IN FOCUS: Media Studies and the Internet at Fifty

Media Studies and the Internet

by DEREK KOMPARE, editor

I n November 1969, an SDS Sigma 7 computer at the University of California, Los Angeles, and an SDS 940 computer at Stanford were connected via telephone for the first permanent host-to-host connection of ARPANET, the US Department of Defense's project to build a dispersed computer network.[1] This initial connection would grow over the coming years to form the physical and logistical infrastructure of what eventually became known as the internet, encompassing technologies and technological discourses at the global level. Along the way, new communication systems, codes, and protocols were developed (and just as important, evangelized) that fundamentally recast the functions and expectations of media culture. Like almost every other endeavor in advanced societies over the past few decades, film and media studies has long relied on the internet for its basic operation, but it has yet to fully acknowledge, understand, or incorporate the internet as such into its fundamental scope. I prompted the contributors of this In Focus to use the fiftieth anniversary of ARPANET's connection to explore concepts and uses that the internet has fostered that challenge, expand, and illuminate our field in significant ways. These essays argue that the field should regard the internet not only as a conduit for audiovisual texts and their related discourses but also, regardless of its "content," as a system of technical affordances, policies, and discourses that has long shaped and will continue to shape the parameters of media and politics.

As Fred Turner has explored, the internet's initial design in its first decade or so was primarily shaped by seemingly contrasting but ultimately congruent American ideologies of technocratic Cold

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1 ARPANET was the network plan supported by the US Defense Department's Advanced Research Project Agency (ARPA). The SDS Sigma 7 was one of the first 32-bit computers. It was first manufactured in 1966 by Scientific Data Systems and was widely utilized in data systems in the 1960s and 1970s.

War engineering and countercultural ideals of open communication, concepts themselves drawn from much older models of "networks," as Grant Bollmer explores in his contribution to this collection.[2] These discourses fostered familiar narratives from communication history: a vast, technical deployment of industrial infrastructure and a utopian rhetoric of rapid, "limitless" communication, predominantly (though not exclusively) framed by the perspectives of educated upper-middle-class white heterosexual men. As computing became a consumer-focused business in the 1970s and 1980s, the network beckoned as a new frontier of commerce, adding then-ascendant libertarian discourses of economic expansion to the ideological mix. At the same time, although much of the initial hardware and software of the internet was developed in the United States, computing and networking technologies and cultures developed regionally as well, with European and East Asian cultures of computing and the role of public communication systems contributing substantively to the debates and development of the emerging network. Today, the network is global, with the vast majority of its users residing outside North America and Europe, and its most rapid expansion in Africa, South America, and South Asia.

   This brief industrial and cultural history of the internet's half century is not dissimilar from the histories of film, radio, and television in the twentieth century. It is appropriate, then, here in the pages of *JCMS*, to consider this history from the perspective of film and media studies. At the same time that the internet developed as a complex global media space, the film and media studies field broadened to encompass media beyond film and television, and approaches beyond textual, ideological, and industrial analysis. The acknowledgment and growth of the "M" in the purview of this journal, society, and the field coincided with the rapid public development and scrutiny of the internet since the mid-1990s. A look back through this journal reveals this expansion, from an exclusive concern with canonical Hollywood and Western European film in the 1960s to a broad and diverse exploration of a wide array of media forms, figures, genres, eras, regions, theories, and cultures. As Janet Staiger pointed out in a 2004 In Focus essay, this expansion has actually enhanced and deepened the field's original focus on film, drawing relevant connections between film and other media, because film "as a business and an art was never isolated from the other entertainments or from the political and aesthetic expressions with which it competed."[3] This broader conception of the field helped fuel the entry of other media forms, particularly television, into the discussion. By the time of Staiger's essay, the rapid growth of online media forms (at that time including message boards, blogs, MP3 and image file sharing, and early social media and video streaming) had already begun to challenge prevailing film and television studies accounts of aesthetics, spectatorship, audiences, identities, affect, and industries. A few years later, Josh Stenger's 2006 *Cinema Journal* analysis of fan participation in the online auction of *Buffy the Vampire Slayer* (The WB, 1997–2001; UPN, 2001–2003) costumes and props was arguably the journal's first internet-centric

2   Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: University of Chicago Press, 2008); and Turner, *The Democratic Surround: Multimedia and American Liberalism from World War II to the Psychedelic Sixties* (Chicago: University of Chicago Press, 2013).

3   Janet Staiger, "The Future of the Past," *Cinema Journal* 44, no. 1 (Fall 2004): 127.

article. It is also a cogent example of media studies in that era of "convergence," when the network was seemingly blurring boundaries between media forms, audiences, and industries, and scholars were caught up in trying to make sense of rapidly shifting ground.[4] Stenger's article further exemplifies how fan studies, with its emphasis on audience activity, drove much of the field's attention to the internet in the 2000s, when communitarian Web 2.0 rhetoric of sharing user-created content was on the rise, and commercially licensed online media libraries and global social media networks were still nascent.

However, the internet of 2019 is vastly different from that of 2006, let alone that of 1995 or 1969. The new cultural and political frontiers of online communication celebrated a decade ago have certainly opened for many people, but in much more vexing, invasive, and regressive ways than all but the most skeptical experts anticipated. The internet's evolution and constant turmoil only sharpens the continued need for our field's fundamental questions. The media studies of today may not always be focused on images (or even screens), but it is just as concerned as the film studies or television studies of the late twentieth century with the production and function of mediated meaning in culture. Design, access, ideology, affect—these all remain critical concerns whether the object under scrutiny is MGM, *La regle du jeu* (Jean Renoir, 1939), the BBC, *The Mary Tyler Moore Show* (CBS, 1970–1977), GPS surveillance, a Mexican bootleg DVD stall, *Grand Theft Auto V* (Rockstar Games, 2013), Beyoncé, Tumblr, Fortnite, or any other media form, platform, figure, network, or system. Despite decades of the field's expansion, there is still so much of *all* of these histories that remains un- and underexplored, and so many shifting contemporary issues and events that warrant our deepened and broadened investigation.

Although many in our field are understandably hesitant to explore media and concepts beyond their training or scholarly comfort zones, the cultural ubiquity and impact of online networking (and computing more broadly) demands our engagement. As Lisa Nakamura put it a decade ago, even if digital media is outside our wheelhouse, "we still need to study it."[5] Effectively analyzing these forms and technologies requires understanding their particular codes and debates and learning from neighboring fields' investigations. But this task is no different than the "homework" the field has had to do in the past, drawing from theories and approaches concerning nineteenth-century art, feminist theory, phenomenology, psychoanalysis, ethnography, cultural studies, postcolonialism, media archaeology, or any other body of thought that has informed our work. The more receptive we are to this project, the more we can learn and teach about the network, adding its key concepts and debates to our more familiar media histories and theories.

That said, in exploring an expanded relationship between media studies and the internet, it is also productive (as the pieces in this In Focus indicate) to be careful to distinguish the internet ("the network") from the broader concept of "the digital." There has been a great deal of cogent analysis of the latter in our field, particularly in regard

4   Josh Stenger, "The Clothes Make the Fan: Fashion and Online Fandom When *Buffy the Vampire Slayer* Goes to eBay," *Cinema Journal* 45, no. 4 (Summer 2006): 26–44.

5   Lisa Nakamura, "Digital Media in *Cinema Journal*, 1995–2008," *Cinema Journal* 49, no. 1 (Fall 2009): 155.

to the ontology and affect of digital images.[6] However, the digital is still too often elided with the internet, when it is more precise to consider them as separate, if closely interrelated, concepts. Just as cinematography contributes to but does not delimit the concept of cinema, digital technology makes the network possible but does not fully encompass it. "The digital" are the technologies (hardware, software, and related cultural modes) used to create and experience almost all media in this century. However, as digital sound and image recording, word processing, nonlinear audiovisual editing, and magnetic and optical disc formats indicate, digital hardware and software have had significant impacts on the production, distribution, and consumption of audiovisual media since at least the 1980s, long before the internet became a quotidian part of modern life. The difference since then is that the network—with its massive amounts of power-hungry computing hardware, server farms, endless cabling, wireless distribution nodes, and the software that governs it all—is the primary space in which people distribute and experience all that digital media.

Fundamental network architectures and code that fostered media sharing were developed over the internet's first two decades, including the key technologies of electronic communication protocols, email, message boards, chat, online file servers, and image formats. The primary story of the internet's second twenty-five years has been one of building on these forms and practices with greater computing power and telecommunications speeds, and marshaling a vast, global, complex industry to broaden network access (and just as important, the dominant cultural expectation or necessity of access) to billions of humans, enabling them to create, move, and share more and more complex digital media online, from image files in the 1990s to audio files in the 2000s and high-definition video files in the 2010s. Crucially, the internet from the mid-1990s forward has also increasingly become the world's primary space of information, commerce, entertainment, politics, and the proliferation and suppression of identities. As of 2018, according to the International Telecommunications Union, over half of the planet's population is now online.[7] So, while every bit of online media is certainly digital in its composition, reception, and storage (on our devices or on myriad remote servers), its online *circulation* on the network is what makes it culturally resonant.

More particular to the traditional concerns of our field, the remediation of older media forms online has fundamentally changed our perceptions of their formal coherence and cultural roles. Today, a film can certainly still be a physical strip of celluloid stored on large metal reels. It can also be a digital file stored on a hard drive in a movie theater's media server, or on a plastic disc sitting on your shelf. But a film is also a digital file stored on a remote server able to be retrieved on demand. A television program can be a national event simultaneously broadcast on a weekly schedule and

6   Francesco Casetti, *The Lumière Galaxy: Seven Key Words for the Cinema to Come* (New York: Columbia University Press, 2015); André Gaudreault and Philippe Marion, *The End of Cinema? A Medium in Crisis in the Digital Age* (New York: Columbia University Press, 2015); Stephen Prince, *Digital Visual Effects in Cinema: The Seduction of Reality* (New Brunswick, NJ: Rutgers University Press, 2012); D. N. Rodowick, *The Virtual Life of Film* (Cambridge, MA: Harvard University Press, 2007); Nicholas Rombes, *Cinema in the Digital Age* (New York: Wallflower Press, 2009); Kristen Whissel, *Spectacular Digital Effects: CGI and Contemporary Cinema* (Durham, NC: Duke University Press, 2014).

7   International Telecommunications Union, *Measuring the Information Society Report: Volume 1* (Geneva: International Telecommunications Union, 2018), 2.

a sequence of digital files stored on a remote server for viewing on demand. A pop record can be a groove on a spinning piece of vinyl and a set of metadata on a Spotify playlist pointing to—you guessed it—a digital file stored on a remote server for listening on demand. While the textual integrity of these digital versions of "born analog" objects is certainly fascinating, the larger question—philosophically, politically, and industrially (e.g., the ongoing debate over the cinematic integrity of Netflix's films)—is cultural: in the era of the internet's dominance, how are mediated audiovisual events now conceived, distributed, and experienced? As many seminal works in media history have pointed out, films, television shows, and pop singles are not transcendental cultural forms but quite specific products of their particular technological, industrial, and cultural eras, as were the optical toy, newspaper, novel, videotape, DVD, and so on.[8] The prevalence and rising industrial and cultural stature of online streaming platforms rightly challenges our assumptions about the boundaries and properties of all our past media forms and requires us to reorient the horizons of our inquiry as they become the default mode of audiovisual distribution and consumption. This does not mean seeing the world only through a shallow conceptual cul-de-sac of "new media," but instead practicing a more considered acknowledgment of the continuities and differences among these analog, digital, and networked forms and experiences. As Charles Acland writes in the introduction to *Residual Media*, "The dynamics of culture bump along unevenly, dragging the familiar into novel contexts."[9] The network of the past fifty years, as with every media system before it, has been exactly this mélange of past and present.

Accordingly, it is critical to remember that all media networks, like all technologies and languages, are designed, built, maintained, used, abused, and challenged by humans. The track record on this front is mixed. Historically, all media distribution networks are facilitated means for accessing audiences, for politics, commerce, and culture. These networks have always been an unevenly distributed resource, with priority given to one-way, top-down "broadcast" communications, as well as significant regulatory and economic gaps in access, speed, and other factors compounding social and cultural differences. As several recent critical histories have shown, computer networks of the 1960s through 1980s were initially designed for and facilitated many different kinds of information sharing and processing that did not entail commercial exchange or routine surveillance.[10] But since the 1990s, on the heels of the successful consumerist marketing of personal computers and software, the internet's predominant public

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8   William Boddy, *Fifties Television: The Industry and Its Critics* (Champaign: University of Illinois Press, 1992); Susan Douglas, *Inventing American Broadcasting: 1899–1922* (Baltimore: Johns Hopkins University Press, 1989); Simon Frith, *Music for Pleasure: Essays on the Sociology of Pop* (New York: Polity Press, 1988); Tom Gunning, *D. W. Griffith and the Origins of American Narrative Film: The Early Years at Biograph* (Champaign: University of Illinois Press, 1991); Raymond Williams, *Television: Technology and Cultural Form* (New York: Schocken Books, 1974).

