DIGITAL CHALLENGES TO DEMOCRACY: POLITICS OF AUTOMATION, ATTENTION, AND ENGAGEMENT

H. Akin Unver

Assistant Professor at Kadir Has University and Fellow at Oxford University and Alan Turing Institute

Abstract: In the last decade, digital media platforms have grown out of their mere communication functions and became inherently political governance systems. They connect politicians, voters, large businesses, and major advertisement companies that commodify user attention. This is already changing the nature of the capital-politics relationship and is likely to significantly alter the nature of resource generation in online and offline political networks. Democracies are particularly vulnerable to the shift in online governance and rent structures due to higher Internet penetration per capita. The current business model of digital engagement, advertising, and political messaging are prophesized to lock all sides into a vicious circle increasingly threatened by more extreme content. Fake news, trolls, bots, and algorithms exploit this rent generation cycle by feeding on measurement metrics of the current rentier economics of digital media platforms. This trend has generated degrees of concern around concepts dubbed as "networked feudalism," "Authoritarianism 2.0 or 3.0," and "Cyber-Communism." This article evaluates the claims of all three main critiques of online political structures from a political engagement and resource generation perspective. The article argues that digital space is still very much a democratic space, albeit imperfect, that needs to address two fundamental issues: fixing metrics of digital engagement and bringing human biases in algorithms into more expanded public and political debate. Ultimately, "saving democracy" in digital space largely depends on institutionalizing these two processes by giving users greater sovereignty over their data.

Digital interconnectedness was prophesized to usher in greater understanding between people. It was supposed to be good for democracy, political participation, and representation of disenfranchised segments of the population. Digital communication did some of these things, but failed to fulfill a range of other expectations. The golden age of information and communication technologies (ICTs) has witnessed greater political polarization, fiercer far-right, anti-immigration and authoritarian movements, and greater confusion within online

interactions through mass oversupply of information.[1] Social media has brought like-minded people closer together, but widened the gap between opposing views.[2] Digital tribes have begun to cluster around their online tribal structures and developed hostile views toward opinion, news, and expression from other tribes.[3] Information-seeking behavior, long heralded as one of the strongest political tools of citizens, has been significantly manipulated by fake news. With the help of algorithmically generated search results and automated accounts known as bots that flood online debates with incorrect or old information, the very nature of information flow is disrupted.[4] Information overload did not make people more "rational" and strengthen their verification heuristics; it made them more emotional and automatic in their responses toward content validating their pre-existing biases.[5] By playing into the "feel good" aspect of human psychology, factually distorted news, produced in exponential quantities, have found a life of their own and influenced significant political processes, the most important of which being elections, the foundation of democracy.

Furthermore, perhaps more problematic is the role of technology companies in democratic participation. The social media revolution and its impact on social movements, political engagement, and information-seeking has rendered top social media platforms such as Twitter, Facebook, Instagram, and YouTube political actors, at least on par with media corporations. News feeds and featured posts are run by dedicated algorithms that are either tailored according to a user's past digital behavior, such as likes, comments, and engagement with posts, as well as advertisers who pay large sums of money to be featured. This puts technology companies at the center of political information-seeking and agenda-setting, two fundamental processes of democracy. Furthermore, hate speech, group-targeting, and fake news disseminated by bots significantly increase the volume of negative messaging online, incurring greater weight over how policies are communicated and how voter preferences are formed.

At the heart of the problem is the "intentions versus business model" debate: namely, the discussion over whether technology companies are deliberately, or at least passively, facilitating negative political messaging, or if the issue is more structural, belonging to the for-profit business model of technology as a vocation. Maximizing user engagement to increase revenue, for better or for worse, inevitably leads to more extreme or emotional messaging on social media platforms and balloons into disproportionate effect by platform algorithms. As far as algorithms are concerned, users' engagement volume, favorable or unfavorable, with cat videos and political violence belong to a similar demand pattern. The kind of political messaging users "like" and engage with, including political figures they support and share, lead to the appearance of similar figures and messages online, leading to self-

generated and algorithmically supported filter bubbles. Without equal exposure to different views, users end up thinking their view is supported by the rest of the population and develop more extreme and entrenched opinions on politics. This has led to unprecedented levels of polarization over emotionally charged policy issues, fed by bot-generated news that fit into our version of events. Bombarded with information overload, we rely on heuristics; we end up sharing what our like-minded friends share and submerging into the opinion tribe we create for ourselves, with the help of a business model that monetizes our attention.

Digital Challenges to Democracy: Networked Feudalism

The mainstream understanding of digital feudalism builds upon the Habermassian interpretation of enclosure and distributionary monopoly to examine how political participation is negatively influenced by private technology actors.[6] According to this interpretation, technology companies' monopoly over "closed technologies," software and platforms that don't allow users to alter or modify interface, incurs significant biases over how users interact with digital communication, which in turn alters how political participation through these technologies reinforce centralized control structures, rather than participatory politics. If we accept the Marx-Engels influenced interpretation of feudalism as a system where the power rests with those that control modes of production, this logic is partly true.[7]

However, the definition needs some expansion, especially since the original understanding of feudalism refers to a rather different state of affairs than just centralized control structures. Feudalism in its origins and rationale orbits a military logic of creating a fighting caste that is organized into three layers of power separation: lords, their vassals, and fiefdoms.[8] Even when feudalism as a concept is stretched, it includes the clerical establishment—religion—and its binary oscillation between the wielders of armed authority in the control of the means of production.[9] The fundamental logic of feudalism is the supply of protection in exchange for service. Those with either material resources of protection, like the ability, authority, and legitimacy to raise an army, or religious capital, including the ability to bless, shame, or excommunicate with authority, oversee vassals and fiefs that supply the system either with military or non-military services. To that end, it is not those who control modes of production, but those who can coerce modes of production that accumulate the real power in feudalism.[10]

Therefore, the understanding of digital feudalism that is more in tune with technology would be rather different. First, it would have to entail a fundamental understanding of security and survival, since these two pillars form the basis of why feudalism emerged in the first place. Yes, cybersecurity is an important aspect

of digital space. But it is one that is still not fully independent from physical variables of security. Second, it has to link security provision with rent generation; namely, the rent generated in digital space should overwhelmingly feed the primary providers of digital security. The for-profit business model of digital technology is indeed in danger of developing feudalistic tendencies, but advertising and digital content by themselves cannot be interpreted as feudalistic structures. Digital security is not a monolithic term and means different things to different players in the digital domain. For most users, digital security implies identity, asset, and basic rights protection in an interconnected domain. It can imply anonymity, VPN-masking, and privacy measures. For online sales and advertising companies, security means trusted exchange, meaning no fraudulent transactions and better authentication, along with cybersecurity of their network: defense against malware, viruses, and worms, etc. For governments, the challenge is more complex, since they must navigate both their own security considerations, such as access control, monitoring, and surveillance, as well as constitutional and legal responsibilities to address the security concerns of citizens and businesses.

