

# Social Media, Political Science, and Democracy

**Kevin Munger**, Pennsylvania State University

*Frenemies: How Social Media Polarizes America.* By Jaime Settle. Cambridge: Cambridge University Press, 2018.

*The Internet Trap: How the Digital Economy Builds Monopolies and Undermines Democracy.* By Matthew Hindman. Princeton, NJ: Princeton University Press, 2018.

*Antisocial Media: How Facebook Disconnects Us and Undermines Democracy.* By Siva Vaidhyanathan. Oxford: Oxford University Press, 2018.

Many years pass between the germ of an idea and its manifestation as a physical book on your desk. But social media (and its role in democratic politics) changes very quickly. Even more than in other areas, then, the challenge is to write something that is both novel and durable, a text with up-to-date facts to support an argument that will in turn help motivate future research. Several such works were published in 2018, each of which tackles this challenge from a different angle.

Taken together, these books paint a pessimistic picture of the impact social media has had (and likely will have in the near future) on democratic politics.<sup>1</sup> Two of the subtitles end with “and undermines democracy”; the other ends with “polarizes America.” While this picture is the broad focus of this essay, I want to foreground the methodological and epistemological issues raised by the increasing centrality of this rapidly changing subject to both the practice and study of politics.

The major contribution of Jaime Settle’s book is a new theoretical framework for analyzing the psychological effects of social media: the expression, news, and discussion (END) framework. This framework takes seriously why people log onto Facebook and how they actually spend their time while

on the platform. This is social media, so our understanding needs to be premised on the fact that “people use the site to stay connected to and learn about other people” (14–15). Further, the overwhelming majority of time spent on the platform is consumed by an activity for which there is no obvious analog analogue: scrolling the news feed.

Any model of the impact of social media on, say, polarization must begin with these two facts. “To date,” however, “political scientists have tested hypotheses about the antecedents and consequences of political engagement on social media within the framework used to study traditional political behaviors. . . . Researchers have assessed exposure to political information primarily from a news-seeking and agenda-setting framework, applying the theories of selective exposure to study which information on social media users are most likely to click and the consequences of doing so on learning and issue salience.” Settle then claims that “this accumulated knowledge is useful” (14), which is true, but it is not *that* useful. The currently dominant theories in political communication Settle mentions were all conceptualized to explain the political behaviors relevant to an earlier cultural-technological context. Students learn these theories, and submissions to academic journals are expected to either challenge or refine them.

The rapid march of communication technology neither refutes nor supports these theories; it renders them irrelevant. Most political science exists in the middle layer of theory. Psychology and philosophy ask questions about human nature, but we study human behavior. All of our research questions involve holding an overwhelming amount of a given context fixed, although the true scope of this assumption is rarely made explicit. This has not yet been a major problem, but the increased pace of technological change has intersected with the academic career cycle.

It seems natural for reality to render theories irrelevant when their creators have retired. But it is extremely difficult

Kevin Munger (kevinmunger@gmail.com) is an assistant professor of political science and social data analytics, Pennsylvania State University.

1. Two and a half of these books focus squarely on Facebook, which is today by far the largest and most important social media platform outside of China.

for eminent professors to abandon theories they have spent their career advancing. And it is downright impossible to do so unless there exists a coherent, empirically justified, and useful theory to supplant it.

Settle has provided us with just such a theory; the END framework should prove extremely productive for scholars developing empirical tests of the impact of social media. But a novel theoretical framework like this requires a book-length treatment. The timeline of graduate education makes this impossible—today’s empiricist must learn stats, coding, subject matter, and research design and produce peer-reviewed journal articles to have a chance at a tenure-track job. By the time people reach the level of a tenured professor, they thus tend to be invested in an extant theoretical framework, with fewer incentives for novel theorization.

Further, the increasing specificity of communication technology makes any four-year book project into something of a crapshoot. In 2014, when Settle reports beginning work on *Frenemies*, the future of Facebook was uncertain. Today, the political importance of Facebook cannot be denied, but it was at that point entirely possible that some rival, scandal, or regulation might have limited its growth and impact.