9   Charles R. Acland, "Introduction: Residual Media," in *Residual Media*, ed. Charles R. Aceland (Minneapolis: University of Minnesota Press, 2007), xix.

10 Finn Brunton, *Spam: A Shadow History of the Internet* (Cambridge, MA: MIT Press, 2013); Joy Lisi Rankin, *A People's History of Computing in the United States* (Cambridge, MA: Harvard University Press, 2018); Turner, *From Counterculture to Cyberculture*.

role has instead been as a commercial media distribution service primarily fueled by the commodification of passive surveillance.

The distribution of media via the internet has certainly disrupted the established media networks' business models and distribution chains (particularly the print periodical and sound-recording industries).[11] However, despite the utopian promise of enhanced individual expression and access, it has also bolstered the dominance of major network nodes, encouraged by speculative capital and a largely laissez-faire regulatory environment across much of the planet. Some of these nodes have been historical leaders in the "old" media networks: the Disneys, AT&Ts, and Comcasts that have weathered and successfully adapted to "disruption," taking advantage of the network to enhance their scale. But other nodes—such as the US-based "FAANG" group of Facebook, Amazon, Apple, Netflix, and Google, or the Chinese "BAT" group of telecommunication giants Baidu, Alibaba, and Tencent—have erupted in stature over the space of a couple of decades (or less), thriving on the speed and volume of network-enabled exchanges and transactions.[12]

Thus, as with every "old" media network, the internet is still dominated by big players and their big strategies, with small players largely reliant on the former's networks, tools, and platforms.[13] For better and worse, nearly all of us who access the internet use some or all of these corporations' tools and platforms in our own day-to-day work and lives. Alternative platforms and modes exist and continue to emerge, and they have provided provocative new forms of communication, in often innovative combinations of text, audio, and still and moving images. However, as is typical in the long history of media distribution, these platforms have themselves often become subsumed within larger entities and their systems put in line with their new parents' priorities—as has happened with YouTube to Google, Instagram and WhatsApp to Facebook, and Tumblr to Verizon—or are marginalized or even shut down if they stray too far from the network's hegemonic values.

Acquisition and closure are extreme forms of regulation, which, as Ramon Lobato has explored, takes many forms including and beyond government and industry-driven policies.[14] The history of the internet is more precisely a history of regulation, from the standardization of data speeds, wireless frequencies, and communication protocols like TCP/IP and HTML to the international maintenance of IP addresses and domain names, and the recent call for clearer disclosure of data sharing. But it is also a regulatory history familiar to all media forms: of technical consistency, content regulation and limits, concerns about exposure and screen time, and the soft regulation of discourses, as technologies and firms burnish their public-facing rhetoric and reputations. More recently, as corporate social media networks like Facebook, Twitter,

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11 See Jeremy Morris, *Selling Digital Music, Formatting Culture* (Berkeley: University of California Press, 2015).

12 While Apple has historically been driven by consumer hardware, in the time-honored strategy of RCA in the 1930s, it is now shifting more of its resources and focus to its networked media distribution services. Natalie Jarvey, "As Apple Bets More on Its Services, Who Benefits?," *Hollywood Reporter*, January 17, 2019, https://www.hollywoodreporter.com/news/as-apple-bets-more-services-who-benefits-1176261.

13 For example, the nearly invisible but overwhelming dominance of Amazon Web Services in the cloud-computing market.

14 Ramon Lobato, *Shadow Economies of Cinema: Mapping Informal Film Distribution* (London: BFI Press, 2012).

WhatsApp, and YouTube have become practically synonymous with "the internet" in much public discourse, the de facto regulation of what Ulises Ali Mejias refers to as "nodocentrism" has produced networks that rely on and enforce particular kinds of networked participation.[15] As proprietary and content algorithms directly intercede in the function of the network on every major platform—including Google, the world's primary search engine—the network and its contents are rendered to us filtered, with highly variable visibility and quality, depending on our privacy settings, access technologies and practices, and the data in the usage histories attached to our devices and IP addresses.[16] Moreover, the motivations and honesty ascribed to our major corporate network hubs, which were never golden to begin with, are increasingly tarnished beyond repair. The tentative optimism surrounding the openness and expression of the Web 2.0 era has given way, in the space of a decade, to anger and despair over the naked exploitation, cynicism, and distrust of seemingly inescapable social networks today.[17]

Thus, after fifty years, and despite many undeniable technical and cultural achievements, the internet is also ultimately a conduit for failure: when grandiose expectations meet the mundane and sometimes tragic realities of buggy software, poor user-experience design, deliberate sabotage, unforeseen usage, basic physics, and the various "digital dams" of networked capitalism theorized by Neta Alexander.[18] The old celebratory rhetoric of the internet's digital plenty now regularly founders on bad Wi-Fi, downed power lines, malicious hacks, insufficient coding, geoblocking, chaotic copyright and content enforcement, lagging government policies, and deliberate corporate exploitation of users and their data. As the public mission statements of every Silicon Valley firm indicate, the internet of technocratic rhetoric has fundamentally promised to make our lives easier and more fulfilling. To be fair, the internet does, indeed, make some aspects of many of our lives easier and more fulfilling; otherwise, we wouldn't use it so unceasingly. But it also subjugates us to its syntax and routines, renders us into fungible data sets beyond our control, distorts our democratic processes and perceptions of reality, and, in its insistence on its particular forms of networked communication, fosters rigid ideologies of "participation" that require modes of data-generating interaction rather than other exchanges and experiences that may be more socially productive or significant.

While the internet itself continues to change well beyond its ARPANET roots, the real, unavoidably problematic network of our digital systems, devices, and identities is not going away and will become only more enmeshed in our lives. However, in our

15   Ulises Ali Mejias, *Off the Network: Disrupting the Digital World* (Minneapolis: University of Minnesota Press, 2013), 9–13.

16   Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York: New York University Press, 2018); John Cheney-Lippold, *We Are Data: Algorithms and the Making of Our Digital Selves* (New York: New York University Press, 2017).

17   James Bridle, *New Dark Age: Technology and the End of the Future* (New York: Verso Books, 2018); Alex Rosenblat, *Uberland: How Algorithms Are Rewriting the Rules of Work* (Oakland: University of California Press, 2018); Siva Vaidhyanathan, *Antisocial Media: How Facebook Disconnects Us and Undermines Democracy* (New York: Oxford University Press, 2018); Shoshanna Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs Books, 2019).

18   Neta Alexander, "Rage against the Machine: Buffering, Noise, and Perpetual Anxiety in the Age of Connected Viewing," *Cinema Journal* 56, no. 2 (Winter 2017): 1–24.

continued exploration of "old" media, those of us who study film, television, radio, sound recordings, print publications, video games, and other media forms should find this situation familiar. As Lucas Hilderbrand has argued in his provocative In Focus dossier on "The 'C' and 'M' in SCMS," media studies today should be a "collective endeavor that maintains some semblance of unity while remaining dynamically supportive of different methods, media, and constituencies."[19] The collective histories, experiences, perspectives, and analyses of the breadth of our field are necessary if we are to better understand how the network evolved and help start contributing to a more democratic and humane vision of its future.

The term "network" has long been used in contexts ranging from human anatomy to national economies as ways to conceive of both circulation (between otherwise disparate objects) and containment. In the first essay, Grant Bollmer explores the idea of the "network imaginary" across the past few centuries, arguing that we need to think more broadly and deeply than the technology of the internet to consider the possible ontologies and social functions of networks.

Andrew J. Bottomley focuses on a particularly significant aspect of the internet's network imaginary: content aggregation. Tracing the history of aggregation on the internet, Bottomley argues that, despite discourses of plenty promised by Chris Anderson's 2004 "Long Tail" essay, and different models of cataloging content presented to producers, users, and advertisers, aggregation has instead continually reinforced preinternet strategies of "stickiness" that favor the prominence of established brands and platforms over the discovery of more obscure content.[20]

In her essay, Abigail De Kosnik reminds us of the history of alternative cultural practices that the internet has fostered and how hegemonic discourses of impropriety, illegality, and even obscenity have attempted to curtail the innovative uses that marginalized communities have made of new media technologies. The otherwise disparate remix cultures of sampling in 1980s and 1990s hip-hop, pioneered by young African American men, and transformative storytelling in fan fiction, led by queer women, were regularly challenged by established legal and cultural power structures, and both presaged and contributed to the current understanding of "remix culture" online today.

Finally, Mattias Frey critiques both the algorithmic culture of online recommendation systems (e.g., the systems that Netflix, YouTube, and countless other sites use to recommend new content for consumption) and the perpetual fear that the established critical culture has about such systems. Instead of a paradigm shift, Frey's evidence and analysis suggests that neither traditional media-circulated critics nor algorithmic recommendation systems have the level of impact on viewers' choices as their reputations would suggest. As the internet's first half century has indicated, and as all these essays explore, human interactions and shared narratives, in all their messiness and complexity, still have a dominant role to play in human culture.   ✱

19   Lucas Hilderbrand, "The Big Picture: On the Expansiveness of Cinema and Media Studies," *Cinema Journal* 57, no. 2 (Winter 2018): 115.

20   Chris Anderson, "The Long Tail," *Wired*, October 1, 2004, https://www.wired.com/2004/10/tail/.

Networks before the Internet

by Grant Bollmer

T he story of the internet's creation usually goes something like this: In the early 1960s an engineer working for the RAND Corporation, Paul Baran, published an eleven-part memorandum titled *On Distributed Communications*, which outlined the possibility of "packet switching."[1] Baran claimed that distributed, networked telecommunications would allow military communication to persist in the wake of a catastrophic attack, something he stressed given the seemingly imminent threat of nuclear war. Influenced by Baran's models, the Department of Defense and universities across the United States collaborated to create ARPANET, a packet-switching network designed to share physical computer resources among universities, even if, unlike the model sketched in Baran's memos, it was not built to withstand the bomb. By the 1980s, ARPANET was linked with or replaced by other nonmilitary (but still predominately American) communications networks, like the National Science Foundation's NSF-Net. Ten years later, the original government-sponsored "network of networks" had been privatized. In sum, as Janet Abbate tells us, the history of the internet "is a tale of collaboration and conflict among a remarkable variety of players," an ever-mutating patchwork of competing interests.[2]

The usual tales of the internet's development tend to sideline particular networks that shaped how the internet came to be in countries other than the United States. Narratives that privilege ARPANET inevitably position the United States—its military, universities, and corporations—as the locus of digitally networked power. They often ignore how various systems for digital networks existed in different configurations in different places and times, for different ends. They also overlook the alternatives not chosen for a particular technology. The specific protocol that made ARPANET central to the foundation of the internet, TCP/IP, existed and continues to exist alongside a range of alternatives, such as proprietary protocols like Apple's AppleTalk or Novell's IPX/SPX (Internetwork Packet Exchange / Sequenced Packet Exchange), or, most significantly, RINA (Recursive

1 Packet switching refers to the ability to separate a message into discrete "packets," transmit the packets across different routes carried by physical infrastructures, and reassemble them at their destination. Packet switching was also independently proposed by the British computer scientist Donald Davies. See Paul Baran, *On Distributed Communications: IX. Security, Secrecy, and Tamper-Free Considerations* (Santa Monica, CA: RAND Corp., 1964), 8.

