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. Aca-fans predicted the mainstreaming of cult tastes and 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

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

[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).

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

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

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

[6] See, e.g., Stephen Groening, ed., "The Aesthetics of Online Videos," special issue, <u>Film Criticism</u> 40, no. 2 (2016); Chuck Tryon, <u>On-Demand Culture: Digital Delivery and the Future of Movies</u> (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," <u>New York Times</u>, March 18, 2007, http://www.nytimes.com/2007/03/18/movies/18scot.html; Gubbins, "Digital Revolution," 67–100.

[8] See, e.g., Tryon, <u>On-Demand Culture</u>.

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 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

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[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.

[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," Economist, June 30, 2018, 19.

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 mathematization 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 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 fully substituted by AI critics, avatars for the economic imperatives of profit-seeking media conglomerates.[14]

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[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, article 13 (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.

[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

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, or 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

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; Joseph Turow, The Daily You: How the New Advertising Industry Is Defining Your Identity and Your Worth (New Haven, CT: Yale University Press, 2011).

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 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

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[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).

[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).

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 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

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[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 (aged 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.

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 imagined. 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

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[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.

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 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 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-

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[22] Frey, Permanent Crisis of Film Criticism.

standing debates over the commodification of taste and how cultural preferences should be organized, policed, guided, and led—discourses that far precede the internet. More than just a plus ça change plaidoyer, the larger stakes of this and the other dossier contributions gesture toward examinations of the new via the old, the normal, the used, embodied experience, and the everyday. Toward histories and archaeologies of whingeing and fantasizing. Toward a differentiation between originality and novelty.