Furthermore, the control of enclosed digital territories by a small group of powerful corporations, or closed groups of programmer oligarchies in control of algorithms that have power over the digital experiences of millions of people, still does not fit into the feudalism concept. Resources generated from these interactions don't necessarily determine security relations in this network, and power is still very much determined in profit metrics, rather than security metrics. Deriving from securitization literature, the debate on digital feudalism does not have a referent object.[11] We don't have a commonly agreed understanding of what needs to be protected, nor a primary "warrior class" that provides security, so that a singular feudal organization around it can be formed. We can certainly talk about feudalisms embedded within micro understandings of securitization in a digital order, but this is never discussed as such in the existing debate. More importantly, neither states nor technology companies are at the top of the digital food chain. States challenge other states, as well as nonstate actors; in turn, states, too, are challenged by nonstate actors themselves. This prevents the emergence of a commonly agreed-upon concept of feudalism, as different actors securitize the Internet and digital interconnectedness in often mutually exclusive ways with no single actor dominating the security modes of production of the digital space.

From Each According to His Attention: Cyber-Communism

What about, then, two other possibilities to "digital democracy" that are theorized in mainstream debate: Cyber-Communism or Authoritarianism 2.0/3.0? There are several interpretations of both authoritarianism and communism in

digital space, mainly structured around the redistribution mechanisms of both, along with the role of the state in production modes and with respect to their citizens. Digital communism is hard to distinguish between digital Marxism and socialism as they are discussed in mainstream debate, but it is often interpreted as free distribution of digital commodities, such as eliminating intellectual property rights, or presenting commercial software, codes, and algorithms in open-source venues.[12] Another variant of digital communism focuses on decentralized Internet relations, favoring autonomous structures of self-administering digital systems, much like the social economy model posited in Leninist variants.[13] This reflects one of the core dilemmas in communism, whereby a centralized distribution of goods and services, along with autonomous social economy structures, are equally advocated.[14] More specifically, how the notion of common access to file and data sharing platforms, as well as knowledge cooperatives like Wikipedia, the Open-Source Movement, and pirated material, relate to modes of production is the subject of extensive debate.[15] General social knowledge, in Marxist terms, could be a direct force of production, and thus systems and platforms that are tasked with the accumulation of this general knowledge are parts of the collective capital.

Cyber-Communist variants, including Marxism and socialism, have been constructed in close proximity to the politics of media power in the writings of Dallas Smythe, Hans Magnus Enzenberger, Herberg Simon, and Graham Murdock. Dallas Smythe was one of the earliest scholars to conceptualize the political economy of media and communications within the context of Marxism, using eight analytical nodes.[16] These eight analytical nodes are materiality, monopoly capitalism, audience commodification and advertising, media communication as the base of capitalism, labor, technological determinism, dialectic of hegemony, and dialectic of science. Hans Magnus Enzenberger expanded upon these nodes by conceptualizing the media structure as the "mind industry," which prioritized the sale of the existing order. This order isn't the sale of a product, as for Enzenberger, modern communication technologies "have no product."[17] Instead, the modern structure of technology sells itself, and it does so by selling better versions of users back to themselves in the form of social approval, including likes and retweets. This was later reconfigured by Herbert Simon's emphasis on "attention as a commodity" and "attention as an economy."[18] Audiences are exploited by the very means by which they engage with media—attention—and that is then sold as a commodity in the form of advertisement. For Smythe, this was less exploitation and more surplus value generation, as he constructed users not as passive objects, but participants in a wider structure, driven by their desires for approval and consumption. Users are taking part in media capital generation structure, not because they are obligated to, as in communism, but because they choose to do so, as in

consumerism. Graham Murdock built upon these claims to construct the power of media companies' production means within the context of their agenda-setting power and on their "economic and political structures." These structures are built on their ability to "sell the status-quo," rather than a specific line of product.[19] In that line, both the approval and criticism of the system has to be communicated through the system itself, commodifying all exchanges regardless of their sentiment and belief in the status quo.

Simultaneously, a separate line of "culture industry" scholarship established more direct connections between media regimes and politics. Horkheimer and Adorno both diagnosed the rise of German fascism, Stalinist lineage, and consumer capitalism in the same light: failure of the revolutionary potency of the working class.[20] For both, the failure of workers to generate their true movement has led to their bandwagoning with Hitler in Germany, hijacking by Stalinism in the USSR, and exploitation by capitalism in the US. Marcuse diagnosed this continual failure of the working classes through "technological rationality": the emergence of ever more sophisticated technological interactions that generate individual reaction, not action.[21] Marcuse understood technology as an inherently addictive domain, whose constant evolution into more advanced forms of interface and immersion was creating constant alienation. In adopting from Marx's notion of fetishism, Lukács hypothesizes this as "phantom objectivity."[22] Phantom objectivity inserts technological advances into the heart of human relations in a way that intensifies human interactions but overwhelms human attention to the extent that it conceals the fundamental nature and reflexes of human communication.

The nature of how digital media platforms are designed both in terms of interface attractiveness and social validation mechanisms, specifically reinforces this mechanism of addiction. According to Christian Fuchs, such feedback loops of attention, attraction, and commodification inevitably lead to a reduction of human agency toward mere consumption of digital advertisements.[23] In addition, what is essentially consumed aren't products themselves but cultural commodities to which humans belong. Digital media systems have to sustain versions of the message that capitalism is the only possible system that can produce and disseminate meaning for consumers and the cultural context to which they belong. Indeed, Smythe posits that "the starting point for a general Marxist theory of communications is the theory of commodity exchange," which in our terms is how attention to digital content becomes a currency that rises into the primary medium of financial interactions. Fuchs pursues this line in asserting that social media has become a new medium of capital accumulation, which attracts participation and engagement through attractive, and often addictive, platforms, including the "promise for change" and championing human agency to "make a difference." This

was evidenced in the debate on "Twitter revolutions," "participatory cultures," and e-petitions, digitizing some state functions for citizen engagement, and generating a snowball effect that eventually clustered bigger investors and large quantities of people into the same manageable and pliant medium. "Platform Imperialism," as Dal Yong Jin posits, is structured upon this very premise: digital platforms sustain their hegemonic status by acting as the medium of dissent about all digital relations and interactions, including those that contain criticism about these platforms.[24]

Ultimately, digital communism debates concern a broad number of issues ranging from corporations' online commodity production, including capital concentration and centralization in digital platforms, production of media capital, and labor relations of digital platforms, and commodity circulation designed to sustain their hegemonic status at the heart of the means of digital production. Too often, however, the term "digital communism" is used as a pejorative term to define open-source software, content, or crowd-sourced platforms and digital initiatives like Innocentive, Hypios, Innovation Exchange, Kaggle, Wikipedia, and so on. However, it is built on a vision of information society as one that is ruled by transnational platform corporations, pervasive surveillance, and intrusive governments. The general purpose of the system is its own continuity and status-quo power, with those that have the greatest market influence also possessing the largest weight over content production, curation, and directing global digital attention. While states' impacts are measured through their control over news and agenda-setting power online, "platform capitalism" is engaged in a symbiotic relationship with them, building their independent networks of influence and framing online, while playing along with state interests to recentralize power back in the hands of a controllable elite.