2 Janet Abbate, *Inventing the Internet* (Cambridge, MA: MIT Press, 1999), 3.

InterNetwork Architecture), designed as a replacement for TCP/IP that takes into account its many limitations. These alternatives could—probably subtly but perhaps significantly—transform the politics, economy, structure, and experience of digital networks.[3] Thus, a broad range of internet histories have worked to challenge the privilege given to ARPANET, the United States, and the militaristic foundations of the internet, demonstrating that our current internet is one possibility among many, and that the technical and social institutions embedded in the material form of the internet are still marked by contingency rather than necessity.[4]

What I offer here is more oblique than the approaches taken by those working to globalize internet history or those who stress the alternatives and conflicts embedded in the development of technology, even though I follow their goal of rethinking the centrality or inevitability of the descendants of ARPANET. Challenging the particular political and social hegemony embedded in the internet today requires overturning a much wider cultural formation than that which is immediately conjoined with the internet's technical and material form. This involves a genealogy of beliefs about the social relations fostered, determined, or remade by the internet, beliefs about the necessity of "connection" or "connectivity" as that which grounds the social. The internet, I claim, is a material instantiation of a particular network imaginary, one that reduces the world to little more than a series of nodal points and the flows that move between them. Neither is this imaginary determined by the internet itself—at least directly—nor is it the only way of understanding the relations embedded within and perpetuated by the internet. It is, however, characteristic of countless popular and scholarly discussions of the internet.[5] Like the protocols and technologies of the internet, this imaginary has a history; how we imagine the internet is the product of contestation and crisis, filled with forgotten minutiae, historical dead ends, and competing definitions of network, flow, and connectivity. Imagining a networked society was something that happened only through a series of dispersed historical precedents. These precedents include not just the direct technical predecessors of digital networks but also the networks figured in the histories of textiles, anatomy, branch banking, railroads, radio, and television. These networks all intersect at particular points in time, and their linkages shape what we imagine to be the social and economic relations embedded in the internet. How the internet came to be is indeed a story of engineers, bureaucrats, and hobbyists—but it is also a story of how particular beliefs about networks and connectivity were reinvented throughout Western modernity.

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3   For an important critique of TCP/IP, see Alexander R. Galloway's *Protocol: How Control Exists after Decentralization* (Cambridge, MA: MIT Press, 2004). Lori Emerson's forthcoming *Other Networks* promises to identify and historicize many of these alternatives. For a published discussion of this project, see Jay Kirby and Lori Emerson, "As If, or, Using Media Archaeology to Reimagine Past, Present, and Future: An Interview with Lori Emerson," *International Journal of Communication* 10 (2016): http://ijoc.org/index.php/ijoc/article/view/4764/1703.

4   Decentering these narratives is one of the goals of projects like Gerard Goggin and Mark McLelland's edited volumes *Internationalizing Internet Studies: Beyond Anglophone Paradigms* (London: Routledge, 2009) and *The Routledge Companion to Global Internet Histories* (London: Routledge, 2017).

5   This view is perhaps best represented by Manuel Castells's *Information Age* trilogy. See Castells, *The Rise of the Network Society: The Information Age; Economy, Society, and Culture,* vol. 1, 2nd ed. (Malden, MA: Blackwell, 2000).

In other words, material objects and practices, including but not limited to woven fabrics and medical observations of the human body's circulatory system, provide material form for the set of concepts—the network imaginary—we now use to describe the internet and the relations it perpetuates. This imaginary emerges from a series of disparate "cultural techniques," which Bernhard Siegert defines as "operative chains that precede the media concepts they generate" or the complex articulation of objects, things, and practices that produce symbolic distinctions we use to describe the function of media.[6] These operative chains are material and performative. The concepts they generate iterate, reproducing similar—though not identical—material arrangements over time. They are recursive, to follow Markus Krajewski.[7] What I offer here is merely a sketch of some of these operative chains, with the acknowledgment that this story is likewise limited to Europe and North America.[8] But I hope this sketch is rendered with enough detail to demonstrate how these networks before the internet continue to shape the concepts we often attribute to the materialities of the internet.

Throughout the 1700s and 1800s, the word "net-work" generally referred to a manufactured net of rough weave. This included ropes encircling hot-air balloons, rigging on ships, and fashionable women's headwear.[9] Samuel Johnson, in his 1755 *Dictionary of the English Language*, defined "network" as "any thing reticulated or decussated at equal distances, with interstices between the intersections."[10] A review of a biography of Johnson, from 1793, noted that Johnson's critics took this particular definition as evidence that his dictionary was lacking in clear definitions.[11] Why such an abstract definition for such a concrete thing?

Although his critics may have been flummoxed by the vagaries of language, Johnson was probably aware that, by the mid-1700s, "net-work" had already ceased to refer solely to physical netting. These nets metaphorically gave form to things that appeared as if without material grounding. One poem printed in an American newspaper in 1786, a meditation on death and memory titled "Loss of Friends," is instructive as to how the meaning of "network" had changed during the decades since it was formalized in a dictionary: "Incurious webs / Of subtle thoughts, and exquisite design; / (Fine net-work of the brain) to catch a fly!"[12] Thoughts, this poet suggests, are a means to trap and contain the memory of another, like the web of a spider. But the threads of the brain's "net-work" supply only a loose means to trap. There is always a means of

6 Bernhard Siegert, *Cultural Techniques: Grids, Filters, Doors, and Other Articulations of the Real*, trans. Geoffrey Winthrop-Young (New York: Fordham University Press, 2015), 11.

7 Markus Krajewski, *The Server: A Media History from the Present to the Baroque*, trans. Ilinca Iurascu (New Haven, CT: Yale University Press, 2018).

8 The arguments I offer here are condensed and revised versions of ones I advance in my "Network Archaeologies," *Inhuman Networks: Social Media and the Archaeology of Connection* (New York: Bloomsbury Academic, 2016), 23–107.

9 "Plan of the Undertaking," *Essex Journal*, July 9, 1784, 2; "News of the Week," *Spectator*, January 19, 1833, 50; G. Brodie, "Fashions for February," *Harper's New Monthly Magazine*, February 1864, 432.

10 A reprint of this definition can be found as Samuel Johnson, "Network," *The General Advertiser and Political, Commercial, Agricultural and Literary Journal* (October 4, 1790), 3.

11 "New Publications," *The Lady's Magazine, and Repository of Entertaining Knowledge*, January 1793, 90–91.

12 "Loss of Friends," *Maryland Journal and Baltimore Advertiser*, September 1, 1786, 4.

escape between the interstices and intersections of the net. In 1786 we see something quite clearly: "net-work" names a form that drifts between the material and the meta-physical. While initially a material thing, it had come to also refer to an abstraction that constrains, if tentatively.

In "Loss of Friends," "network" means thoughts, yet the imagery of the brain per-haps also refers to the nerves, to the brain's neural network. However, this interpretation would require us to surmise the author was aware of what would have been, at the time, a cutting-edge scientific debate. The history of the nerves is characterized by a battle between "reticularists" and "neuronists."[13] The reticularists, among whom were Nobel laureate Camillo Golgi, argued that the nervous system comprised a single intercon-nected network. The neuronists, influenced by the models of Spanish neurobiologist Santiago Ramón y Cajal, saw the nerves as independent cells. By the close of the 1800s, it was clear that the neuronists were the victors in this debate. Before that, though, the reticulaists' model, of one network of nerves, was common.

Perhaps the most significant effect of the use of "network" to describe the nerves is the assumption that a vital fluid moved within the networks of the human body, a belief developed through parallels between the nerves and blood vessels. The link be-tween fluidity and health descends from the medical writings of Aristotle and Galen, physician to the emperor of Rome. The association between health and flow was then articulated with blood circulation through the work of English physician William Har-vey (1578–1657). Harvey's model of blood circulation provided a metaphor that shaped city planning (the health of a city would come from the "circulation" of human bod-ies), economic thought (the health of an economy would emerge from the "circulation" of capital and commodities), and the "hydraulic" models of the nerves, common until around 1833, which argued that a bloodlike fluid literally moved throughout the body's singular nervous network.[14] In Harvey's model, barriers to circulation and excessive, uncontrolled circulation could generate any number of biological disorders, a metaphor about "health" taken up by advocates for urban movement and the free exchange of commodities. The nerves provided an archetype for health in all that could be thought networked, extending from the body to the city, the state, and political economy.

The operative chains that unite textiles and the body's fluidities reveal two contra-dictory beliefs about networks. On the one hand, networks constrain and trap, as a net. On the other, the regulated, free circulation and flow of some fluid substance, within the boundaries of the network, is the means for biological, social, governmental, and economic well-being, of the "health" that emerges through circulation. Throughout the long nineteenth century and into the twentieth, "network" began to describe (and also define the stakes of legal, regulatory language for) the large-scale industries of rail-road, telegraph, and radio.[15] For instance, when the National Broadcasting Company

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13 Laura Otis, *Networking: Communicating with Bodies and Machines in the Nineteenth Century* (Ann Arbor: Univer-sity of Michigan Press, 2011), 7–8.

14 See Richard Sennett, *Flesh and Stone: The Body and the City in Western Civilization* (London: Faber and Faber, 1994).

15 As just one example of (generally) popular commentary on network regulation and scale, which argues that radio networks standardize and erode local specificity in the name of corporate conglomeration and increased profits, see Merrill Denison, "Why Isn't Radio Better?," *Harper's Magazine*, April 1934, 576–586.

(NBC) was split into two separate radio affiliates in 1942 (in response to antitrust litigation), these were called the Blue Network (which later became ABC) and the Red Network. What a network was, and how it extended across space, was central to the economic and political regulation of varied communication and transportation technologies in the twentieth century. At its most abstract, "network" began to refer to social conspiracies, most commonly of the anti-Semitic and anticommunist varieties, extrapolating metaphorically from the seemingly invisible agencies of the railroad, telegraph, and later radio, and their ability to collapse space and time.[16] The dialectical opposition between networked connection as a trap and networked flow as a means of "health" persisted, moving between the material and the metaphysical depending on how networked agency was imagined—that is, until the Great Depression, which signaled the emergence of a major rearticulation of how networks were imagined, thanks, particularly, to branch-banking networks.

The most notable conflation of networked connection with social conspiracy appears in the varied publications of the British historian Nesta H. Webster. Webster, an anti-Semite and onetime member of the British Union of Fascists, was also a bestselling author whose admiring public included Winston Churchill.[17] The linkage of network technologies—specifically the railroad and telegraph, whose massive scale dwarfed individual agency—with an invisible, controlling, collective social agency, embodied in the form of the secret society, is a theme throughout Webster's writings. One of her most famous books, *Secret Societies and Subversive Movements*, opens with a quote from a Benjamin Disraeli speech to the House of Commons: "A great part of Europe—the whole of Italy and France and a great portion of Germany, to say nothing of other countries—is covered with a network of these secret societies, just as the superficies of the Earth is now being covered with railroads."[18] Here Webster makes a move toward understanding networks as secret, invisible associations that parallel but transcend the material agencies of technology and corporations. In so doing, Webster turns the network's operative chain once again toward the metaphysical, arguing that these secret societies often maintained their power not via political economy or bureaucracy but through the occult or conspiracy, invoking the usual anti-Semitic trope of *The Protocols of the Elders of Zion* as an example of this invisible determining agency.

In her 1926 book *The Socialist Network*, however, Webster eschews such references to the occult and the most overtly anti-Semitic aspects of her worldview. Instead, she links the membership of countless communist, pacifist, and anarchist organizations across the globe to argue for a conspiracy, the "socialist network," that undermines the consolidation of British state power and empire.[19] While this model precedes numerous influential models of networks and social influence, such as one advanced in Mark Granovetter's famous "The Strength of Weak Ties," the most striking of Webster's

16 Compare James Carey, *Communication as Culture: Essays on Media and Society* (New York: Routledge, 1988), 215.

17 Winston S. Churchill, "Zionism versus Bolshevism: A Struggle for the Soul of the Jewish People," *Illustrated Sunday Herald* (London), February 8, 1920, 5. For more on Webster, see Martha F. Lee, "Nesta Webster: The Voice of Conspiracy," *Journal of Women's History* 17, no. 3 (2005): 81–104.

18 Nesta Webster, *Secret Societies and Subversive Movements* (London: Boswell, 1924), n.p.

19 Nesta Webster, *The Socialist Network* (London: Boswell, 1926), 33.

conclusions emerge only in the final pages of her book.[20] There, Webster extrapolates from her charting of social connection to advance an admittedly vague theory of networks, one that appears to precede many of today's political arguments that assume networked sociality. Networks are decentralized, she claims, simultaneously organized and disorganized without an overt hierarchy. Networks are flexible and dispersed; eliminating any one part of the network does little to challenge it as a whole. Networks are global and totalizing and are able to incorporate a range of seemingly oppositional groups by virtue of social interconnection. Finally, resistance to networks must also exist in the form of a network. Thus, we see in Webster's *Socialist Network* what could be thought of, apropos of Foucault, the "birth" of social networks.