Today, though, Facebook is sufficiently entrenched that it will not be going away without some significant upheaval. *The Internet Trap* makes this point overwhelmingly clear, through a comprehensive analysis of the infrastructure (and structure) of the internet. Google and Facebook (and, increasingly, Amazon) now own appreciable fractions of the servers and cables that comprise the internet—“peer-to-peer” internet is a myth. Further, Matthew Hindman argues, centralizing forces dominate decentralizing forces on the internet, primarily in the form of increasing returns to scale on many dimensions.

The argument and supporting facts in *The Internet Trap* are almost orthogonal to ongoing discussions in political science—and all the more useful, as a result. Hindman demonstrates that many of the premises we take for granted are in fact false (going so far as to say that “[the internet] has broken our cognitive models” [83]), particularly related to the structure of the market for online news. Trump-appointed Federal Communications Commission chair Ajit Pai claimed that the state of competition in the online news space is healthy thanks to “countless local news sites”; Hindman confidently asserts that this is false “because we counted them” (131).

Models of the effects of social media or the internet that are based on false premises are unlikely to be true or useful; Hindman has convincingly demonstrated the demise of the horizontal internet that still dominates our imaginations. But his data are already dated, less than a year after publication. Pai’s comments are from 2017, but Hindman’s data (fur-

nished by the US government and thus not easily extended to the future) are from 2010.

Figure 1, presenting employment data from the Bureau of Labor Statistics, suggests that this is a problem. Consider the situation in 2003 (seven years before Hindman’s data): the number of internet publishing firms is small and declining. Between 2003 and 2010, this trend reversed, and the number of firms doubled. Between 2010 and 2017, the number of firms doubled again, while the number of firms in analogous industries declined or held constant. The age of the media data is a limitation of Hindman’s book but not a criticism of the method; rather, more effort needs to be devoted to descriptive work ensuring that our intuitions about how the internet works keep pace with the changing facts on the web.

*Antisocial Media* is by far the broadest of the three books reviewed here and the most polemical. Siva Vaidhyanathan traces disparate threads in the history of Facebook, making the case that hubris and evangelical fervor prompted Facebook to expand globally and into many aspects of our lives and that the platform cannot be usefully reformed, that its negative consequences are essential. The argument proceeds in a media studies paradigm, and there is no novel empirical research. This critical perspective allows Vaidhyanathan to cover a variety of topics and includes discussions of very recent developments. However, this freshness in some places comes at the expense of rigor.

The most pressing example is the discussion of the “filter bubble”/“echo chamber” hypothesis. Vaidhyanathan spends several pages on the topic, so we get the impression that this

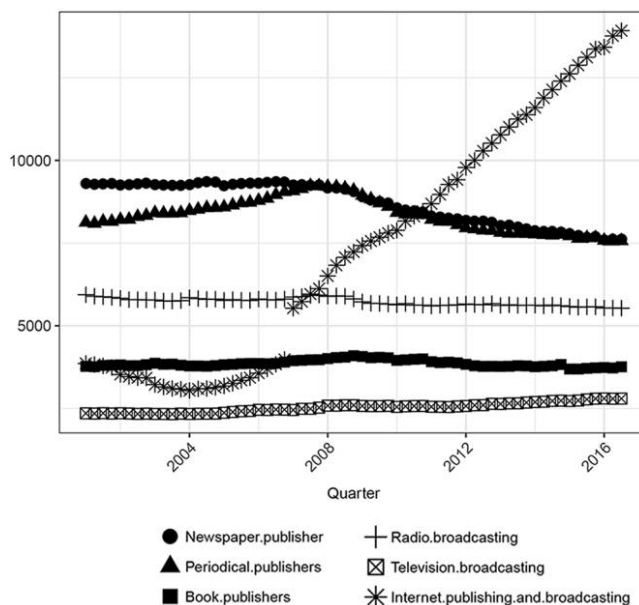


Figure 1. Internet publishing firms soar. (Data source: US Bureau of Labor Statistics, <https://www.bls.gov/opub/ted/2017/newspaper-publishers-lose-over-half-their-employment-from-january-2001-to-september-2016.htm>.)

is real and important. The only empirical paper cited is Bakshy, Messing, and Adamic (2015), and the upshot of the discussion is that, because the authors were employees at Facebook, their conclusion (that algorithmically produced “filter bubbles” are less influential than consumer choice in structuring media diets) is suspect.

