create multiple profiles to obscure sensitive data. Interactions

between users would be more genuinely motivated by shared interest and positive information sharing. Secondly, the habitual dedication of users necessary for maintaining their digital autonomy could be expected to carry over to communal contributions. If we see communal participation as method of collective problem-solving, users will not only see value in perpetuating community but also in contributing valuable knowledge when they can. The attachment that comes from this interactive relationship between digital citizen and community – one that is not influenced by a clientelist expectation of goods as owed – would be all the stronger and self-reinforcing. Finally, we would expect the experimentalism of a community to flourish, for the simple reason that lessened reliance on centralized network services would push citizen-users to innovate. Rather than relying on centralized networks to identify and solve all the problems that emerge in digital networks, we draw from the greater well of human experience that exists among the many. And though perhaps not every problem will be efficiently solved by relying on such democratic practice, we can at least encourage the development of this source of problem-solving potential rather than placing all hopes that clientelist networks will be able to solve all issues. We can center digital democratic practice on users as digital individuals who habitually act as digital citizens, rather than as clients of platforms or networks, by configuring hardware to empower users. By instilling users with the habits of digital citizens, and by building digital communities to reflect lived democratic values, we can move closer to realizing digital democracy.

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