Other authors challenged this view of networks at approximately the same time, however. In the pages of the *Economist* and the *Wall Street Journal*, especially after the 1929 stock market crash, a comparison between American and Canadian banks regularly stressed banking infrastructure. In these publications, Canadian banks were described as a united, national network, whereas American banks were characterized as autonomous and isolated. This may be because the law in many states prohibited branch banking in the 1920s and 1930s, and Texas and Illinois completely prohibited branch banking until the 1970s and 1980s. This prohibition was often due to populist fears that branch banking would, through its interconnected network, move a flow of capital away from farmers and workers and toward Wall Street bankers—a fear not exactly separate from the other, anti-Semitic fears of networks mentioned earlier. Branch banking would, many thought, create "a vast network of pipe lines leading to Wall Street, by the very men who had effected the gigantic railway and industrial combinations."[21]

As the Depression destroyed the lives of those same farmers and individuals who resisted branch banking, populist politicians began to advocate for banking networks as a means to link capital and community. This view was first espoused by senator A. J. Beveridge, of Teddy Roosevelt's short-lived Progressive Party. Before the crash, in 1911, Beveridge wrote in the pages of the *Saturday Evening Post* to advocate for banking networks—following the Canadian model—as a means to guarantee a socially embedded economic structure.[22] By the time Frank Capra directed his populist, banking-themed films *American Madness* (1932) and *It's a Wonderful Life* (1946), we can see just how easily social connectivity and financial connectivity had been broadly conflated after the Depression. The substance that would flow throughout the network would bind and link a community together.

This story is merely a gloss on the difficult, complicated history of the idea of networks, connectivity, and flow. But hopefully, we can see how ARPANET represented one moment in the long history of networks and is neither an endpoint nor a beginning. ARPANET provided a material means to conjoin and unify the various networks and flows from centuries prior: technological, social, financial, biological. The major influence of ARPANET, then, was to provide the means by which these

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20   Mark S. Granovetter, "The Strength of Weak Ties," *American Journal of Sociology* 78, no. 6 (1973): 1360–1380.

21   William Hayward, "For Fair Play and a Square Deal," *Wall Street Journal*, October 5, 1907, 6.

22   A. J. Beveridge, "Canada's Currency System Unique in Many Respects," *Saturday Evening Post*, reprinted in *Wall Street Journal*, June 24, 1911, 6.

different networks became conjoined: that "substance" we call information (and especially information as a militarized resource). Information theory and cybernetics, so central for the emergence of what N. Katherine Hayles has called "posthumanism," reinvent the long history of networks, if just as one recursion of a much longer series.[23]

The imaginary sketched above persists today. The dialectic that vacillates between networks as a uniting force necessary for community and networks as a connective trap can be seen in popular ways of grasping the social influence of the internet. For every *Kony 2012*, visualizing a McLuhanesque Global Village emergent from the intertwining of the internet and social media, there are examples like Edgar Wright's 2013 *The World's End*. At the climax of Wright's film, we discover that an intergalactic entity named "The Network" has infiltrated a provincial British town and replaced its residents with ageless, perfected, robotic versions of themselves. These robotic replacements, called "blanks," are connected throughout the universe and appear to be well behaved and polite. Wright's protagonists resist the connectivity of The Network in the name of an anarcho-libertarian desire for fun and the right to be unpleasant—and to trigger the apocalypse.[24] Being free from connection, in *The World's End*, seems to require the end of the world. Beyond narrative depictions of the constraints of networked connection, "complex" television and the "alternate reality games" fostered by transmedia narratives likewise depict a world of interconnected links, making sensible an imaginary that developed on the margins of Western modernity.[25]

Questioning and challenging the particular ways the internet has shaped everyday life requires a historical scale that far exceeds that thing we have seen develop over the past fifty years. "The internet" is linked with social imaginaries that precede its existence, derived from other material practices—many of which, like blood circulation, may seem to be the most "natural" processes that could possibly exist. These imaginaries will exist and recur long after the decay and destruction of the particular infrastructures that make up the internet. To reinvent the possibilities of technology today necessitates a revision of the abstractions that too often pass unquestioned, including the very notion of social relation as connective or of health maintained through the management of flows.   ✳

23 N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999).

24 I treat both of these examples at far more length in *Inhuman Networks*, 204–220.

25 On network aesthetics, see Patrick Jagoda, *Network Aesthetics* (Chicago: University of Chicago Press, 2016); and James J. Hodge, "Sociable Media: Phatic Connection in Digital Art," *Postmodern Culture* 26, no. 1 (2015): https://muse.jhu.edu/article/631080/. On "complex" narrative form, see Jason Mittell, *Complex TV: The Poetics of Contemporary Storytelling* (New York: New York University Press, 2015). For my commentary on these themes, see Grant Bollmer, "The Sense of Connection, or, Complex Narratives and the Aesthetics of Truth," *Frame: Journal of Literary Studies* 31, no. 2 (2018): 53–70.

Giant Pools of Content: Theorizing Aggregation in Online Media Distribution

by Andrew J. Bottomley

I t has been fifteen years since *Wired* magazine editor Chris Anderson first introduced the concept of the "long tail" for describing how the contemporary online media environment was reshaping the production and consumption of media content and other cultural products.[1] In economic terms, the basic premise of the long tail is that the internet lowers the barriers to entry found in traditional media distribution, such as channel capacity constraints in radio and television broadcasting, shelf-space limitations in physical bricks-and-mortar retail stores, and editorial gatekeepers. Online, any and all content can be made available regardless of its origins or popularity, and digital search technology and recommendation systems allow audiences to discover niche and otherwise obscure content. Thus, circa 2004, Anderson's long-tail theory posited that our economy and culture were shifting away from a model of mass media that focused on a relatively small number of mainstream "hits" at the head of the product demand curve and toward a huge number of niche products and markets in the tail (hence, the "long tail"). It suggests that the potential combined audience size for niche, low-popularity content may someday rival that of the large audiences for popular mass media content. At its core, the concept of the long tail—much like Tim O'Reilly's contemporaneous Web 2.0 concept—was a business model, conceived of as a solution to the failures of web commerce during the earlier dot-com era (1995–2001).[2] Nevertheless, the long-tail concept carried deep cultural significance, promising to democratize and diversify the production and consumption of media.

Yet the niche marketing phenomenon that Anderson described in 2004 was hardly new. He was simply articulating a new way for online businesses to strategize and monetize their offerings. The niche media producers and content that populated the long tail always existed; they

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1   Chris Anderson, "The Long Tail," *Wired*, October 1, 2004, https://www.wired.com/2004/10/tail.

2   Tim O'Reilly, "What Is Web 2.0: Design Patterns and Business Models for the Next Generation of Software," *O'Reilly Media*, September 30, 2005, https://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html.

just were not economically advantageous in a mass media economy. Moreover, the means for distributing and accessing these cultural products online had been developing for a decade. In Anderson's original 2004 *Wired* essay, he points to digital platforms like Amazon, Netflix, Apple iTunes, and Rhapsody, some of which dated to the mid-1990s. These were online retailers and media subscription services that all operated off one central principle: content aggregation.

In this essay, I historicize the concept of aggregation by tracing the rise of the web portal, specifically highlighting audio media and the case of AudioNet (later Broadcast.com). AudioNet innovated the vertical portal idea for audio and video content in the late 1990s, signaling a shift toward aggregation as the primary distribution model in the digital media industries. By "content aggregation," I am referring to the practice of pulling media content from various sources and making it accessible at one dedicated, easy-to-find location. Nearly all the major digital media companies and platforms of the post-1990 web era operate through principles of aggregation: Google, YouTube, Netflix, Spotify, iTunes, and even social network sites like Facebook and Twitter. Aggregation lies at the heart of one of the great promises of the internet: the ability of individuals to access whatever they want, whenever and wherever they want.[3] Tied up in these utopian visions are metaphors of abundance, prosperity, and democratization.

Historically, modern computing and the internet are founded on the principle of abundance (and overabundance). Vannevar Bush's key observation, articulated in his prescient 1945 article "As We May Think," was that, although the scientific community was producing a trove of vital research and information, it was becoming impossible for researchers to sort through this immense maze of information and make practical use of it.[4] He argued that scientists had a responsibility to share their research more widely and to find ways to make knowledge more accessible, to give individuals more control over information. Bush's solution to these problems of information overabundance and inaccessibility was computer-like machines, such as his theoretical Memex (or memory extender), which could enhance collaboration and perform functions such as compression, storage, and retrieval.[5] During the 1960s and 1970s, the internet followed this model; it was primarily a research-oriented tool for scientists and other knowledge workers to share information and communicate with one another.[6] In other words, it served to aggregate both users and data; the internet and its simple, adaptable network protocols enabled a varied, geographically dispersed community of scientists, technologists, military personnel, and graduate students, not to mention a growing international cadre of computer

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3 This is is, of course, a false promise. Many critics have called out this myth of on-demand "endless choice." See, e.g., Chuck Tryon, *On-Demand Culture: Digital Delivery and the Future of Movies* (New Brunswick, NJ: Rutgers University Press, 2013), 177.

4 Vannevar Bush, "As We May Think," *Atlantic Monthly*, July 1945, 101–108.

5 The Memex is a theoretical machine that was never built. It is essentially a desk-sized mechanical computer that combines elements of modern computers and the internet: it stores books, records, and communications, and is mechanized so that the researcher can consult these materials with speed and flexibility. Among its features is the ability for users to keep track of their research paths, akin to practices of bookmarking and associative linking.

6 Janet Abbate, *Inventing the Internet* (Cambridge, MA: MIT Press, 1999), 113–145.

hobbyists, to virtually assemble and to share ideas that would otherwise have been isolated. Herein lies the source of the discursive rhetoric of access, openness, flexibility, and decentralization that is so often attached to the internet, and the presumptions of democratization and diversification that flow from them.[7] Of course, as the media scholar Thomas Streeter's study of "internet romanticism" reveals, this popular perception of the internet as open and disruptive is myth, a product of late capitalist social and political thought and historical peculiarities.[8]

Although access to an abundance of people and information is the desired goal in our networked culture, much as Vannevar Bush envisioned, this access invariably brings with it a problem of overabundance that must be addressed through methods of sorting and selection.[9] Thus, aggregation online always involves elements of both profusion and control. The earliest web directories and search engines are prime examples of this seeming contradiction. Starting in 1992, as the US government opened up the internet for commercial use and Tim Berners-Lee's World Wide Web system helped make it possible for organizations and individuals to create their own websites with (relative) ease, there was a profusion of new websites on the open web. Findability quickly became a looming issue: if you were a web user in the mid-1990s, there was plenty of content to engage with online, yet it could be difficult to locate, especially if you were looking to discover something brand new. Thus, the first web directories and search engines sprung up to help give users mediated access to the web. The earliest search engines, such as Archie (launched in 1990), were essentially indexes of public file listings, helping users find files (e.g., texts, images, software) that were scattered all over a vast network. Web directories, such as the original Yahoo! (launched in 1994), similarly presented a list or catalog of links to websites. Much like a mail-order shopping catalog makes it possible to browse a huge array of consumer goods, these web directories gathered up hundreds and even thousands of hyperlinks into one location, giving users a perusable inventory of the web.

These web directories were often organized by specialized categories, geographic regions, and languages—again, like shopping catalogs. For example, there were web directories devoted to internet radio stations, such as the MIT List of Radio Stations on the internet. Rudimentary in design, the directory simply provided a listing of radio station websites with hyperlinks, plus limited details about each station's geographic location and programming format. This made it easy for radio listeners to find out whether they could listen to their local radio stations online and to discover new radio stations or listen to distant stations otherwise unavailable to them over the terrestrial AM/FM airwaves. Functioning as an aggregator, a directory like the MIT List helped

7   The irony of this rhetoric of openness and democratized access should hopefully be clear. While this collection of scientists, technologists, and hobbyists may have seemed like a grassroots community in comparison to the hierarchical bureaucracies of the US military or IBM, access and control were nonetheless centralized among an (almost entirely white, male) educated elite. There were, and still are, significant barriers of access keeping out minority voices.

8   Thomas Streeter, *The Net Effect: Romanticism, Capitalism, and the Internet* (New York: New York University Press, 2011), 169.

9   Today, this problem is frequently addressed through the concepts of "information overload" and the "attention economy."

make internet radio content findable online, yet it also brought a top layer of control to the media ecosystem.[10] Web directories and search engines inherently perform acts of curating, reorganizing and representing the content of the web for their users.[11] As users become reliant on these aggregators to access the web, any website or content that is relegated to a lower status or left out of the aggregator's rankings entirely becomes practically unfindable. Circa the mid-1990s, if an internet radio station was left off the MIT List, it was almost as if that website did not exist.

As the number of websites and users exploded in the 1990s, directories transitioned to portals, and the curatorial focus became more targeted and medium specific. Yahoo! expanded from a human-edited web directory in the mid-1990s— originated under the name "Jerry and David's Guide to the World Wide Web"—to a major web portal in the late 1990s. Indeed, the late 1990s and early 2000s were the era of the web portal: specialized aggregator websites that brought together diverse media and information sources in one place.[12] The idea was that users needed a home base from which to navigate the web—and to this point, many portals were also search engines, such as AOL, Yahoo!, Lycos, and Excite. These were de facto gateways or front doors to the web, and many users made them their browser homepages. Some portals like Yahoo! brought together broad swaths of content: news, weather, entertainment, shopping, a little bit of everything. Others, like AudioNet, focused narrowly on content from a specific market or niche—these sites were known as vertical portals.