Believe, Obey, Retweet: Authoritarianism 2.0

Digital Authoritarianism, as conceptualized in mainstream tech debate, is mainly about order and control-oriented, top-down practices that incur restrictive costs for online expression, engagement, and digital rights.[25] Another variant of this conceptualization is the proliferation of pro-fascist messaging in the form of Internet trolls and bots and the diffusion of far-right extremist content on the web.[26] The 20th century debate on technology and the management of life as a whole, as posited by Foucault and Canguilhem, fits modern ICT debates better.[27] The way technology and science are ordered by fascist regimes eventually becomes a social force, extending beyond its utilitarian origins, and starts determining the bounds of expression and rights in a modern society. As far as the centrality of technology is concerned, there may be some cases of arguing for the validity of "techno-fascism." But authoritarianism is also heavily state centric: "...all within

the state, nothing against the State, nothing outside the state."[28] There is no higher organizing order other than centralized and repressive regimes that are substantially different than the private-capitalist structure of modern technology.

Authoritarianism-as-modernism pursues the same radical understanding of progress compared to older forms of European conservatism, seeking to experiment with newer and more repressive forms of organization in social life to maximize progress as understood by advances in science and technology.[29] In such experimentation with social life, all sub-groups of organization are suppressed to uphold the dominant single group and its symbols. Views that don't conform to the hegemonic ideology are eliminated, along with competing forms of labor organization; both are far from the diversity seen in digital space.[30] Umberto Eco's reconceptualization of "eternal fascism" does bring certain new elements to the old definition.[31] However, none of Eco's fourteen points, be it "rejection of the Enlightenment," "disagreement as treason," or "contempt for the weak," apply to the digital space. Despite problems with resource generation mechanisms, ICTs are modernist, rife with disagreement, and often mobilize to aid the poor and those in need. A much better conceptualization of digital media fascism was made in Herbert Marcuse's "one-dimensional man," whereby in a consumer society "humans become extensions of the commodities that they buy," generating their self-worth and self-view through ownership of technology.[32] This renders technological societies, by definition, fascist in Marcuse's view as it relates to total control of social relations through a centrally overseen network of interactions. Although all social interactions are overseen and monitored by states and technology companies, it is currently hard to assert that this surveillance mechanism has generated an Orwellian system of direct repression. This point was later criticized by Alasdair MacIntyre for being excessively pessimistic of consumers' passivity in the face of advertisement and techno-determinism, arguing instead that users have agency and they must be criticized for their choice in sustaining dysfunctions of tech capitalism, rather than pitied as a passive sufferer.[33]

ICTs did have positive impact on political participation by making political campaigning, grassroots networking, voting, information-seeking, and even protesting easier.[34] But it also made censorship, surveillance, citizen profiling, and tracking highly granular, as well as rendered extremism and disruption more problematic.[35] States have adapted to ICTs and their impact on politics through a multitude of measures, ranging from censorship, information overload, and troll and bot armies, tor restrictions, heavier controls on ISPs, and using ICTs to expand surveillance powers as a whole.[36] Although for countries like China, Iran, or Russia, ICTs were already securitized to merit nationalization of platforms and search engines, for much of the Western world, the Occupy Movement, Syrian

refugee crisis, and the rise of the Islamic State became reasons for increased counterterrorism surveillance and restrictions online.[37] In the same vein, foreign and domestic terrorists and extremists in the West substantially benefited from the Internet and ICTs, recruiting, planning, and communicating online. Moreover, digital platforms themselves have adopted a hybrid role between dissenters and governments. Numerous studies have demonstrated how digital tools, essential for protest and dissent planning and coordination, deliberately or passively worked with governments and intelligence agencies to help spy on these movements.[38]

In that context, digital authoritarianism debates are also strongly related to how artificial intelligence interacts with digital communication platforms. As the Internet and digital interconnectedness widened the space outside states' control, states fought back by investing in surveillance technologies that aim to centralize communication regulation, monitor large segments of the population through real-time data, engage in mass propaganda, and do all of this with a diminishing reliance on slow human capital.[39] Both machine learning and artificial intelligence architectures are built on the premise that human relations—political, economic and social—can be distilled down to common characteristics that are identifiable and sortable through non-human mechanisms.[40] Algorithms are key to offering digital media services reliably and continuously to make increasingly more complex decisions, and to streamline collection and storage of human behavior into quantifiable patterns. From that perspective, there is an inherently authoritarian dimension to automation, orbiting mass-surveillance and the collection of unprecedented amount of citizen information in the government-private sector nexus.[41] Yet the nature of human biases embedded in algorithms are usually omitted from the wider debate on their political effect. When the Shanghai Jiao Tong University created a facial recognition system to "predict" criminal behavior, for example, testing convicted criminal faces against those of innocent civilians, it completely omitted the possibility that the variances of facial expressions could be a result of prison conditions, rather than dormant criminal tendencies.[42] This embedded bias then became the foundation of an algorithm that, in theory, could test the "criminality" of individuals based on their facial patterns, potentially leading to significant misjudgments.

Algorithms have also been offered as a sacrificial lamb by governments and tech companies against mounting criticism of automated bad decisions. When Facebook and Google pushed anti-refugee campaign content in key swing states before the US elections, both blamed algorithms as the culprit, arguing that the automated increase in screen time of such content was a result of advertisements.[43] Regardless of the intentions of specific tech companies, the fault lies at the heart of a wider business model.[44] The foundation of the contemporary digital media system rests

on the monetization of digital attention through metrics that emphasize engagement, such as likes, comments, and retweets, which, as a social behavioral trend, tends to cluster around emotionally-charged, extreme content.[45] Such content then appears more frequently in users' news feeds and selected posts, offering ad companies the ideal intersection of profitability and ad efficiency. This locks all sides in a polarizing vicious circle whereby extreme content gets more interaction and is measured as more popular in online platforms, leading to the clustering of exponentially greater volumes of money around the production and dissemination of such content.[46] This directly feeds into political campaigns and political advertising, in addition to the tone of regular political messaging people encounter in digital platforms. In a medium that is designed to encourage and reward extreme messaging with engagement, the natural result is unprecedented polarization and offline political engagement with leaders that sustain this extreme narrative.[47]

With the way both production means and resource generation mechanisms are structured in digital communication, trolls and bots are an inevitability. Trolls address hyper-engagement with emotionally charged content, exploiting psychological response mechanisms of online users. What bots do is simply increase troll effects exponentially, bombard users with larger volumes of fake or manipulated content, and exploit the very organizational model of online interaction mechanisms.[48] Unchallenged by counterarguments from rivaling views, people submerge into their respective truths, eliminating the effect of doubt and maximizing self-righteousness about one's own views. People, too, are responsible for this state of affairs by blocking and muting tools provided by the system, again, as a result of their own demand. What renders social media and digital advertising link as "authoritarian," perhaps, is less the top-down organization of the system, or the presence of a dictatorial body on top of the system, and more the culture of engagement and resource generation. All levels of the digital hierarchy are operating in this culture as parts of the same asymmetrically automated relationship.

Except for All the Others: Can Digital Space Remain Democratic?

Digital space is not feudal because the production means are not centralized around a single, overarching understanding of security and survival that determines the nature of feudal relationship. It is not communist because the entire business model of online rent generation is structured around commodification of attention in a vaguely controlled capitalist environment.[49] It is also certainly not fascist because it is not driven by central, direct economic planning, it is not quite militarist, and despite problematic applications, it does not constitute a state of suspension of the rule of law. More importantly, calls to reform digital space are not met with imprisonment or death. Digital space is still a democracy doomed

by its own rent-generating mechanics and institutions, similar to the challenges associated with offline democracy. The capitalism-democracy nexus has survived multiple crises and scored a longer lifespan compared to all other alternatives, and despite current ills, the digital space is already democratic, compared to other alternatives, albeit imperfect and vulnerable to manipulation.