Vaidhyanathan’s conclusion is that although “the power of filter bubbles remains unmeasured and perhaps unmeasurable . . . it’s reasonable to believe that our vision is narrower than it might otherwise be if we were not engaging with Facebook so often and about such important matters. . . . The arguments about whether the filter bubble exists . . . too often get bogged down in a false dichotomy” (90–91). Reading these two pages, I feel like I knew less than I did before. I disagree strongly with the final sentence. In fact, our explicit goal as social scientists is to specify and test precise hypotheses (e.g., an “online echo chamber” exists if people get a higher proportion of their news from co-attitudinal sources than they would have under different information technology regimes), which we have been doing, on this precise question, for nearly a decade.

Guess et al. (2018) summarize the literature and find that “the data frequently contradict or at least complicate the ‘echo chambers’ narrative, which has ironically been amplified and distorted in a kind of echo chamber effect.” I would take this a step further: the reason that so much effort has been expended in investigating this theory is that academics and journalists find it plausible because we ourselves are precisely the type of news consumers who are most likely to self-segregate into like-minded groups. I argue that this focus distracted us from pathologies of social media news consumption that are unlikely to affect us but which can affect people dissimilar from us, like misinformation.

It is frustrating to see one of the best researched and most agreed-on topics in the field of social media and politics summarized as “we can’t know, but Facebook sure wants us to think this isn’t a problem.” Given the scope of Vaidhyanathan’s project, deep knowledge of every empirical claim is impossible, and in this case I believe he is mistaken.

*Frenemies*, *The Internet Trap* and *Antisocial Media* employ profoundly different methodologies, each aiming to deal with the issue of studying a rapidly changing subject. Each approach has strengths and weaknesses, and I believe that future research should learn from them and employ research designs that are of high “temporal validity” (Munger 2018). That said, what do they tell us about social media and democracy today?

## SOCIAL MEDIA AND DEMOCRACY

Hindman’s book is the lowest level—in the computer science sense, the closest to the hardware—so it provides the framework necessary for understanding higher-level dynamics. Bor-

rowing from economics and the natural sciences and holding human preferences fixed (at one point even using Paul Krugman’s famous New Trade Theory to model the economic geography of cyberspace), he aims to establish empirical regularities that reflect the “nature of the internet.” Taking these as given allows him to develop the “evolutionary model of digital audiences,” which can best be summarized in a cheeky restatement of Einstein’s possibly apocryphal claim: “compounded audience is the most powerful force on the internet” (133).

The central argument is that the physical structure of the internet makes it far more similar to traditional industries than we tend to realize. Hindman offers a laudable self-criticism when he cites previous work in which he claimed that the internet lowers the cost of distribution—something *The Internet Trap* establishes not to be true. Viral link sharing and cheap web hosting disguise both the immense technical infrastructure required to power the modern internet and the market power wielded by a few tech giants.

Digital distribution is never free; small outlets cannot build an audience except by using the software and hardware provided by those giants. Google and Facebook have invested tens of billions of dollars in server farms, fiber optic cable, proprietary technology, and top-quality talent. These advantages have allowed them to divide up the market for online advertising, becoming a virtual duopoly with unprecedented power over the media. This did not happen overnight but is the result of small advantages that caused the growth in their user base to compound over time. Supply-side returns to scale are central to understanding the internet, a fact Hindman illustrates with something unexpectedly fundamental to the online web: fast load times.

Google has always been obsessed with speed. They found that tiny delays caused people to lose interest and switch to other sites and have thus put a premium on speed. According to Hindman, their decision to develop the Chrome web browser—now the most popular in the world—was motivated by their desire to speed up their search results.

Load times are just one of a host of supply-side economies of scale. Large data centers are more efficiently cooled than small ones; Google and Facebook run their own cables directly to Comcast, making them better at streaming video; and Google has developed proprietary computer chips that are optimized for deep learning.