AudioNet may have had a limited life span from 1995 to 2002, yet the content aggregation model it helped pioneer has largely come to define the shape of media distribution and consumption online. Better known as Broadcast.com (the name the site adopted in 1998, three years after its 1995 founding in Dallas, Texas), AudioNet was a streaming radio, music, and (later) television vertical portal, self-described as "the leading aggregator and broadcaster of streaming media programming on the web."[13] AudioNet is a significant case study in the history of web media for a number of reasons, not least because it brought its CEO Mark Cuban to wealth and fame. During its initial public offering in July 1998, the "frenzy" over Broadcast.com stock raised the company's valuation by more than $1 billion, resulting in what still remains the most profitable opening-day gain of any company in Wall Street history.[14] Then, in March 1999, Broadcast.com was sold to internet giant Yahoo! in a stock-swap deal worth $5.7 billion, which made it one of the most expensive transactions of the dot-com era and Yahoo!'s highest-priced acquisition of all time. The site was discontinued in

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10 Alexander Galloway reminds us that it is a mistake to equate decentralization with a lack of control. The internet may be a decentralized system by design, yet the principle of control is nevertheless built into the technical protocols through which the network operates. See Galloway, *Protocol: How Control Exists after Decentralizations* (Cambridge, MA: MIT Press, 2004), 7–8.

11 Other media scholars, such as Amanda Lotz, have explored aggregation as a form of curation. See Lotz, *Portals: A Treatise on Internet-Distributed Television* (Ann Arbor: Michigan Publishing Services, 2017).

12 Andrea Petersen, "What Is a Portal—And Why Are There So Many of Them? Once Gateways to the Web, They Keep Expanding," *Wall Street Journal*, December 10, 1998, B8.

13 Broadcast.com, *US Securities and Exchange Commission Prospectus* (filed July 17, 1998), from SEC EDGAR Database, https://www.sec.gov/Archives/edgar/data/1061236/0000950134-98-006006.txt.

14 David Barboza, "Broadcast.com Soars in Opening Day Frenzy," *New York Times*, July 18, 1998, D1.

2002, and for many, Broadcast.com is today remembered as a cautionary tale, a prime example of the speculative economic boom-and-bust cycle now known as the dot-com bubble. Yet while all-in-one web portals like Yahoo! and MSN persist to this day, it is AudioNet/Broadcast.com's vertical portal that has proved most popular and culturally significant. For services organized around a particular type of media content, look no further than YouTube, which since its founding in 2005 has become virtually synonymous with user-generated online video content.

During the mid- to late 1990s, the Broadcast.com vertical portal was among the most trafficked websites in the United States even though the company produced almost no original content. Its business model consisted instead of redistributing existing radio content for online audiences.[15] At its peak in 1999, the site featured content from more than four hundred radio stations and fifty television stations, plus game broadcasts for more than 450 college and professional sports teams. It also provided coverage of a wide range of other events, including political speeches, business conferences, and concerts.[16] In addition to its live simulcasts and webcasts, Broadcast.com offered more than sixty-five thousand hours of on-demand content with hundreds of audiobooks and nearly twenty-five hundred full-length music albums in its "CD Jukebox."[17] And all of this media content was available to audiences free of charge. Any broadcaster or other media creator could potentially establish their own website and online stream by the late 1990s, yet Broadcast.com lured in many such content providers, often acquiring streaming rights at little to no cost. Among the reasons that content providers preferred to partner with an aggregator like Broadcast.com was the industry discourse about how people accessed the internet and how businesses could best take advantage of the web. With few proven advertising models in the early years of the web, the industry mostly adopted a crude version of the network-era television ad model and tried to attract the largest audience possible. Thus, advertisers sought sites with high traffic, and in particular, sites that were "sticky" and held web surfers' attention for long amounts of time.[18] As Henry Jenkins, Sam Ford, and Joshua Green describe, the "stickiness" online business model "refers to centralizing the audience's presence in a particular online location to generate advertising revenue or sales," which is achieved by "placing material in an easily measured location and assessing how many people view it, how many times it is viewed, and how long visitors view it."[19] This notion of stickiness valued websites that functioned the most like older mass media that maintained attention by their monopoly.

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15 AudioNet also distributed some streams from live events, plus music, audiobooks, and eventually TV and video content.

16 Yahoo! Inc., Form 8-K (filed July 10, 1999), from SEC EDGAR Database, http://www.sec.gov/Archives/edgar/containers/fix043/1011006/000104746999028059/0001047469-99-028059-index.htm.

17 Broadcast.com, Form 10-K/A—1998 Annual Report (filed April 27, 1999), from SEC EDGAR Database, http://www.sec.gov/Archives/edgar/data/1061236/0000950134-99-003284.txt.

18 George Anders, "The Race for 'Sticky' Web Sites—Behind the Deal Frenzy, a Quest to Hang On to Restless Clickers," *Wall Street Journal*, February 11, 1999, B1.

19 Henry Jenkins, Sam Ford, and Joshua Green, *Spreadable Media: Creating Value and Meaning in a Networked Culture* (New York: New York University Press, 2013), 4.

The connection between online content aggregation and mass media, especially cable television, was not lost on Broadcast.com's founders, Mark Cuban and Todd Wagner. They frequently compared their vertical portal to a cable service provider. Wagner once proclaimed: "We're just cable on steroids. We're the next step. We're 50,000 channels."[20] In other words, Broadcast.com was not seeking to radically redefine media content or distribution for the internet. The vertical portal may have been a new type of media company for the internet era, yet it was modeled explicitly on broadcasting precedents and imposed those mass media logics on the internet media ecosystem.

The language of web portals may have faded after the early 2000s, yet the portal model and the logic of aggregation remain central within digital media industries and the contemporary online environment. Today we are inclined to call them platforms. Nick Srnicek defines platforms as digital infrastructures that mediate among different groups of users: customers, advertisers, service providers, producers, and suppliers. They are monopolistic firms that provide both the hardware and the software upon which social and economic activity occurs, thereby extracting and controlling immense amounts of data and content.[21] The reach of modern platforms, and particularly the degree to which they are able to extract data, certainly exceeds the portals of fifteen to twenty years ago. Nevertheless, at their core, services like YouTube, Netflix, and Spotify are all content distributors that operate under basically the same intermediation principle of pulling together a vast array of content at a single site from which individuals can then sort and filter the programming according to their particular needs—increasingly, algorithms will presort the content for them on the basis of established preferences. These aggregators have replaced human-organized directories as the internet's new intermediaries. The internet has, in many ways, succeeded in opening up the long tail of media content, bringing increased attention—if not economic viability—to so-called niche media makers and cultural products. This increased value is the product of new audiences and markets that have opened up through the internet. However, while the mass media production, distribution, and exhibition structures of the twentieth century have been significantly disrupted, it is erroneous to conclude that this is a form of disintermediation wherein producers and audiences are directly exchanging content without an intermediary in the supply chain.[22] This disintermediation may occasionally be the case with truly underground filmmakers or indie musicians, as it was in the preinternet era. However, for media content to scale up and reach a mainstream audience, it must still be streamed or sold through an aggregator like Amazon, iTunes, YouTube, Hulu, Netflix, or Spotify.

These new intermediaries and their affiliates maintain as much or even more control over online media distribution and retail than did the broadcast networks or movie theater chains in their respective heydays.[23] Especially in streaming media, the business

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20 Quoted in Alan Goldstein, "CEO of Dallas-Based Broadcast.com Reflects on Future after IPO," *Dallas Morning News*, August 31, 1998.

21 Nick Srnicek, *Platform Capitalism* (Malden, MA: Polity, 2017), 43–48.

22 Patrick Vonderau, "The Politics of Content Aggregation," *Television & New Media* 16, no. 8 (2015): 720.

23 There are a variety of affiliates involved in the digital media distribution process. One such group are "white label" agent aggregators that bundle content catalogs and negotiate licensing deals and access to branded aggregation platforms like Netflix.

model requires such massive scale for profitability that most industries today can support only a few major aggregators in any given region of the world. For instance, if you are a musician in the United States in 2019 and you want your music to potentially reach a mainstream audience, you have little choice but to work with the aggregators Spotify, Apple Music and iTunes, YouTube and Google Play Music, and Amazon. However, the low royalties paid by streaming music services mean that many artists actually operate at a loss in order to make their songs available through these services.[24] In the radio and podcasting industries, there are no royalties or licensing fees whatsoever; broadcasters and podcasters give away their content free of charge to aggregators like TuneIn, iHeartRadio, Stitcher, and iTunes Podcasts. To turn a profit, producers must grow their audience enough to attract advertising. When advertising is not feasible, as in the case of noncommercial or local radio and podcasting, content producers may still give their programming away for free because they fear they will otherwise lose out on listeners who use only aggregators. There certainly are musicians, radio broadcasters, and podcasters who do not wish to accept the aggregators' contract terms, but their exclusion from these platforms risks rendering them invisible. In this way, content aggregation may actually negatively influence diversity, because the more audiences depend on these platforms as their primary means of consumption, the less likely they are to explore the (unseen and unheard) options that exist beyond the platforms' boundaries. Wendy Hui Kyong Chun has argued that algorithmic recommendation systems are based on assumptions of homophily (the principle that like breeds like), which discourage individuals from stepping outside their comfort zone.[25] In this way, the internet continues to operate as both a vast realm of unrestricted communication and free exchange and a highly consolidated and controlled marketplace.

The internet, and the phenomenon of content aggregation, obscures media content as much as it calls attention to it. There is often a false sense of completeness presented by content aggregators like Spotify or YouTube that offer millions of songs or videos. These platforms offer more media than any one person could consume in a lifetime, and yet they are far from offering all the media that exists, past or present. There are numerous reasons media content may be exempted from an aggregator, many of which come down to economic matters, such as licensing disputes or orphaned content situations, which occurs when no one can find the individuals with the right to license the material. It may be absent because it has been censored for running afoul of a site's "community guidelines." There are also significant cultural biases involved. For instance, access to aggregators like Spotify or YouTube is not globally universal, nor is the content available identical in all regions of the world. Their catalogs differ by region for licensing reasons and also for cultural reasons. Perhaps unsurprisingly, in the United States there is a predilection for American-centric media content, and

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24 Patryk Galuszka, "Music Aggregators and Intermediation of the Digital Music Market," *International Journal of Communication* 9, no. 1 (2015): 268.

25 Wendy Hui Kyong Chun, *Updating to Remain the Same: Habitual New Media* (Cambridge, MA: MIT Press, 2016), 15.

foreign content is often excluded outright.[26] Language is turned into a significant sorting mechanism, as content aggregation platforms in English-speaking countries limit the access and discovery of non-English-language content.

Since the earliest days of the internet and, especially, the World Wide Web, aggregation has played a significant role in ideas about media distribution, access, and consumption in our networked culture. Socially and politically, these ideas about massive collections of heterogeneous media content are central to optimistic claims about the medium's democratizing effects and the internet's ability to increase democratic choice and participation. Yet the consolidation of content through aggregators raises concerns about concentrated power and control.

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26 If not excluded outright, foreign content is minimized via algorithms that push users toward trending content, or it may be relegated to inferior-quality streams, and so on.

Why It Matters that Black Men and Queer Women Invented Digital Remix Culture

by Abigail De Kosnik

Black men and queer women invented digital remix culture. In the mid- to late 1980s, Black men developed and popularized digital sampling, a technique of extracting segments from existing recordings and using them to form the musical tracks of hip-hop songs. In the 1990s, queer women founded and populated the first wave of online fan-fiction communities. While many non-Black and nonmale people have made significant contributions to sampling, and nonqueer and nonfemale people have participated heavily in fan production, digital sampling and fan fiction gave rise to the remix culture that has proliferated and thrived on the internet primarily through the creative labor of minority musical and fiction artists.

The first digital sampler was invented in 1969,[1] but sampling as a production technique began to reach mass audiences in the second half of the 1980s, when groups such as Public Enemy, Eric B. & Rakim, Boogie Down Productions, N.W.A., the Beastie Boys, De La Soul, and

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1 David McNamee, "Hey, What's That Sound: Sampler," *The Guardian*, September 28, 2009, https://www.theguardian.com/music/2009/sep/28/whats-that-sound-sampler.