The question of digital democracy links closely to debates on virtual community associated with studies by Howard Rheingold, Manuel Castells, and Craig Calhoun. Rheingold's *The Virtual Community* constructs the web as a parallel reality to physical realities, with a fundamental transformative power to affect physical politics and social relations.[50] This transformative power came from the Internet's ability to offer a separate medium of interaction, rather than merely mirroring or complementing physical reality. It is there that Rheingold's alternative realities of the Internet is an act of escapism, derived from his study of The Well (Whole Earth 'Lectronic Link, one of the oldest virtual communities still active) where hierarchies and power relations are fundamentally restructured in favor of dissidents in the physical realm. This escapism also contains a potential to establish new communities, alternatives to those in the physical world, with the ability to impact, alter, and augment those physical communities. Castells does not separate virtual and physical communities; rather, he constructs digital space within physical space, as a part of physical communities. *The Information Age* depicts on-screen experiences as an extension of the physical experience, instead of alternate to it, but one that is unifying and centralizing.[51] Castells diagnosed this unifying and homogenizing aspect of the Internet as the source of how virtual space can change reality in the physical work. Later in *The Internet Galaxy*, Castells argues that the growing irrelevance of geography through the Internet leads to a restructuring of social and political relations online through the creation of a digital community with similar political and world views and potentially having similar expectations from political processes, locality, and representation.[52] Craig Calhoun focused on this indirect relationship and the resultant loose communities it generates by offering a middle way argument, stipulating that digital relations are supplementary to physical relations, rather than an alternative to them.[53] Calhoun locates the power of digital community, engagement, and representation specifically in this reinforcing space; it is the multiplier effect of online social relations that enhance physical interactions and communities. Yet Calhoun was skeptical about the democratizing aspect of this multiplier effect. He found relations that are not culturally specific as inherently weak and lacking the power to reinforce representation and engagement. Digital space, therefore, brings like-minded people closer together but cannot create new political possibilities beyond those to which digital actors already subscribe.

This debate is important because it links directly to current political trends in online versus offline political engagement. Despite the endogeneity problems associated with Internet use and political engagement, the relationship between the two is well established when controlled both for interest and efficacy or trust.[54] Furthermore, digital space has so far recorded more vibrant criticism in social media, chat rooms, or messenger programs in both liberal and illiberal regimes, although the exact expression of this dissent yields different results in numerous studies.[55] Pippa Norris, for example, demonstrated how participation in e-petitions, protests, and sit-ins has been altered through digital communication technologies, although her later work with Ronald Inglehart demonstrated how political polarization in Western democracies have largely resulted in a backlash against the much-prophesized digital democracy argument.[56] In a study on American, Australian, and British young voters, political use of social media directly correlates to offline political activism, with similar patterns of polarization observed both online and offline.[57] In another study, citizen-initiated campaigning outside the United States is observed as a political participation method largely benefiting the hegemonic party with little advantage to opposition movements.[58] The relationship between political engagement and social media use is still being challenged, however, as numerous studies have found mixed results related to how online and offline political participation work in tandem.[59]

Current contractarian trends in citizens' political engagement, evidenced by the e-petition movement in the UK, Estonia's transparency-oriented online state functions, Finland's open ministry, or Brazil's Marco Civil, are some of the examples of new adaptive processes of digital democracy.[60] Despite its dangers of commodification, Facebook's "town hall" feature, which connects voters with their elected district representatives, is another pioneering move that will certainly bring together its own set of engagement problems, as well as irreversible new expectations of transparency and engagement.[61] Election infrastructure will retain some aspects of vulnerability given the pace at which both hackers and patchers of global technology compete with each other. Fake news will not go away, nor will trolls or bots, since similar influences exist in offline media systems. People have outgrown them as they adapted to older technologies and will eventually outgrow digital spoilers as well.

The fundamental problem of digital space is its main currency, attention, which calls for a new political economy model properly contextualized in global politics. To that end, although digital space isn't Marxist, some of the most fundamental critiques of digital space come from the Marxist tradition. Digital communication platforms are the bridges between commodified human attention and media corporations that have become business ventures. In being so, they

automatically feed in content that elicits greater volumes of engagement, leading to more extreme types of message proliferation and attraction of capital online. This emotional attention trap fuels the rise of digital spoilers like trolls and bots and benefits leaders of extreme, and often fabricated, views. In a digital information economy of oversupply, users rely on heuristics that help validate information, which clusters them into digital tribes made up of people that think alike. Thus, interactions with opposing views are minimized, generating unprecedented polarization. Furthermore, access to the Internet is still very much defined by global and regional inequalities, preventing us from coming up with an overarching conceptualization of democracy. Digital freedoms and capabilities mean different things in different parts of the world.

However, this polarization argument needs to be contextualized. Although it has become a truism that social media contributes to political polarization, four studies remind us to contextualize these claims in context-specific cases. Vaccari et al. demonstrated how Italian and German users' political disagreement patterns regarding 2013 elections on Twitter persisted despite their ideological homophily.[62] This is one of the major warning signs that polarization and disagreement on social media can exist between ideologically proximous users and agreement/disagreement patterns can be context-specific. In the same vein, Fletcher and Nielsen's six-country, multi-platform, comparative study demonstrates that online political audiences aren't necessarily more polarized than offline ones and, once again, that polarization is a contextual, rather than medium-specific phenomenon.[63] Finally, Beam and Kosicki derive from a US-based survey that social media users with high levels of partisanship don't display increased partisan news consumption patterns, substantially challenging "echo chamber" or "filter bubble" arguments, at least in the US context.[64]

For the short term, digital space is likely to remain an imperfect democracy, where the quality of representation and participation will be driven mostly by users' physical location. Users in authoritarian countries will continue to experience the web as a restricted and obsessively monitored domain, developing counter-measures such as IP masking and VPN services. They will be jailed for tweets or fined for using encrypted messaging services. They will use complex masking systems to mobilize against authoritarian governments and build elaborate layers of secret ties to privacy developers in the West. The fight for digital democracy in these countries will be more vital and survival-oriented for the future of digital technologies and will produce substantial lessons for the study of digital politics in the world beyond Western democracies. Users in liberal democracies, on the other hand, will experiment with more representative forms of political engagement, such as the Flux party in Australia, digital urban design in Canada, the g0v movement in

Taiwan, and the crowd-sourced constitution of Iceland.[65] These experiences will enrich the content of democracy as a whole and define the main course of progress between technology and society.