Initial investments in hardware also allowed these firms to kick-start growth into new areas. Everyone uses Gmail these days, but why did we all switch to it? The Google brand name carried some weight, but it is important to remember that Google also offered 250 times as much storage as other free e-mail providers.

Hardware advantages that create increased audience growth compound with other ways to improve the user experience. The simplest is site-specific skill acquisition: people learn how to use a given site and are unlikely to pay the costs of learning a new site unless given a serious reason to do so. More users means higher ranking in search engines, increasing growth; a sizable user base also increases credibility. This is further compounded by familiar network effects—social networks are more useful to a given user, the more users they have.

Intriguingly, Hindman also demonstrates the intersection between quality and data science. The top sites all use recommendation systems to present users with content that they are likely to engage with. Data scientists (like back-end engineers who reduce load times) are thus essential to the modern web, to the extent that Hindman advises news sites to accept that “technical staffers are just as much a distribution cost as printing presses” (155). One observation (taken from the influential Netflix Prize competition) is that the best recommendation system outputs a diverse range of choices—understanding how algorithms actually function makes the hard “filter bubble” theory implausible on its face. The other lesson of the Netflix Prize is that, at most margins, more data improves performance more than brilliant new algorithms. Small sites do not have enough data to learn from A/B tests; economic power increases statistical power, which increases economic power—a positive feedback loop that structures the online world.

Hindman concludes with practical advice for media organizations struggling to survive in a world with less advertising money. The fundamental issue is an inversion in the per person advertising rate; throughout the twentieth century, the geographic targeting implicit in local media allowed those outlets to charge more per person for advertisements. The sophisticated targeting enabled by Facebook and Google allows them to charge more and provide a better product for advertisers.

The advertising duopoly empowered by large-scale data collection is also of concern to Vaidhyanathan. A major difference in Hindman’s and Vaidhyanathan’s approaches, though, is reflected in their respective attitudes toward technological determinism. Vaidhyanathan is staunchly opposed, preferring to emphasize the role of ideology—“big data” and behavioral tracking existed before digital technology (in East Germany), so the current context does not need to entail those things. Hindman is not a determinist, but his analysis does take as given the currently existing ideology of liberal democratic capitalism.

If Facebook were to disappear tomorrow, would it be replaced by a broadly similar firm? Vaidhyanathan’s analysis implies that it would not, while Hindman’s implies that it would.

The two agree, however, that the state of online privacy is bad for democracy and that government regulation is necessary.

Hindman thinks that the market cannot produce better privacy norms; firms that unilaterally decide not to track their users are committing “slow-motion suicide.” Vaidhyanathan sees a more deliberate strategy: “Facebook’s playbook has seemed to be to slowly and steadily acclimate users to a system of surveillance and distribution that if introduced all at once might seem appalling” (73). This may be true, but the evidence for broad-based privacy concerns among users is thin, and a more plausible explanation is that it takes Facebook time to create new products, including improved tracking techniques.

Vaidhyanathan’s better argument is the user-level analogue to Hindman’s firm-level critique: Facebook has been good for us individually but bad for us collectively. These are classic market failures that can be solved by government regulation. The problem, though, is that Facebook use encourages individualism and diminishes our ability to collectively deliberate and solve problems.

Targeted ads create separate worlds; mass media advertising aims to create public knowledge (if Coke buys a Super Bowl ad, everyone knows that everyone knows that Coke is good enough to afford a Super Bowl ad), while targeted ads merely try to match consumers and goods. Facebook use is largely antideliberative, and Facebook itself is harmful to the institutions (the media, experts, real-world community organizations) that promote deliberation.