Run-D.M.C. incorporated as many as "20 or 30 clips in each song,"[2] with some clips lasting only a few seconds.[3] Over the melodies and rhythms constructed from these samples, rappers laid down their rhymes. Sampling introduced the acts of copying, cutting, and mixing to everyday culture, simply by being employed so heavily in the first wave of rap and hip-hop music. The sound of hip-hop consists of sampling plus rapping, and although many cultural critics and fans initially concentrated their attention on the mechanics and impact of MCs rhyming over beats, it was the beats—made of digitally copied and edited samples—that taught millions of people to accept that new, original media texts could result from older texts being chopped up into bits and the bits combined in unexpected ways. Because hip-hop as a genre helped define the cultural zeitgeist of the late 1980s, Black male artists' sampling innovations wove digital remix into popular aesthetic experience. By the time the World Wide Web launched in 1991, hip-hop had already proved that making and sharing remixes were among the most exciting and rich artistic practices that digital media could facilitate. Both official and fan producers issued a plethora of mixes, versions, and edits of films, television series, music recordings, video games, and other media forms that circulated online starting in 1991, but this cycle began with the technological advancements and marketplace triumphs of early hip-hop groups. Margie Borschke argues that "remix" is a term that scholars and journalists took up from the music world and applied very broadly to all digital transformations; she warns that "remix is neither new nor [exclusively] digital."[4] Following this line of thinking, I assert that sampling can be viewed as the bridge between the audio remix styles that predated the internet and remix as it is widely understood today—that is, as a term that describes a wide range of cultural genres made with "cut/copy/paste technologies" and shared online.[5] Remix culture was not born on the internet and is not restricted to the internet, but remix culture does thrive on the internet, and it does so largely because sampling-based music enjoyed enormous popularity just before the internet became a publicly available resource.

Fan fiction's influence on contemporary digital remix culture may be more disputed, because fan fiction is still widely perceived as subcultural. However, fan fiction should be understood as a mass media format, not a marginal one, given that every month thousands of writers publish tens of thousands of new stories on fanfic sites, where millions of people read and comment on them.[6] Fan fiction texts such as E. L. James's *Fifty Shades* (based on Stephenie Meyer's *Twilight* novels and Summit Entertainment's blockbuster *Twilight* movie series) and Cassandra Clare's *Mortal Instruments* (based on the *Harry Potter* books by J. K. Rowling and films by Warner Bros.) have been

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2 Chuck D, quoted in Kembrew McLeod, "An Oral History of Sampling: From Turntables to Mashups," in *The Routledge Companion to Remix Studies*, ed. Eduardo Navas, Owen Gallagher, and xtine burrough (New York: Routledge, 2015), 91.

3 McNamee, "Hey, What's That Sound."

4 Margie Borschke, *This Is Not a Remix: Piracy, Authenticity and Popular Music* (New York: Bloomsbury, 2017), 64.

5 Borschke, 48.

6 See Abigail De Kosnik, *Rogue Archives: Digital Cultural Memory and Media Fandom* (Cambridge, MA: MIT Press, 2016), 315–347.

issued as best-selling novels and adapted as films and television series. The popularity of these texts suggests that fanfic's trending toward mainstream will probably continue.

Although fan fiction began as a printed genre, appearing in fanzines beginning in the 1960s, fan fiction communities started early and strong on the web. Their early embrace of online publishing provided the basis for fan fiction's subsequent influence on digital remix culture. As far as I can determine, the first online group dedicated exclusively to creative fan works was ATXC, or alt.tv.xfiles.creative, which launched on Usenet in 1994.[7] The volume of these communities' output, their defiance of copyright protection maneuvers on the part of authors and media corporations, and the vast number of readers they attracted set the precedent for fan works to become a prominent, robust genre of online user-generated content. The first wave of online fan fiction communities demonstrated the internet's utility and value as a network where appropriative creativity could thrive.

Media scholars should collectively recognize the history of digital remix culture to credit groups that are often stereotyped as lacking technological proficiency for their profound impact on digital culture. Black people, queer people, and women have never been assumed to be collectively technologically gifted; their cultures have never been considered STEM-inclined cultures, so anyone from these groups who becomes prominent in a scientific or technological field seems to stand out as an exception.[8] Note the recent lionization of computer science pioneers Ada Lovelace, Alan Turing, and Katherine Johnson in graphic novels, fiction and nonfiction books, and award-winning films.[9] By putting Black, queer, and female communities at the beginning of the history of digital remix, media scholarship can contribute to a shift in the perception of these groups' relationships to new media. Such a shift has already begun thanks to feminist scholars such as Marie Hicks and Janet Abbate,[10] who have noted the importance of women programmers to the early history of computing. African American scholars Tricia Rose, Alexander G. Weheliye, and Katherine McKittrick have likewise argued for greater recognition of Black music innovators as technological pioneers, and Afro-futurist writers and filmmakers such as Kodwo Eshun and John Akomfrah similarly document and describe the futuristic, avant-garde, technological experiments by Black sonic artists between the 1960s and 1990s.[11] Notably, Eshun's

7   De Kosnik, 193–220.

8   *The Imitation Game* (Morten Tyldum, 2014); *Hidden Figures* (Theodore Melfi, 2016).

9   Sydney Padua, *The Thrilling Adventures of Lovelace and Babbage* (New York: Pantheon, 2015); Jenniver Chiaverini, *Enchantress of Numbers: A Novel of Ada Lovelace* (New York: Dutton, 2018); and Margot Lee Shetterly, *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race* (New York: HarperCollins, 2016).

10 Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (Cambridge, MA: MIT Press, 2017); and Janet Abbate, *Recoding Gender: Women's Changing Participation in Computing* (Cambridge, MA: MIT Press, 2017).

11 Tricia Rose, *Black Noise: Rap Music and Black Culture in Contemporary America* (Middletown, CT: Wesleyan University Press, 1994); Alexander G. Weheliye, *Phonographies: Grooves in Sonic Afro-Modernity* (Durham, NC: Duke University Press, 2005); Katherine McKittrick and Alexander G. Weheliye, "808s & Heartbreak," *Propter Nos* 2, no. 1 (Fall 2017): 13–42, https://trueleappress.com/2017/10/12/808s-heartbreak; Kodwo Eshun, *More Brilliant Than the Sun: Adventures in Sonic Fiction* (London: Quartet Books, 1998); and *The Last Angel of History* (John Akomfrah, 1996).

and Akomfrah's concern is with Black tech prowess as historical fact, which, they acknowledge, may strike many non-Black people as science fiction.

The digital inventions of Black male music producers and by queer women fans look different from the digital inventions of white male engineers and programmers, which has given rise to the misperception that the vast majority of technological geniuses have been white men and that other categories of makers have not had a significant influence on digital culture. Sampling and transformative fan works did not form the bases of giant tech corporations like Microsoft, Apple, Amazon, Google, and Facebook, whose hardware and software are emblems of the digital age. But sampling and fan works are styles of digital production and of technological use; they gave rise to ways of being digital, ways of demonstrating comprehension and skill with computing technology to a community. Perhaps most importantly, they launched a set of digital aesthetics that proved enormously popular, attracting millions of users. Sampling and fan production showed that cultural works that foreground the digital affordances of copying and pasting, cutting and mixing, and appropriating and versioning can be engaging, compelling, and enthralling. The hundreds of millions of people today who consume extended mixes, mash-ups, and fan edits online reap the rewards of the digital breakthroughs of the 1980s and 1990s by minority creative workers, regardless of the genre or source material involved.

Another reason that it matters that we collectively recognize Black men and queer women as the pioneers of remix is to gain a more thorough understanding of the large role of race and gender in the obstacles that remix encountered as it came into being. From the vantage point of the mid-1980s, it was not a given that digital remix would achieve widespread popularity; in fact, many forces conspired against it.

While sampling artists crafted the complex sounds of 1980s and early 1990s hip-hop, numerous copyright holders whose recordings were sampled without their consent filed lawsuits against the appropriators.[12] One such case, *Grand Upright Music Ltd. v. Warner Bros. Records Inc.*, decided by the US District Court for the Southern District of New York in 1991, effectively rendered illegal the production style of collaging together dozens of samples on a recorded single, or hundreds of samples on an album, without paying exorbitant licensing fees. Consequently, all hip-hop acts recording under the aegis of a major record label now limit their sampling to one or two instances per track to keep production costs manageable.[13]

In the years leading up to the *Grand Upright* ruling, sampling and hip-hop were frequently linked with American inner cities' crack epidemic and gang warfare. In press reports, political speeches, and popular media, Black men were depicted as authors of a nexus of social plagues that consisted of uncontrollable, unstoppable replication and spread. Crack addiction and gang violence were thought to be copied and pasted from parent to child, neighbor to neighbor, and teen to teen in poor urban neighborhoods and, even more frighteningly, from majority-Black city neighborhoods to

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12 Kembrew McLeod and Peter DiCola, *Creative License: The Law and Culture of Digital Sampling* (Durham, NC: Duke University Press, 2011), 128–147.

13 McLeod, "Oral History of Sampling," 90–92.

majority-white suburbs.[14] Sampling was a process of copying and pasting par excellence, and the courts deemed it a crime and moved to contain it amid a wave of fearmongering that Black American crime was looping at an alarming speed and threatening to infect white America.

If digital sampling had not reached a mass audience at the same historical moment that public debates raged about the seemingly endless reproducibility of Black criminality, and if sampling had not provided the scores for rap lyrics that foregrounded Black masculinity and defiantly challenged the entrenched power of white masculinity, would sonic digital remix practices have been deemed illegal? If another genre of music, a white-dominated genre rather than hip-hop, had popularized digital remix first, would the courts or Congress have allowed artists to develop it in a more organic way, without the chilling burden of having to negotiate exorbitant licensing fees with copyright holders? Would a statutory royalty system have been mandated, one that required the recording industry to set reasonable, standardized licensing fees for sampling? Would the thousands of remix artists who cannot sign with major record labels, and who post their videos to YouTube and social media sites, knowing that they might receive a takedown notice at any time, have been able to practice and share their productions more freely?

From the mid-1980s until the 1991 *Grand Upright* decision, hip-hop artists heavily debated the "ethics" of sampling among themselves, asking whether live instrumentation is superior to machinic borrowing from records.[15] They also asked whether de minimis sampling—when a sample is so brief or altered to such a degree that its origins are "entirely unrecognizable to the average audience"[16]—should not be considered copyright infringement and whether a hip-hop artist can sample from an earlier hip-hop recording (i.e., sample a sample) or should have to "dig" for his or her own sound sources.[17] How hip-hop makers may have collectively resolved these and other issues we cannot know, because remix music was rapidly subjected to severe legal restrictions because of the race, class, and gender of most of its inventors and producers.[18]

The limitations imposed on internet fan fiction can similarly be attributed to the sexuality and gender of the people who originated the earliest fanfic message boards, discussion groups, archives, and blogs. However, online fanfic was mainly restricted not by external forces, as digital sampling was, but by its own members. In the early years of online fan communities, there were many examples of fans placing boundaries on the types of fiction that fellow fans could post. During the first ten years of internet fan fiction, it was fairly common for fanfic discussion groups, message boards,

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14 Clarence Lusane, *Pipe Dream Blues: Racism and the War on Drugs* (Boston: South End Press, 1991).

15 Joseph G. Schloss, *Making Beats: The Art of Sample-Based Hip-Hop* (Middletown, CT: Wesleyan University Press, 2014), 63–78.

16 Christopher J. Norton, "Little Bits Can't Be Wrong: The De Minimis Doctrine in the Context of Sampling Copyright-Protected Sound Recordings in New Music," *Berkeley Journal of Entertainment and Sports Law* 7, no. 1 (2018): 15, https://doi.org/10.15779/Z38N00ZT4S.

17 Schloss, *Making Beats*, 101–134.

18 Hip-hop creators have continued to formulate and discuss the ethics of sampling-based production after 1991, but because of the legal constraints that the *Grand Upright* ruling imposed on sampling, these conversations pertain primarily to underground recordings that can never be officially sold or distributed by a major label.

and archives to heavily debate or outright ban "real-person fiction" (i.e., about celebrities rather than characters, also known as RPF) and stories containing detailed descriptions of sex acts.[19] It was not unusual for fan communities to generate splinter groups specializing in "erotic," "mature," or "NC-17" fic to keep sexual content hidden from fans who wished never to encounter it. It also became standard for authors to place "headers" at the top of their fic posts that included ratings and warnings for sexual themes.