Two key challenges remain, however: first, that the resource-generating model of digital space benefits emotionally-charged content over verified information, creating the very environment in which trolls, bots, and fake news thrive. This relationship isn't automatic and context-specific, as explained earlier, yet is sufficiently problematic to disrupt and influence political processes during crises and emergencies. Second, political debate, as well as voter awareness, on algorithmic structures in charge of deepening and maintaining human-machine interactions is still elementary. Despite the emergence of a promising field that explores political and social implications of algorithm biases, that debate still has not attracted global mainstream political focus. Both issues can be resolved by realizing that ICTs are complex political and governance systems that generate significant public and policy attention to their political institutionalization, not always with accompanying regulation, along with measures to democratize user data and open up space for individual sovereignty in the digital world.[66] While certain trends in ICT research can yield potentially authoritarian and polarizing results, this relationship is not structural, but is more context-specific. This, in turn, calls for more case study research, as well as continued debate and restructuring of the relationships between attention as a resource, digital political engagement, and architectures of automation.⚜

H. Akin Unver is an assistant professor of International Relations at Kadir Has University and a dual fellow at the Center for Technology and Global Affairs, Oxford University, and the Alan Turing Institute, London. With a background in conflict studies, he focused on radicalization and mobilization through geospatial and geopolitical tools. With a specific interest in Turkey, Iran, Russia, and China, his research looks at the role of privacy-security debate in shaping these countries' Internet policies. Unver completed his PhD at the University of Essex, Department of Government, and was a Marcia Robins–Wilf Young scholar at the Washington Institute for Near East Policy and a dual postdoctoral researcher at the University of Michigan Center for European Studies and the Center for Middle East and North African Studies. Unver previously held the position of Ertegun Lecturer at Princeton University's Near Eastern Studies Department, teaching courses on history of the Middle East and conflict-terrorism sociology.

NOTES

1   Michael D. Conover, Jacob Ratkiewicz, Matthew R. Francisco, Bruno Gonçalves, Alessandro

Flammini, and Filippo Menczer, "Political Polarization on Twitter," *Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media* (Barcelona, Spain: Association for the Advancement of Artificial Intelligence, 2011); Shanto Iyengar and Kyu S. Hahn, "Red Media, Blue Media: Evidence of Ideological Selectivity in Media Use," *Journal of Communication* 59, no. 1 (2009), 19-39; Chris Atton, "Far-right media on the internet: culture, discourse and power," *New Media & Society* 8, no. 4 (2006), 573-587; Clay Shirky, "The Political Power of Social Media: Technology, the Public Sphere, and Political Change," *Foreign Affairs* (January 2011), 28-41; Hajo G. Boomgaarden and Rens Vliegenthart, "How news content influences anti-immigration attitudes: Germany, 1993–2005," *European Journal of Political Research* 48, no. 4 (2009), 516-542; Ted Brader, Nicholas A. Valentino, and Elizabeth Suhay, "What Triggers Public Opposition to Immigration? Anxiety, Group Cues, and Immigration Threat," *American Journal of Political Science* 52, no. 4 (2008), 959-978; Hunt Allcott and Matthew Gentzkow, "Social Media and Fake News in the 2016 Election" (Working Paper no. w23089, National Bureau of Economic Research, 2017); David Westerman, Patric R. Spence, and Brandon Van Der Heide, "Social Media as Information Source: Recency of Updates and Credibility of Information," *Journal of Computer Mediated Communication* 19, no. 2 (2014), 171-183.

2   Jürgen Pfeffer, Thomas Zorbach, and Kathleen M. Carley, "Understanding online firestorms: Negative word-of-mouth dynamics in social media networks," *Journal of Marketing Communications* 20, no. 1 (2014), 117-128; Yarimar Bonilla and Jonathan Rosa, "#Ferguson: Digital protest, hashtag ethnography, and the racial politics of social media in the United States," *American Ethnologist* 42, no. 1 (2015), 4-17.

3   Elanor Colleoni, Alessandro Rozza, and Adam Arvidsson, "Echo Chamber or Public Sphere? Predicting Political Orientation and Measuring Political Homophily in Twitter Using Big Data," *Journal of Communication* 64, no. 2 (2014): 317-332; Cristian Vaccari, "From echo chamber to persuasive device? Rethinking the role of the Internet in campaigns," *New Media & Society* 15, no. 1 (2013), 109-127.

4   Jacob Ratkiewicz, Michael D. Conover, Mark Meiss, Bruno Gonçalves, Alessandro Flammini, and Filippo Menczer, "Detecting and Tracking Political Abuse in Social Media," *Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media* (Barcelona, Spain: Association for the Advancement of Artificial Intelligence, 2011), 297-304; Yazan Boshmaf, Ildar Muslukhov, Konstantin Beznosov, and Matei Ripeanu, "The Socialbot Network: When Bots Socialize for Fame and Money," *Proceedings of the 27th Annual Computer Security Applications Conference* (Orlando, Florida, USA: May 2011).

5   Teresa Correa, Amber Willard Hinsley, and Homero Gil De Zuniga, "Who interacts on the Web? The intersection of users' personality and social media use," *Computers in Human Behavior* 26, no. 2 (2010), 247-253; W. Lance Bennett, "The Personalization of Politics: Political Identity, Social Media, and Changing Patterns of Participation," *ANNALS of the American Academy of Political and Social Science* 644, no. 1 (2012): 20-39; W. Lance Bennett and Alexandra Segerberg, "The Logic of Connective Action: Digital Media and the Personalization of Contentious Politics," *Information, Communication & Society* 15, no. 5 (2012), 739-768.

6   Sascha D. Meinrath, James W. Losey, and Victor W. Pickard, "Digital Feudalism: Enclosures and Erasures from Digital Rights Management to the Digital Divide," *CommLaw Conspectus* 19 (2010); Peter Drahos and John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (New York, NY: The New Press, 2002); Jürgen Habermas, *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* (Cambridge, MA: MIT Press, 1991).

7   Karl Marx and Friedrich Engels, *The German Ideology* (London: International Publishers, 1932 (1845)).

8   Susan Reynolds, *Fiefs and Vassals: The Medieval Evidence Reinterpreted* (Oxford: Oxford University Press, 1996); Rodney H. Hilton, "Peasant Society, Peasant Movements and Feudalism in Medieval Europe," *Rural Protest: Peasant Movements and Social Change*, ed. Henry A. Landsberger (London: Palgrave Macmillan, 1974), 67-94.

9   Linda Gottschalk-Stuckrath, "Medieval Monks and Their World: Ideas and Realities. Studies in Honor of Richard E. Sullivan," *Church History and Religious Culture* 87, no. 3 (2007), 375-376.

10   Carl Stephenson, *Mediaeval Feudalism* (Ithaca, New York: Cornell University Press, 1942).

11   Ole Wæver, *Securitization* (London: Routledge, 2011); Barry Buzan and Ole Waever, *Regions and Powers: The Structure of International Security* (Cambridge: Cambridge University Press, 2004).

12   Tiziana Terranova, "Free Labor: Producing Culture for the Digital Economy," *Social Text* 18, no. 2 (2000): 33-58; Christian Fuchs, "Dallas Smythe Reloaded: Critical Media and Communication Studies Today," *The Audience Commodity in a Digital Age: Revisiting a Critical Theory of Commercial Media*,

ed. Lee McGuigan and Vincent Manzerolle (New York, NY: Peter Lang Publishers, 2014), 267-389; Andreas Wittel, "Digital Marx: Toward a political economy of distributed media," TripleC 10, no. 2 (2012); Christian Fuchs, Digital Labour and Karl Marx (New York, NY: Routledge, 2014), 174-180; Nikolai Bezroukov, "Open source software development as a special type of academic research: Critique of vulgar Raymondism," *First Monday* 4, no. 10 (1999); Milton Mueller, "Info-communism? Ownership and freedom in the digital economy," *First Monday* 13, no. 4 (2008); Richard Barbrook, "Cyber-Communism: How the Americans are Superseding Capitalism in Cyberspace," *Science as Culture* 9, no. 1 (2000), 5-40; David Berry, *The Philosophy of Software: Code and Mediation in the Digital Age* (Berlin: Springer, 2016), 119-131.

