Introduction

Tell me to what you pay attention and I will tell you who you are.
—José Ortega y Gasset, *Man and Crisis*, 1962

Pay attention to what you pay attention to.
—Amy Krouse Rosenthal, Twitter, 2013

The transition from mass media to massively personalized Internet platforms is reshaping the competition for human attention. The powerful and insidious algorithmic wayfinding that Facebook and Google pioneered and TikTok's corporate parent, ByteDance, has so successfully exploited has many implications for culture, for what is made, seen, propagated, and imitated. Given how demographically huge and psychologically powerful these platforms are, their effects embody many paradoxes and contradictions. All of them matter.

Celebrity Is Rewarded yet Ephemeral

Online video has helped thousands of people profit from global name recognition, whether by direct monetization of views, endorsement deals, or ancillary businesses. Twenty-four-year-old Jimmy Donaldson, known online as Mr. Beast, earned $54 million in 2021, in part through videos that cost millions to create. One *Squid Game* reenactment, in which the winner took home $456,000, cost $3.5 million to create (compared to an average of $2.4 million per hour for the Netflix original); 142 million people viewed it in eight days. Donaldson also owns a chain of ghost kitchens and sells organic nutrition bars at Walmart. *Forbes* estimates his net worth at $500 million.[1]

At the same time, online video fame can be fleeting. Many creators speak of being "slaves to the algorithm" insofar as view counts may rise or drop dramatically for no apparent reason. More generally, digital media stress the feeling of what the communications scholar Wendy Chun has termed "the enduring ephemeral," and TikTok's manic velocity of memetic spread embodies this tendency: how many people remember Nathan Apodaca?[2] He was the TikTok star of 2020 who drank cranberry juice on a skateboard, now long forgotten. The volume of uploaded material would seem to be unsustainable: if online video is effectively infinite, everything beyond a minuscule slice of the whole will eventually become invisible.

Both Teenage Dance Videos and a Global Political Crisis

TikTok came to prominence by its lightning-fast popularization of teen culture and of instant memes, in particular. During the 2020 lockdown the service surged to prominence in many parts of the world, usurping Facebook and Instagram in key demographics. Music stars including Lizzo have been catapulted to global fame, everyday teens can get their fifteen minutes in the spotlight, and watch times in many countries continue to rise. Such strong performance confounds the local-global distinction that traditionally characterizes media properties.

But TikTok is built in China by parent company ByteDance and is subject to the requirements of the governing Chinese Communist Party. Security concerns soon came to light: How much of the vast sum of data being collected could be accessed by that government for purposes of surveillance, blackmail, or impersonation? And how might the infectious content-matching algorithm be used to advance China-approved messaging under the guise of light entertainment? Then-president Donald Trump ordered the service banned in the fall of 2020, and while his successor, President Joe Biden, did not advance the proposed remedies, the matter remains unsettled at the time of this book's publication. Numerous states and governmental agencies ban the service from workplace-issued devices, and legislation that would effectively ban the service in the United States has been introduced by Senator Marco Rubio of Florida.[3]

The Road from Cat Videos to Live NFL Streams

Although YouTube launched as a person-to-person video repository, and Twitch (now owned by Amazon) was built to livestream players playing video

and board games, both have entered the world of big media. Asynchronous streaming of most entertainment has led to fierce competition among Netflix, HBO, Paramount, Hulu, Disney, and others. Sports, meanwhile, still commands live audiences, and in the United States, no sport is more widely watched (and highly valued by advertisers) than football. In September 2022 Amazon began streaming Thursday Night Football, and in December of that year, Google won the out-of-market "Sunday Ticket" contract for NFL games by outbidding Apple and Amazon for a reported price of $2 billion per year. YouTube launched with the tagline "Broadcast Yourself," which was quietly erased in 2019—a reminder that video platforms have outgrown their now-quaint origins.[4]

Transcending Mass Audience Creation with Targeted Content Distribution

The history of online video illustrates a critically important technological and cultural transition. Media businesses traditionally thrived based on how well they could create content that would gather audiences—and how well they could attract advertisers to pay for access to those audiences. (Music and movies operate slightly differently, but in the same vein.) Mass media such as television and newspapers delivered the same message to millions of people. While there could be some customization of the content—the *Chicago Tribune* city edition differed from suburban editions, and the out-state edition was different yet again—the competition for attention was often won with big draws: telegenic stars, widely read columnists, aggressive newsgathering, and the like.

For Internet platforms, content creation is largely outsourced to segments of the audience. TikTok rewards good dancers, popular makeup artists, or funny people who emerge from the billions of viewers, at least initially. (A star system is emerging, and we will discuss that development in due course.) Thus, unlike Netflix, platforms like TikTok, Twitch, and YouTube don't have to try to pick winners. The consolidation of power shifts from content creation and mass distribution to algorithmic distribution, highlighted by deep personalization at planetary scale. Having machine learning determine what we read and watch, distributing what used to be called user-generated content, shifts power from newspapers and television networks to the digital platforms. These platforms are massively profitable, lightly regulated, and to date largely unaccountable. Consequences, including election disruptions, mass shootings, and horrific harassment, are treated largely as externalities

of profitability. The fact that YouTube reacts much more effectively to copyright infringement than to child endangerment speaks volumes.