The criticisms and judgments of explicit content expressed by early fan fiction readers in internet communities were informed by the culture wars, particularly the "porn wars," which took place between the late 1970s and early 1990s. During that period, Andrea Dworkin, Catharine McKinnon, and other feminist scholars launched a movement to ban pornography on the grounds that the porn magazine and video industries were structurally harmful to women—not only the women who performed for cameras but also all women, because, they argued, all women had to suffer the misogynistic attitudes and behaviors that porn exacerbated and encouraged. "The feminist objection to pornography is based on our belief that pornography represents hatred of women, that pornography's intent is to humiliate, degrade and dehumanize the female body for the purpose of erotic stimulation and pleasure," wrote journalist Susan Brownmiller in 1979.[20] This second-wave feminist stance against graphic representations of sex was one of the inspirations for third-wave feminism's sex-positive rhetoric, and at least as many scholars and cultural critics defended pornography as attacked it. To be sure, arguments against depictions of sex acts in cultural productions pervaded public discourse for much of the twentieth century, but it is important to note that such arguments circulated prominently in academic scholarship, newspapers, television news programs, and talk shows in the two decades immediately preceding the invention of the web. Right before mass internet culture was born, an equivalence was drawn between being a well-informed, politically aware, and antisexist American woman and being opposed to encountering graphic or explicit sexual representations in cultural texts.

Since the 1990s, debates about online and digital pornography and other depictions of sex have only multiplied and now include not just fan fiction but also amateur porn, so-called porn addiction, sexting, and cam girls. These debates all emerged from the porn wars and arguments that raged in the predigital era of print and video and often around explicit fan fiction, a form of pornography that was primarily female authored. Even though fan fiction is a textual genre, not a visual one, the questions that fan communities asked about how to structure its publication anticipated later questions about appropriate and inappropriate audiences for and participants in internet sex culture. Fans asked which users were too young to read "mature" fanfic, a query that later resurfaced in the debate about whether sexting by minors should be prohibited or punishable by parents or school authorities. Fans also considered bans on explicit RPF, an issue that would be revived later as the question of whether online porn-friendly communities and platforms should ban "deepfake"

19   Fanlore, "alt.tv.x-files.creative/Conflicts, Wank, and Discussion," https://fanlore.org/wiki/Alt.tv.x-files.creative.

20   Susan Brownmiller, "Let's Put Pornography Back in the Closet," *Newsday,* 1979, http://www.susanbrownmiller .com/susanbrownmiller/html/antiporno.html.

porn videos. They deliberated about whether explicit fanfic should be hidden from a broad fan community and how difficult should it be to access for the "average" fan. Recently, similar considerations manifested in a controversial decision by fan-and-remix culture online hub Tumblr to ban "adult content, including explicit sexual content and nudity," a move that the Tumblr staff promoted as conducive to "a better, more positive Tumblr" but was widely decried by the platform's "predominantly queer and feminist user base."[21] In response, *Vox* reporter Aja Romano argued that the "erotic and NSFW [not safe for work] imagery" published on Tumblr serves diverse purposes for these groups, consisting of "everything from fanart to sex education," and "is a vibrant and much-valued part of the community."[22] Queer porn performer Kitty Stryker told *Motherboard* that Tumblr was "the one place we could find porn that represents us . . . outside of an often racist, transmisogynist, fatphobic industry," and that she expects that the Tumblr ban will "disproportionately affect users who are not white, cis, able bodied, slender, and feminine. It's a huge loss from an identity affirming perspective, from an educational perspective, from a feminist erotica perspective."[23] What Tumblr framed as a move "to keep the community as safe as possible" was tantamount to the closure of what had been, for eleven years, a relatively safe space for the circulation of sexually themed information and art among queer and female users.[24]

It is likely that Tumblr banned adult content to curry favor with Apple; a few weeks before the ban, Apple dropped Tumblr from its App Store on the grounds that child pornography was allegedly published and circulated on the site.[25] But the rhetoric that the company used to justify the policy shift, referring to the need to keep its "community" "safe" and "positive," echoes the rhetoric of the antipornography movement that preceded and informed the rise of the public internet. The calls for censorship made on early online fanfic communities and Tumblr's decision to prohibit whatever it deems pornographic both hew to a narrow definition of what representations of sex are appropriate for public view, a definition that relegates many textual and visual representations of sex—including a great deal of queer sex, kinky sex, and sex centered on female rather than male pleasure—to the realm of the inappropriate. Women and marginalized groups have only occasionally been able to carve out corners of public space where they can freely share self-authored cultural productions about their sexualities. Fan fiction websites and Tumblr have served as two such public arenas; both

21   Tumblr Staff, "A Better, More Positive Tumblr," December 3, 2018, https://staff.tumblr.com/post /180758987165/a-better-more-positive-tumblr; and Aja Romano, "Tumblr Is Banning Adult Content: It's about So Much More Than Porn," *Vox*, December 17, 2018, https://www.vox.com/2018/12/4/18124120 /tumblr-porn-adult-content-ban-user-backlash.

22   Romano.

23   Jason Koebler and Samantha Cole, "Apple Sucked Tumblr into Its Walled Garden, Where Sex Is Bad," *Vice*, December 3, 2018, https://motherboard.vice.com/en_us/article/a3mjxg/apple-tumblr-porn-nsfw-adult-content-banned.

24   Tumblr Staff, "Better, More Positive Tumblr."

25   Eli Rosenberg, "Tumblr's Nudity Ban Removes One of the Last Major Refuges for Pornography on Social Media," *Washington Post*, December 3, 2018, https://www.washingtonpost.com/business/2018/12/04/tumblrs -nudity-crackdown-means-pornography-will-be-harder-find-its-platform-than-nazi-propaganda/?utm_term =.a1723fb7829d.

have been subjected to repeated cries for censorship, and one essentially evicted the sex cultures that, for a time, made a home there.

Recognizing that digital remix culture originated in communities that were majority Black male and queer female enables us to better perceive how discourses about race, class, gender, and sexuality have shaped the internet from its beginnings. The global digital network has always been enmeshed in problems pertaining to bodies and to how and what those bodies should be allowed to produce and reproduce.   ✳

The Internet Suggests: Film, Recommender Systems, and Cultural Mediation

by Mattias Frey

Has there ever been a medium as hyped or hated as the internet? Of course, historians have shown that every new communications system, whether the telegraph, telephone, cinema, radio, broadcast television, or cable television, has inspired magical thinking and anxious moral panics about its supposed influence on users' lives and the body politic.[1] But none of these prior innovations enjoyed the internet's do-it-yourself generation-and-dissemination dynamics to promote and revile itself, at least since the late 1990s, when cyberspace (remember that?) expanded widely outside military installations and universities. That I and many of this journal's readers were intellectually and politically conscious at its birth hour only intensifies the visceral impact of the shrill voices of utopia and apocalypse that have competed, seemingly unabated, for attention ever since.

In crucial ways, these hopes, dreams, anxieties, and nightmares have been more interesting to me than the forms and functionality of the technology itself. The internet has reinvigorated deep-seated beliefs about how society should be organized and who should lead or control its opinion-leading communications apparatus. Inevitably, commentators projected their own fantasies and paranoias onto this new thing. Acafans predicted the mainstreaming of cult tastes and

1 Vincent Mosco, *The Digital Sublime: Myth, Power, and Cyberspace* (Cambridge, MA: MIT Press, 2004).

surmised that media executives would henceforth pay them heed.[2] Entrepreneurs, as Andrew J. Bottomley's contribution to this In Focus indicates, envisioned tapping into vast new aggregations of value—that is, making money—by linking niche items with niche markets.[3] Foucauldians and Deleuzians feared yet further losses of privacy and more insidious forms of surveillance and top-down control.[4] Some celebrated a new era of active grassroots democracy and declared a definitive end to gatekeeping and cultural hierarchies; others complained about passive, dumbed-down consumers and humanity losing its monopoly on determining cultural value.[5]

In my home field of cinema studies—the little "c" that for worse, or more probably for better, has been melting into a big "M" of SCMS—similar aspirations abounded. The approaches were many. There have been deliberations over online videos and streaming aesthetics and no shortage of contemplations about the move from cinema to internet-based domestic spectatorship, even if viewing films at home had been the norm for a long time before streaming.[6] Cinephiles harbored hopes that streaming media platforms would deliver new access to all manner of titles and erase distribution windows.[7] They also despaired over geoblocking, shrinking catalogs, and missing credit sequences and DVD extras, not to mention having to subscribe to multiple platforms to re-create the selection of the old local video store.[8]

Of course, I am not immune to projection. My own long-standing concerns surrounding film criticism caused me to question how the internet and the computational processing capabilities abetted by or developed in concert with it have intervened into the presentation, selection, and above all recommendation of films and other moving-image media objects. Critics had spent much of the later 2000s and 2010s in existential crisis, propelled by leisure consumers' rising use of the internet and plummeting purchases of print newspapers and magazines.[9] Faced with their own obsolescence, critics perceived Rotten Tomatoes, Twitter, and other online communities as devaluing the individual, authoritative critic's taste-making powers. These challenges, as

2   See, e.g., Henry Jenkins, *Convergence Culture: Where Old and New Media Collide*, rev. ed. (New York: New York University Press, 2006).

3   See, e.g., Chris Anderson, *The Longer Long Tail: How Endless Choice Is Creating Unlimited Demand*, rev. ed. (London: Random House, 2009).

4   See, e.g., John Cheney-Lippold, *We Are Data: Algorithms and the Making of Our Digital Selves* (New York: New York University Press, 2017).

5   See, e.g., Andrew Keen, *The Cult of the Amateur: How Today's Internet Is Killing Our Culture and Assaulting Our Economy* (London: Nicholas Brealey, 2007); Michael Gubbins, "Digital Revolution: Active Audiences and Fragmented Consumption," in *Digital Disruption: Cinema Moves On-Line*, ed. Dina Iordanova and Stuart Cunningham (St. Andrews, Scotland: St. Andrews Film Studies, 2012), 67–100; and Ted Striphas, "Algorithmic Culture," *European Journal of Cultural Studies* 18, nos. 4–5 (2015): 395–412.

6   See, e.g., Stephen Groening, ed., "The Aesthetics of Online Videos," special issue, *Film Criticism* 40, no. 2 (2016); and Chuck Tryon, *On-Demand Culture: Digital Delivery and the Future of Movies* (New Brunswick, NJ: Rutgers University Press, 2013).

7   See, e.g., A. O. Scott, "The Shape of Cinema, Transformed at the Click of a Mouse," *New York Times*, March 18, 2007, http://www.nytimes.com/2007/03/18/movies/18scot.html; Gubbins, "Digital Revolution," 67–100.

8   See, e.g., Tryon, *On-Demand Culture*.

9   For more on this crisis, see Mattias Frey, *The Permanent Crisis of Film Criticism: The Anxiety of Authority* (Amsterdam: Amsterdam University Press, 2015); and Frey, "Critical Questions," in *Film Criticism in the Digital Age*, ed. Mattias Frey and Cecilia Sayad (New Brunswick, NJ: Rutgers University Press, 2015), 1–20.

earnestly as initially received, now pale in comparison to the specter of algorithmic recommender systems, such as those deployed by Netflix and Amazon Prime Video. Suddenly, reviews and other traditional pathways of cultural suggestion and evaluation are being rerouted, if not bypassed altogether, as recommendation is integrated into the consumption interface itself.

To be sure, Netflix, YouTube, and other internet streaming services' algorithmic recommendations constitute the culmination of a consumerist fantasy: personalization. For many commentators, these systems—which suggest content likely to interest viewers on the basis of their prior viewing histories—represent a fundamentally new way of connecting cultural objects and human beings. Computer scientists and business gurus swoon over the ability to scale the provision of cultural recommendation using big data, which they call "collective intelligence" and "wisdom of crowds."[10] One market researcher has calculated the Netflix home screen to be the most powerful promotional tool in entertainment.[11] Feature writers for the *Atlantic*, *New Yorker*, and other middlebrow publications attest to the Netflix recommendation engine's superhuman qualities, its "alien" recognition of taste. "Possibly," the *New York Times* ventured, "the algorithms are finding connections" between content and users that are "so deep and subconscious that customers themselves wouldn't even recognize them."[12] Naturally, internal assessments and publicity are rosy. Netflix engineers rate the system to be worth $1 billion per annum in retained subscriptions and reduced marketing costs; chief content officer Ted Sarandos floated the (mythical) story that the company's big-data diagnosis of taste is so powerful that series such as *House of Cards* (2013–2018) were "generated by algorithm."[13]

In contrast, academics and activists sustain suspicions of filter bubbles, public sphericules, and disastrous effects on media diversity. They object to how such algorithms seem bound to confirm rather than challenge or develop taste, conjuring up nightmares of *Brave New World*–style surveillance and bread-and-circus wish fulfilment, bemoaning the opacity of the technology and the murky corporations that control it. Such revisionists and contrarians have raised myriad dangers that include the datafication of identity and the mathematicization of taste leading to a wholesale redefinition of culture. For these passionate interlocutors, algorithmic recommendation represents the end of humanist criticism as we have known it, the death knell of the Arnoldian "best which has been thought and said." For them, SVOD (subscription video on demand) viewership—after all, the fastest-growing mode of film and series consumption—threatens to propagate a breed of atomized sofa sloths, unable or unwilling to

10   See, e.g., James Surowiecki, *The Wisdom of Crowds: Why the Many Are Smarter Than the Few* (London: Abacus, 2005).

11   Digital-media market analyst Matthew Bell, cited in "The Television Will Be Revolutionised," *The Economist*, June 30, 2018, 19.