But Facebook is as much a product of these trends as a cause. Vaidhyanathan begins the history with the rise of the public choice school of thought, which he summarizes with James Buchanan’s famous idea of “politics without romance.” Taken to heart by the pro-market reformers of the 1980s, the government was no longer seen as a vehicle to solve problems. Instead, individual consumer choices and corporate social responsibility were supposed to lead to better outcomes. Facebook took advantage of this atmosphere to insinuate itself into our political and economic lives, at no point alienating a sufficient coalition to prompt widespread outrage.<sup>2</sup>

This fracturing of discourse applies to political advertising during campaigns as well. The ability of campaigns to target specific people with the arguments that appeal most to them—and even to potentially promise conflicting things to different

2. Vaidhyanathan paints in broad strokes, but this is generally plausible. Certain claims in the story, however, are not supported by citation and do not seem plausible. Public choice theory is asserted to have been unbelievably influential: “market failure arguments grew rare. . . . While market failure became a historical footnote, public failure . . . thrived” (121–22). Since 1980, Google Scholar reports 115,000 hits for “market failure” and 5,480 for “public failure.”



groups—is an old worry but a serious one. Politicians providing a laundry list of policies to specific constituencies is generally considered to be unhealthy and clientelistic; politicians selling a unified vision of public life that helps everyone is healthy democracy.

Facebook has also fractured the media's ability to create universal narratives; this process clearly began with the advent of cable news but has significantly expanded online. A weakened media cannot serve as a credible counterweight to demagoguery, an even greater threat when media and other nongovernmental social institutions are weak to begin with.

Vaidhyanathan compellingly describes Facebook's "Free Basics" campaign to spread "internet lite" (access to Facebook and a handful of reference materials) connectivity to hundreds of millions of previously unconnected rural Indians. That plan was rejected by the Indian government as anti-competitive (and viewed by some Indians as neocolonialist), a striking example of the role that regulation can play in tech-savvy states.

That savviness extended to the use of Facebook by Indian Prime Minister Narendra Modi to rally support for his Hindu nationalist platform. Facebook is very effective at transmitting these identity-based appeals but may also encourage violence toward minority groups. Even more dramatic is the Facebook savvy of Filipino President Rodrigo Duterte, who has parlayed his personal charisma (and outrageousness) into a sufficient Facebook following so that he banned the media from attending his speeches, preferring to stream them directly on Facebook.

Documenting all of the ways that Facebook has been used, however, does not imply that Facebook per se is a necessary condition. Discussions around the spread of low-quality news, for example, often appeal to Facebook's recommendation algorithm that prioritizes "engagement." If Facebook were to change its algorithm, we would expect to see less of this extreme content.

But WhatsApp—the encrypted chat platform owned by Facebook—is not governed by any algorithm, yet fake/sensational news abounds. The adoption of camera phones, each distinct social media platform, and smartphones has happened (and is still happening) simultaneously, making an understanding of the causal role of each almost impossible to know. Vaidhyanathan undertakes a comprehensive analysis of the way that Facebook functions in the world, but his method cannot speak to a crucial counterfactual question: What would we expect to be different if Facebook never existed?

True counterfactual knowledge is obviously impossible, but a specific, falsifiable theory is the next best thing. Settle provides just such a theory in her END framework. The model is specifically designed to analyze the effects of Facebook use;

unlike in the other two books, Settle's unit of analysis is the individual Facebook user.

The logic that produces the END framework begins by directly theorizing the motivations and experiences of Facebook users. Users post on Facebook with the aim of signaling their allegiances and getting positive feedback; they scroll the news feed to understand the social relationships between people, tastes, and ideas. Neither of these activities has a common offline analogue, so we do not have good intuitions about how to think about them. But their interaction produces a feedback loop that governs this near-ubiquitous mode of political communication.

The process of constantly broadcasting one's activities and views helps develop a network of associations. If some of these views are political (most likely to be the case among those already more politically extreme), activities and habits become associated with a given ideological leaning: "the volume of information that is politically informative is much larger than the volume of information that is explicitly political" (15). But that information is not uniformly legible. Reading these connections takes practice, and people practice whenever they scroll the news feed: "increased use of FB increases confidence in the ability to make social inferences" (72).

There are a host of specific predictions and empirical tests in *Frenemies*, but this core insight is the foundation of the END framework. Using END, Settle is able to make specific, theoretically motivated predictions about the political implications of social media platforms with different combinations of "affordances" (the technical or material features that determine how users are able to use them). Table 9.1 presents a matrix of these predictions, an exemplary use of theoretical reasoning to extrapolate knowledge from a given context (Facebook as it is today) to relevant alternative contexts (say, Facebook without link sharing).