13   Kevin Kelly, "The New Socialism: Global Collectivist Society is Coming Online," *Wired Magazine* 17, no. 6 (2009); Max Raskin and David Yermack, "Digital Currencies, Decentralized Ledgers, and the Future of Central Banking" (Working Paper No. w22238, National Bureau of Economic Research, 2016); Alberto Romele and Marta Severo, "The Economy of the Digital Gift: From Socialism to Sociality Online," *Theory, Culture & Society* 33, no. 5 (2016), 43-63; Todd Wolfson, *Digital Rebellion: The Birth of the Cyber Left* (Champaign, IL: University of Illinois Press, 2014), 134-141.

14   Herbert Kitschelt, "Formation of Party Cleavages in Post-Communist Democracies: Theoretical Propositions," *Party Politics* 1, no. 4 (1995), 447-472; Michael Woolcock, "Social capital and economic development: Toward a theoretical synthesis and policy framework," *Theory and Society* 27, no. 2 (1998), 151-208; Beverly Crawford and Arend Lijphart, "Explaining Political and Economic Change in Post-Communist Eastern Europe: Old Legacies, New Institutions, Hegemonic Norms, and International Pressures," *Comparative Political Studies* 28, no. 2 (1995), 171-199.

15   Vasilis Kostakis, "Peer governance and Wikipedia: Identifying and understanding the problems of Wikipedia's governance," *First Monday* 15, no. 3 (2010); Pippa Norris, *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide* (Cambridge: Cambridge University Press, 2001), 171-185.

16   Dallas W. Smythe, "Communications: Blindspot of Western Marxism," *Canadian Journal of Political and Social Theory* 1, no. 3 (1977), 1-27.

17   Hans Magnus Enzensberger, "Constituents of a Theory of the Media," *New Left Review* 64 (1970), 13.

18   Herbert A. Simon, "Rationality as process and as product of thought," *American Economic Review* (1978), 1-16.

19   Graham Murdock, "Citizens, consumers and public culture," *Media Cultures: Reappraising Transnational Media*, ed. Michael Skovmand and Kim Christian Schrøder (New York, NY: Routledge, 1992), 41.

20   Max Horkheimer, "The end of reason," *Zeitschrift für Sozialforschung* 9, no. 3 (1941), 366-388; Theodor W. Adorno, "Freudian theory and the pattern of fascist propaganda," *Psyche: Zeitschrift für Psychoanalyse und ihre Anwendungen* 24, no. 7 (1970), 486-509.

21   Herbert Marcuse, "Some social implications of modern technology," *Studies in Philosophy and Social Science* 9, no. 3 (1941), 414-439.

22   George Lukács, "Technology and social relations," *New Left Review* 39 (1966), 27.

23   Christian Fuchs, *Foundations of Critical Media and Information Studies* (London: Taylor & Francis, 2011).

24   Dal Yong Jin, "The Construction of Platform Imperialism in the Globalisation Era," *Marx in the age of digital capitalism*, ed. Christian Fuchs and Vincent Mosco (Leiden: Brill, 2015), 322-349.

25   Les Back, Michael Keith, and John Solomos, "Technology, Race and Neofascism in a Digital Age: The New Modalities of Racist Culture 1," Patterns of Prejudice 30, no. 2 (1996), 3-27; Matthew Hindman, *The Myth of Digital Democracy* (Princeton, NJ: Princeton University Press, 2008); Rebecca MacKinnon, "China's Networked Authoritarianism," *Journal of Democracy* 22, no. 2 (2011), 32-46; Shanthi Kalathil and Taylor C. Boas, *Open Networks, Closed Regimes: The Impact of the Internet on Authoritarian Rule* (Washington, DC: Carnegie Endowment, 2010); Daniel Calingaert, "Authoritarianism vs. the Internet," *Policy Review* 160 (2010); Philip N. Howard, *The Digital Origins of Dictatorship and Democracy: Information Technology and Political Islam* (Oxford: Oxford University Press, 2010).

26   Elizaveta Gaufman, "World War II 2.0: Digital Memory of Fascism in Russia in the Aftermath of Euromaidan in Ukraine," *Journal of Regional Security* 10, no. 1 (2015), 17-36; Eva Anduiza Perea, Michael James Jensen, and Laia Jorba, eds., *Digital Media and Political Engagement Worldwide: A Comparative Study* (Cambridge: Cambridge University Press, 2012).

[27] Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York, NY: Penguin Books 1977); Georges Canguilhem, *Machine and Organism* (New York, NY: Zone Books, 1992).

[28] Benito Mussolini Speech to Chamber of Deputies (9 December 1928), quoted in Fritz Morstein Marx, "Propaganda and Dictatorship," *Annals of the American Academy of Political and Social Science* 179 (1935), 211–218.

[29] Roger Griffin, *Modernism and Fascism: The Sense of a Beginning under Mussolini and Hitler* (Berlin: Springer, 2007); Jeffrey Herf, "Reactionary Modernism: Some Ideological Origins of the Primacy of Politics in the Third Reich," *Theory and Society* 10, no. 6 (1981), 805-832.

[30] Nicos Poulantzas, *Fascism and Dictatorship: The Third International and the problem of Fascism* (Brooklyn, NY: New Left Books, 1974).

[31] Umberto Eco, "Ur-Fascism," *New York Review of Books*, 22 June 1995.

[32] Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (New York, NY: Routledge, 2013).

[33] Alasdair MacIntyre, *After Virtue: A Study in Moral Theory* (Notre Dame, IN: University of Notre Dame Press, 1981); https://www.carnegiecouncil.org/publications/archive/morgenthau/268.

[34] Zeynep Tufekci, *Twitter and Tear Gas: The Power and Fragility of Networked Protest* (New Haven, CT: Yale University Press, 2017); Anita R. Gohdes, "Studying the Internet and Violent conflict," *Conflict Management and Peace Science* 35, no. 1 (2018), 89-106; Kevin A. Hill and John E. Hughes, *Cyberpolitics: Citizen Activism in the Age of the Internet* (Lanham, MD: Rowman & Littlefield Publishers, 1999).

[35] Philip N Howard, Sheetal D. Agarwal, and Muzammil M. Hussain, "When Do States Disconnect Their Digital Networks? Regime Responses to the Political Uses of Social Media," *Communication Review* 14, no. 3 (2011), 216-232; Bruce Etling, Robert Faris, and John Palfrey, "Political Change in the Digital Age: The Fragility and Promise of Online Organizing," *SAIS Review of International Affairs* 30, no. 2 (2010), 37-49; Nivien Saleh, "Egypt's Digital Activism and the Dictator's Dilemma: An evaluation," *Telecommunications Policy* 36, no. 6 (2012), 476-483; Charlie Edwards and Luke Gribbon, "Pathways to Violent Extremism in the Digital Era," *RUSI Journal* 158, no. 5 (2013), 40-47; Cristina Archetti, "Terrorism, Communication and New Media: Explaining Radicalization in the Digital Age," *Perspectives on Terrorism* 9, no. 1 (2015); Eric Schmidt and Jared Cohen, "The Digital Disruption-Connectivity and the Diffusion of Power," *Foreign Affairs* 89 (2010); Gabriella Coleman, "Hacker Politics and Publics," *Public Culture* 23, no. 3 (2011), 511-516.