12   Clive Thompson, "If You Liked This, You're Sure to Love That," *New York Times*, November 21, 2008, https://www.nytimes.com/2008/11/23/magazine/23Netflix-t.html.

13   Carlos A. Gomez-Uribe and Neil Hunt, "The Netflix Recommender System: Algorithms, Business Value, and Innovation," *ACM Transactions on Management Information Systems* 6, no. 4 (2015): 1–19; Jane Martinson, "Netflix's Ted Sarandos: 'We Like Giving Great Storytellers Big Canvases,'" *The Guardian*, March 15, 2015, https://www.theguardian.com/media/2015/mar/15/netflix-ted-sarandos-house-of-cards.

resist Netflix's advice that the next episode will begin in 5, 4, 3, 2, 1. The Pauline Kaels and Manny Farbers of the world are bound to be replaced entirely by AI critics, avatars for the economic imperatives of profit-seeking media conglomerates.[14]

Reviewing the overheated rhetoric surrounding recommender systems and related film-internet developments over the past twenty years thus reveals competing, and largely mutually exclusive, narratives. One heralds an unprecedented era of democratic access and choice. The other proposes a scenario straight out of *Clockwork Orange* (Stanley Kubrick, 1971): a color-by-numbers media-shoveling operation masked by clever marketing illusions. Curiously, however, both the vociferous champions and the vehement critics share a common first-principle assumption: that VOD (video on demand) recommender systems are effective, powerful, widely used, and unprecedented.

But what if we see such "novel" forms of recommendation not as sui generis but as continuations and transpositions of word-of-mouth tips, professional criticism, and industry advertising? We might better understand these developments by reminding ourselves of the insights of media archaeologists who look for continuities alongside uniqueness, for the old in the new and for the novel already in the old. There is a strong case, I submit, for contextualizing internet-based streaming recommenders within broader constellations of historical and contemporary cultural mediators. This entails scrutinizing not only their technological designs but also their real uses, functions, and outcomes in cultural consumers' everyday lives. Such an undertaking regards VOD, first, within a diachronic tradition of cinema and festival programs, TV listings, Moviefone, Leonard Maltin's *Movie Guide*, and video-clerk word of mouth. Second, it appraises Netflix and Amazon alongside a synchronic array of portals and platforms, including MUBI's or BFI Player's curation paradigms, which use viewership data and algorithms to greater—but also lesser—degrees, even while attending to similar choice-reducing purposes and user demands. What I am proposing here is a functional archaeology of cultural recommendation and media consumption choice.

This is no fanciful enterprise. After all, when computer scientists were dreaming up algorithmic recommenders for films and music in the mid-1990s, they explicitly referred to legacy forms and functions. Developers proposed collaborative filtering—that is, the algorithmic modeling and prediction of user tastes based on similar users' viewing histories—as a way to replicate the word of mouth from a video store clerk or a close friend. Other programmers designed techniques and code with the experience of a trusted critic in mind.[15] To be sure, commentators have broached the important

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14 See Blake Hallinan and Ted Striphas, "Recommended for You: The Netflix Prize and the Production of Algorithmic Culture," *New Media and Society* 18, no. 1 (2014): 117–137; Neta Alexander, "Catered to Your Future Self: Netflix's 'Predictive Personalization' and the Mathematization of Taste," in *The Netflix Effect: Technology and Entertainment in the 21st Century*, ed. Kevin McDonald and Daniel Smith-Rowsey (New York: Bloomsbury, 2016), 81–97; Eli Pariser, *The Filter Bubble: What the Internet Is Hiding from You* (London: Penguin, 2011); Cheney-Lippold, *We Are Data*; and Joseph Turow, *The Daily You: How the New Advertising Industry Is Defining Your Identity and Your Worth* (New Haven, CT: Yale University Press, 2011).

15 For historical origins, see Dietmar Jannach, Markus Jannach, Alexander Felfernig, and Gerhard Friedrich, *Recommender Systems: An Introduction* (Cambridge: Cambridge University Press, 2011), as well as the essays in Francesco Ricci, Lior Rokach, and Bracha Shapira, eds., *Recommender Systems Handbook*, 2nd rev. ed. (New York: Springer, 2015).

connection between online recommender systems and their historical antecedents.[16] But these journalistic and theoretical efforts require empirical scrutiny, elaboration, and refinement, not to mention an essential reorientation (or at least rebalance): from producers to users, and from technological designs to lived experiences.

The initial results of this ongoing research project bear out neither critics' wildest fears of nor promoters' most fervent hopes for algorithmic recommendation systems.[17] The study, which includes the quantitative analysis of two national surveys as well as the qualitative analysis of several dozen in-depth user interviews, suggests that the internet is inflecting, rather than revolutionizing, traditional applications of recommendation and enduring routines of media choice and taste. Among other corrections of conventional wisdom, findings indicate that most people neither trust nor appreciate (nor even purport to primarily use) the suggestions of VOD platforms. In representative surveys of UK and US adults that I commissioned in November 2018, substantial majorities said that, if forced to choose, they would be more likely to trust human critics (United Kingdom, 74 percent; United States, 64 percent) over computer algorithms (United Kingdom, 7 percent; United States, 12 percent) to provide a better film or series suggestion.[18] In finer-grained questions that allowed respondents to choose between a wide array of fifteen potential influences, 62 percent of respondents said they were most likely to let word of mouth from family, friends, or colleagues guide their preference, as opposed to critics (29 percent), advertising (24 percent), review aggregators like Rotten Tomatoes (13 percent), and VOD recommender systems (19 percent). When participants were asked specifically about watching films and series on VOD platforms (as opposed to cinema, television, DVD, and other channels of dissemination), word of mouth (51 percent) still far outpaced genre search (24 percent), trailers on the platform (24 percent), critics' reviews (19 percent), on-screen personalized recommendations (13 percent), and prominence on the VOD home screen (7 percent) as the source most likely to guide their choices.[19] Parsing the US results reveals that young people are more likely to use—and to trust—review aggregators like Rotten Tomatoes (age 18–34, 19 percent; 35–54, 16 percent; 55 and older, 9 percent) and slightly more receptive to the suggestions of recommender systems (18–34, 14–19 percent; 35–54, 11–12 percent; 55 and older: 9–13 percent). But they are exactly as likely as their older peers to say they consult human critics' reviews (18 percent for all age cohorts). Overall, then, empirical evidence suggests that internet-based recommendation technologies are not replacing legacy forms such as human-generated write-ups; rather, we are

16 See, e.g., Malcolm Gladwell, "The Science of the Sleeper," *New Yorker*, October 4, 1999, and essays in Kevin McDonald and Daniel Smith-Rowsey, eds., *The Netflix Effect: Technology and Entertainment in the 21st Century* (New York: Bloomsbury, 2016).

17 Mattias Frey, *Algorithm and Curation: Recommender Systems' Remediation of Film Culture* (forthcoming).

18 Surveys conducted by YouGov Plc and carried out online. Total sample sizes were 2,123 UK adults and 1,300 US adults. Fieldwork was undertaken between November 13 and November 14, 2018 (UK), and November 13 and November 15, 2018 (US). The figures have been weighted and are representative of all UK and US adults (age 18 and over), respectively. On this question, the remainder of respondents (United Kingdom, 19 percent; United States, 24 percent) answered "don't know."

19 The figures in these two sentences refer to the UK results. The US respondents rank the recommendation sources differently, but word of mouth similarly emerges far above critics, and critics are in turn deemed significantly more influential than recommender systems.

experiencing a steady diversification of influence types. Young media users are more prone to using several recommendation sources, both online and offline, when selecting films and series.

Despite the remarkable growth in streaming, in other words, the vast majority of film and series consumers do not use VOD recommender systems as their sole or even primary source for viewing suggestions. In general—even in the online digital age of aggregation and algorithms—most people still prefer other means, above all traditional word of mouth. To be sure, human-generated reviews remain a secondary reference point for most viewers, with heavy media users and cinephiles (a decided minority) being the notable exception. In fact, film criticism has never enjoyed the sort of influence and widespread use that some pundits imagine. The initial results of my project confirm seventy years' worth of audience studies from the fields of film and television, communications, economics, marketing, and social psychology. This body of research has consistently demonstrated that critics overestimate their own importance in terms of short-term taste making and box-office influence and underestimate their resilience in long-term canon building and other social functions.[20]

My findings do not dispute the complexity of Netflix's or Amazon's code and inputs; it is undoubtedly true, as one Netflix engineer boasts, that "there's a whole lot of Ph.D.-level math and statistics involved" in the company's online data collection and algorithmic processing.[21] And yet many of my study participants revealed in interviews that they rate the quality of VOD recommendation outcomes as very poor; a friend providing such tips would lose credibility quickly. Hitherto, algorithmic systems are no match for finely expressed, perceptive, human-generated criticism; with minimalist explanations like "86 percent" and "Because you watched . . . ," Netflix recommendations favorably compete only with broadcasted thumbs-up, thumbs-down puff pieces and summary-heavy capsule reviews. Both the cheerleaders and the fearmongers of the internet and big-data "revolution" conflate mathematical complexity with effectiveness; they confuse automation and scalability with useability and usefulness. From a user's perspective, sophistication of input is mere trivia; only nuance of recommendation constitutes true innovation.

Yes, internet-inspired kill-the-gatekeeper rhetoric and public antipathy toward experts may be increasingly widespread and socially acceptable. Democratized (and often virulent) expressions of taste proliferate in online forums. And yet my recent research suggests that the need for cultural mediation—whether in the form of Netflix and Amazon algorithms, MUBI and BFI Player curation, Rotten Tomato quotients, or traditional word of mouth—has only increased in direct relation to the digital-age content explosion. Just as ever in the history of cultural recommendation, some are

20 For an example of the long line of economics research demonstrating critics' insignificant effect on box-office performance, see David A. Reinstein and Christopher M. Snyder, "The Influence of Expert Reviews on Consumer Demand for Experience Goods: A Case Study of Movie Critics," *Journal of Industrial Economics* 53, no. 1 (2005): 27–51. Numerous audience studies, conducted from the 1950s until as recently as 2014, confirm that whereas heavy users tend to engage with criticism, infrequent film consumers rely instead on word of mouth and advertisements. One recent example: *A Profile of Current and Future Audiovisual Audience* (Luxembourg: Publications Office of the European Union, 2014).

21 Neil Hunt, quoted in Ken Auletta, "Outside the Box: Netflix and the Future of Television," *New Yorker*, February 3, 2014, https://www.newyorker.com/magazine/2014/02/03/outside-the-box-2.

willing to invest time and money engaging with complex recommendations and thorough explanations and justifications. Many more, however, remain satisfied (or quietly dissatisfied) with quick tips. In crucial ways, my assessment of VOD recommendation affirms an earlier historical study of critics' gripes about their always-impending obsolescence. Although critics have predicted their own endangerment or extinction in the face of every major introduction of a new medium or format—whether the specialist cinephile magazine, syndicated and televised film criticism, or internet blogs and social media—in fact they have lived to see another day.[22]

Fifty years after its local introduction, the internet enjoys wildly different technological infrastructures and affordances, networks and communities, business applications and selling propositions, social codes and status, and cultural resonances and relevance than even the most prophetic futurists and tech gurus of the time imagined. There is no doubt that, in another fifty years, our more recent enthusiasm for and concerns about Amazon and Netflix may seem misplaced, quaint, or naïve. The FAANGs and BATs of the world may well be long forgotten, replaced by other acronyms and brands, and other forms of aggregation and curation, sampling and mixing, connection and control. My project on online cultural mediation and taste suggests in miniature, however, that the human responses to these future intermediaries, technologies, and designs will not prove so novel and different. Yes, online, data-fueled recommender systems may seem disruptive and unprecedented. At their core, however, they merely reanimate long-standing debates over the commodification of taste and how cultural preferences should be organized, policed, guided, and led—discourses that long predate the internet. More than just a *plus ça change* plaidoyer, the larger stakes of this and the other In Focus contributions gesture toward examinations of the new via the old, the normal, the used, embodied experience, and the everyday. Toward histories and archaeologies of whining and fantasizing. Toward a differentiation between originality and novelty.   ✱

22 Frey, *Permanent Crisis of Film Criticism*.

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