This behavioral approach cannot enable more than a partial equilibrium understanding of the effects of social media use, however; the general effects of a given change in the affordances of the dominant platform are unknowable but precisely what we most want to know. What, then, do these three books imply should be done?

## IMPROVING SOCIAL MEDIA TO RESCUE AND EMPOWER DEMOCRACY

There is a consensus that something should be done. Hindman and Vaidhyanathan agree that strategic competition between tech firms calls out for collective problem solving and, particularly, for some form of government regulation. A prominent point of agreement is the need for a return to a policy of "net neutrality," in which internet service providers must provide equal access (and speed) to all content.

Competition prevents meaningful self-regulation, but the only real competition now possible is between a handful of tech firms. The compounded advantage of investments in hardware, software, data, and expertise has enabled Facebook, Google, Microsoft, Apple, and Amazon to develop insurmountable advantages in the marketplace. The only global competition comes from Chinese corporations like Tencent that have been insulated by the Great Firewall.

Hindman and Vaidhyanathan also agree on the need to break up these tech giants. Facebook's ownership of WhatsApp, for example, gives them the ability to scare off startups that might compete in the messaging space: the parent company can pour essentially unlimited resources into bankrupting or simply buying any upstarts. Even when the giants go head to head, the one with an entrenched position wins. Microsoft spent over a decade and lost (per Hindman) \$12.4 billion dollars to "establish Bing as a credible [search] competitor. It is cheaper and easier to build a manned space program than it is to build a modern search engine" (174).

The companies' infrastructural investments, however, imply that splitting up their products will not be enough. These companies own the hardware of the internet. Google and Facebook own the wires, Amazon owns the servers, and Microsoft and Apple own the devices.

Hindman draws a useful comparison to the Microsoft antitrust lawsuits of the 1990s. Microsoft's use of monopoly power to disrupt the open internet was then still legible to regulators. It was possible to translate the hardware and browser monopoly into the industrial idiom in which antitrust lawsuits are written. Facebook and Google's data repositories, however, are of (literally) incalculable value. The 2013 Federal Trade Commission investigation of Google resulted in a credulous citation of Google's position that "competition is only a click away" and no penalties.

The recommendations from Settle's microfoundational approach are concomitantly smaller scale, but they are both counterintuitive and more easily implemented. The most concrete would be for Facebook to change the way that quantification operates. The constant quantified evaluation of all of the opinions shared on Facebook promotes extremism.

Settle's other solutions are social; we need to develop healthier norms of behavior. Affordances are important, but they are not the whole story. Social pressure to use only high-quality news sources and measured argumentation would improve outcomes independent of regulation. However, the process by which norm enforcement works online is still being understood. My research on the subject suggests that group identity and social status (provided by those ever-visible quantitative rankings) significantly moderate the effectiveness of norm enforcement (Munger 2017a, 2017b). Another beneficial norm, surprisingly, would be for a broader population of users to explicitly discuss politics. Extreme voices are dramatically over-represented among the opinions shared (and especially viewed) on Facebook.

## REFERENCES

- Bakshy, Eytan, Solomon Messing, and Lada A. Adamic. 2015. "Exposure to Ideologically Diverse News and Opinion on Facebook." *Science* 348 (6239): 1130–32.
- Guess, Andrew, Benjamin Lyons, Brendan Nyhan, and Jason Reifler. 2018. "Avoiding the Echo Chamber about Echo Chambers: Why Selective Exposure to Like-Minded Political News Is Less Prevalent than You Think." Knight Foundation, Miami, FL.
- Munger, Kevin. 2017a. "Don't @ Me: Experimentally Reducing Partisan Incivility on Twitter." Unpublished manuscript.
- Munger, Kevin. 2017b. "Tweetment Effects on the Tweeted: Experimentally Reducing Racist Harassment." *Political Behavior* 39 (3): 629–49.
- Munger, Kevin. 2018. "Temporal Validity in Online Social Science." Unpublished manuscript.