[36] Arne Hintz and Ian Brown, "Enabling Digital Citizenship? The Reshaping of Surveillance Policy After Snowden," *International Journal of Communication* 11 (2017), 20; Gary King, Jennifer Pan, and Margaret E. Roberts. "How Censorship in China Allows Government Criticism but Silences Collective Expression," *American Political Science Review* 107, no. 2 (2013), 326-343; Jennifer Pan, "How Market Dynamics of Domestic and Foreign Social Media Firms Shape Strategies of Internet Censorship," *Problems of Post-Communism* 64, no. 3-4 (2017), 167-188; Espen Geelmuyden Rød and Nils B. Weidmann, "Empowering activists or autocrats? The Internet in authoritarian regimes," *Journal of Peace Research* 52, no. 3 (2015), 338-351; Sean Richey and Junyan Zhu, "Internet Access Does Not Improve Political Interest, Efficacy, and Knowledge for Late Adopters," *Political Communication* 32, no. 3 (2015), 396-413; Josephine B. Schmitt, Christina A. Debbelt, and Frank M. Schneider, "Too much information? Predictors of information overload in the context of online news exposure," *Information, Communication & Society* (April 2017), 1-17; Christian Grimme, Mike Preuss, Lena Adam, and Heike Trautmann, "Social Bots: Human-Like by Means of Human Control?" *Big Data* 5, no. 4 (2017), 279-293; Katina Michael, "Bots Trending Now: Disinformation and Calculated Manipulation of the Masses," *IEEE Technology and Society Magazine* 36, no. 2 (2017), 6-11; Yini Zhang, Chris Wells, Song Wang, and Karl Rohe, "Attention and amplification in the hybrid media system: The composition and activity of Donald Trump's Twitter following during the 2016 presidential election," *New Media & Society* 10 (2017); Eric Jardine, "Tor, what is it good for? Political repression and the use of online anonymity-granting technologies," *New Media & Society* (2016); Alice Hutchings and Thomas J. Holt, "The online stolen data market: disruption and intervention approaches," *Global Crime* 18, no. 1 (2017), 11-30; Nathalie Maréchal, "Networked Authoritarianism and the Geopolitics of Information: Understanding Russian Internet Policy," *Media and Communication* 5, no. 1 (2017); Jason Gainous, Kevin M. Wagner, and Charles E. Ziegler, "Digital media and political opposition in authoritarian systems: Russia's 2011 and 2016 Duma elections," *Democratization* (2017), 1-18.

[37] David Lyon, "Surveillance, Snowden, and Big Data: Capacities, Consequences, Critique," *Big Data & Society* 1, no. 2 (2014); Christopher G. Reddick, Akemi Takeoka Chatfield, and Patricia A. Jaramillo, "Public opinion on National Security Agency surveillance programs: A multi-method approach," *Government Information Quarterly* 32, no. 2 (2015), 129-141.

[38]   Emiliano Treré, "The Dark Side of Digital Politics: Understanding the Algorithmic Manufacturing of Consent and the Hindering of Online Dissidence," Institute of Development Studies Bulletin 47, no. 1 (2016); Emiliano Treré and Veronica Barassi, "Net-authoritarianism? How web ideologies reinforce political hierarchies in the Italian 5 Star Movement," *Journal of Italian Cinema & Media Studies* 3, no. 3 (2015), 287-304; Rebecca MacKinnon, "China's networked authoritarianism"; Katy E. Pearce and Sarah Kendzior, "Networked Authoritarianism and Social Media in Azerbaijan," *Journal of Communication* 62, no. 2 (2012), 283-298; Luca Anceschi, "The persistence of media control under consolidated authoritarianism: containing Kazakhstan's digital media," *Demokratizatsiya* 23, no. 3 (2015), 277-295; Muzammil M. Hussain and Philip N. Howard, "What Best Explains Successful Protest Cascades? ICTs and the Fuzzy Causes of the Arab Spring," *International Studies Review* 15, no. 1 (2013), 48-66.

[39]   Greg Allen and Taniel Chan, "Artificial Intelligence and National Security" (Belfer Center Paper, Belfer Center for Science and International Affairs Harvard Kennedy School, Harvard University, 2017); Nick Bostrom and Eliezer Yudkowsky, "The ethics of artificial intelligence," *Cambridge Handbook of Artificial Intelligence*, ed. Keith Frankish and William M. Ramsey (Cambridge: Cambridge University Press, 2014), 316-334.

[40]   Brent Mittelstadt, Daniel, Patrick Allo, Mariarosaria Taddeo, Sandra Wachter, and Luciano Floridi, "The ethics of algorithms: Mapping the debate," *Big Data & Society* 3, no. 2 (2016); Luciano Floridi, *The Philosophy of Information* (Oxford: Oxford University Press, 2011).

[41]   Zeynep Tufekci, "Engineering the public: Big data, surveillance and computational politics," *First Monday* 19, no. 7 (2014); Rebecca MacKinnon, "China's Networked Authoritarianism"; Daniel Calingaert, "Authoritarianism vs. the Internet," *Policy Review* 160 (2010); Jack Copeland, *Artificial Intelligence: A Philosophical Introduction* (Hoboken, NJ: John Wiley & Sons, 2015).

[42]   Xiaolin Wu and Xi Zhang, "Automated Inference on Criminality using Face Images," *arXiv* (2016), https://arxiv.org/abs/1611.04135.

[43]   "Facebook and Google Helped Anti-Refugee Campaign in Swing States," *Bloomberg*, 18 October 2017, https://www.bloomberg.com/news/articles/2017-10-18/facebook-and-google-helped-anti-refugee-campaign-in-swing-states.

[44]   Sandra Wachter, Brent Mittelstadt, and Chris Russell, "Counterfactual Explanations Without Opening the Black Box: Automated Decisions and the GDPR," *Harvard Journal of Law & Technology* (forthcoming, available at https://ssrn.com/abstract=3063289). For a recent exposition of this argument, see Zeynep Tufekci, "We're building a dystopia just to make people click on ads," TED Talks, September 2017; https://www.ted.com/talks/zeynep_tufekci_we_re_building_a_dystopia_just_to_make_people_click_on_ads.

[45]   Subhankar Bhattacharya, Edward Scott, and Magan Arthur, "The phoenix rises from the ashes: Advertising and content monetization in a digital world," *Journal of Digital Asset Management* 2, no. 6 (2006), 269-278; Jose Tomas Gomez-Arias and Larisa Genin, "Beyond Monetization: Creating Value through Online Social Networks," *International Journal of Electronic Business Management* 7, no. 2 (2009), 79-85.

[46]   Andrew Chadwick, "Digital Network Repertoires and Organizational Hybridity," *Political Communication* 24, no. 3 (2007), 283-301.

[47]   Markus Prior, "Media and Political Polarization," *Annual Review of Political Science* 16 (2013), 101-127; Bruce Bimber, "Digital Media in the Obama Campaigns of 2008 and 2012: Adaptation to the Personalized Political Communication Environment," *Journal of Information Technology & Politics* 11, no. 2 (2014), 130-150; W. Lance Bennett and Shanto Iyengar, "A New Era of Minimal Effects? The Changing Foundations of Political Communication," *Journal of Communication* 58, no. 4 (2008), 707-731.

[48]   Samuel C. Woolley, "Automating power: Social bot interference in global politics," *First Monday* 21, no. 4 (2016); Samuel C. Woolley and Philip N. Howard, "Political Communication, Computational Propaganda, and Autonomous Agents—Introduction," *International Journal of Communication* 10 (2016).

[49]   Astrid Mager, "Algorithmic ideology: How capitalist society shapes search engines," *Information, Communication & Society* 15, no. 5 (2012), 769-787.

[50]   Howard Rheingold, *The Virtual Community: Homesteading on the Electronic Frontier* (Cambridge, MA: MIT press, 2000).

[51]   Manuel Castells, *The Rise of the Network Society: The Information Age: Economy, Society, and Culture* (Hoboken, NJ: John Wiley & Sons, 2011).

52   Manuel Castells, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (Oxford: Oxford University Press, 2001).

53   Craig Calhoun, "Community Without Propinquity Revisited: Communications Technology and the Transformation of the Urban Public Sphere," *Sociological Inquiry* 68, no. 3 (1998), 373-397.

54   Shelley Boulianne, "Does Internet use affect engagement? A meta-analysis of research," *Political Communication* 26, no. 2 (2009), 193-211; Michael Xenos and Patricia Moy, "Direct and Differential Effects of the Internet on Political and Civic Engagement," *Journal of Communication* 57, no. 4 (2007), 704-718; Caroline J. Tolbert and Ramona S. McNeal, "Unraveling the Effects of the Internet on Political Participation?" *Political Research Quarterly* 56, no. 2 (2003), 175-185; Kate Kenski and Natalie Jomini Stroud, "Connections Between Internet Use and Political Efficacy, Knowledge, and Participation," *Journal Broadcasting & Electronic Media* 50, no. 2 (2006), 173-192.

55   Eva Anduiza Perea, Michael James Jensen, and Laia Jorba, eds., *Digital Media and Political Engagement Worldwide: A Comparative Study*; Jennifer Oser, Marc Hooghe, and Sofie Marien, "Is Online Participation Distinct from Offline Participation? A Latent Class Analysis of Participation Types and Their Stratification," *Political Research Quarterly* 66, no. 1 (2013), 91-101.

56   Pippa Norris, *Democratic Phoenix: Reinventing Political Activism* (Cambridge: Cambridge University Press, 2002); Ronald Inglehart and Pippa Norris, "Trump, Brexit, and the Rise of Populism: Economic Have-Nots and Cultural Backlash" (Harvard Kennedy School Working Paper No. RWP16-026, Harvard University, Boston, MA: 2017) (available at SSRN: https://ssrn.com/abstract=2818659).

57   Michael Xenos, Ariadne Vromen, and Brian D. Loader, "The great equalizer? Patterns of social media use and youth political engagement in three advanced democracies," *Information, Communication & Society* 17, no. 2 (2014), 151-167.

58   Rachel K. Gibson, "Party change, social media and the rise of 'citizen-initiated' campaigning," *Party Politics* 21, no. 2 (2015), 183-197.

59   Homero Gil de Zúñiga, Logan Molyneux, and Pei Zheng, "Social Media, Political Expression, and Political Participation: Panel Analysis of Lagged and Concurrent Relationships," *Journal of Communication* 64, no. 4 (2014), 612-634; Leticia Bode, Emily K. Vraga, Porismita Borah, and Dhavan V. Shah, "A New Space for Political Behavior: Political Social Networking and Its Democratic Consequences," *Journal of Computer Mediated Communication* 19, no. 3 (2014), 414-429; Nakwon Jung, Yonghwan Kim, and Homero Gil de Zúniga, "The Mediating Role of Knowledge and Efficacy in the Effects of Communication on Political Participation," *Mass Communication and Society* 14, no. 4 (2011), 407-430.

60   Scott A. Hale, Helen Margetts, and Taha Yasseri, "Petition growth and success rates on the UK No. 10 Downing Street website," *Proceedings of the 5th Annual Association for Computing Machinery Web Science Conference* (Paris, France: May 2013); R. Michael Alvarez, Thad E. Hall, and Alexander H. Trechsel, "Internet Voting in Comparative Perspective: the Case of Estonia," *PS: Political Science & Politics* 42, no. 3 (2009), 497-505; Finnish Open Ministry, openministry.info; Francis Augusto Medeiros and Lee A. Bygrave, "Brazil's Marco Civil da Internet: Does it live up to the hype?" *Computer Law & Security Review* 31, no. 1 (2015), 120-130.

61   Sarah Perez, "Facebook officially launches 'Town Hall' for contacting government reps, adds local election reminders," *TechCrunch*, 27 March 2017, https://techcrunch.com/2017/03/27/facebook-officially-launches-town-hall-for-contacting-government-reps-adds-local-election-reminders/.

62   Cristian Vaccari, Augusto Valeriani, Pablo Barberá, John T. Jost, Jonathan Nagler, and Joshua A. Tucker, "Of Echo Chambers and Contrarian Clubs: Exposure to Political Disagreement among German and Italian Users of Twitter," *Social Media and Society* 2, no. 3 (2016).

63   Richard Fletcher and Rasmus Kleis Nielsen, "Are News Audiences Increasingly Fragmented? A Cross-National Comparative Analysis of Cross-Platform News Audience Fragmentation and Duplication," *Journal of Communication* 67, no. 4 (2017), 476-498.

64   Michael A. Beam and Gerald M. Kosicki, "Personalized News Portals: Filtering Systems and Increased News Exposure," *Journalism & Mass Communication Quarterly* 91, no. 1 (2014), 59-77.

65   Flux Party, voteflux.org/; Orly Linovski and Anastasia Loukaitou-Sideris, "Evolution of Urban Design Plans in the United States and Canada: What Do the Plans Tell Us about Urban Design Practice?" *Journal of Planning Education and Research* 33, no. 1 (2013), 66-82; Noe Jacomet, "How the g0v movement is forking the Taiwanese government," *Medium*, 13 April 2017, https://medium.com/open-source-politics/how-the-g0v-movement-is-forking-the-taiwanese-government-74b7cce0e92b; Haroon Siddique, "Mob rule: Iceland crowdsources its next constitution," *The Guardian*, 9 June 2011, https://

www.theguardian.com/world/2011/jun/09/iceland-crowdsourcing-constitution-facebook.

66   Helen Margetts, "The Internet and Democracy," *Oxford Handbook of Internet Studies*, ed. William H. Dutton (Oxford, Oxford University Press, 2013); Andrew Chadwick, *The Hybrid Media System: Politics and Power* (Oxford: Oxford University Press, 2017).