As has always been the case, cultural tastemakers are among the most powerful individuals in a given era—think William Randolph Hearst, Samuel Goldwyn, Rupert Murdoch. In our time, the transition from human gatekeeping performed by editors, publishers, and producers to algorithmic rationing of promotion has reinvented that taste-making process. In light of online video platforms' scale, and because videos are not indexed and searched like the document-centric World Wide Web, most videos are currently watched on the basis of recommendations derived from *behavioral data* rather than the *content of the video*. The way algorithms promote or fail to promote a given piece of content is extremely important, but very poorly understood outside the platforms.

A Dystopia Born from Optimism

Today's problematic attention economy stands in stark contrast to a particular technological optimism. The computing pioneers responsible for the conceptual and technical foundations upon which the web, and later its platforms, were built shared many aspects of this worldview. Stewart Brand migrated from the Whole Earth Catalog's neo-homesteading ethos at the tail end of the 1960s to early online communities and the tellingly named Electronic Frontier Foundation.[5] Tim Berners-Lee and his coauthors in 1992 articulated the positivist ideal of the World Wide Web:

> You would have at your fingertips all you need to know about electronic publishing, high-energy physics, or for that matter, Asian culture. If you are reading this article on paper, you can only dream, but read on. Since Vannevar Bush's article (1945) men have dreamed of extending their intelligence by making their collective knowledge available to each individual by using machines.[6]

Only six years after Berners-Lee, however, James Katz of Rutgers astutely saw the potential for the web to pollute that stream of knowledge rather than nourish it. Acknowledging that "the Internet and the Web allow for the quick dissemination of information, both false and true," he noted that "unlike newspapers and other media outlets, there are often no quality control mechanisms on Web sites that would permit users to know what information is generally recognized fact and what is spurious."[7] Katz

predicted large-scale online mis- and disinformation at least fifteen years before they hit mainstream US culture.

The rapid evolution from Berners-Lee's extreme optimism to the many and profound downsides of ubiquitous connectivity—mental and physical health concerns, the monetization of private life via unmonitored behavioral experimentation, the hacking of democratic institutions, trolls and shitposting, swatting, aggressively nasty harassment of women and ethnic populations—is part of a much more complex story we cannot probe here. The short version, as per the cultural critic Kurt Andersen, is that the Internet age combined with an older distrust of authority (academic, religious, scientific, journalistic) to create what he calls America as Fantasyland.

The first contributing factor "was a profound shift in thinking that swelled up in the '60s. . . . *Do your own thing, find your own reality, it's all relative*."[8] The second ingredient was the dawn of the information age:

> Among the web's 1 billion sites, believers in anything and everything can find thousands of fellow fantasists, with collages of facts and "facts" to support them. Before the internet, crackpots were mostly isolated, and surely had a harder time remaining convinced of their alternate realities. Now their devoutly believed opinions are all over the airwaves and the web, just like actual news. Now all of the fantasies look real.[9]

Summary

These, then, are the ultimate tensions embodied in the World Wide Web, and in online video. The promises of instantly accessible knowledge, of global connectivity, and of truth shining light on ignorance have been proved to be null and void. Any open Internet discussion turns disgustingly toxic if left unmoderated. Extremists want to post not wedding videos or dating profiles (two early YouTube use cases) but beheadings and mass murder. The increased availability of facts has led to the rise of bold anti-intellectualism and the denial of even basic scientific literacy. Exactly as print did in its early years, online video fuels the wider dissemination of both dogma and heresy. Unprecedented scale has led us to this juncture—10 percent, or even 1 percent, of 3 billion people is a lot of extremists, misogynists, trolls, and foreign agents—and algorithms will have to be a big factor in finding a way out given that human moderation cannot scale to the demand. At the same time, as Tarleton Gillespie of Microsoft Research notes, the platforms have

been promoting "the promise of AI" for years. Users, regulators, and investors are presented with an as yet unrealized technological solution to a much more complex and nuanced challenge.[10]

Those algorithms are themselves problematic, however. As humans have uploaded, one at a time, billions of videos to repositories of huge scale, machines are watching us humans watch the videos. Unlike when conducting a Google search, users don't leave the YouTube site or the TikTok app. Accordingly, the computational models are designed to and effective in getting us to stay on the site longer, to "like, comment, and subscribe," and to come back later today and again tomorrow. TikTok usage is evolving rapidly, but one report stated that 90 percent of users checked the app daily, that US users spent thirty-three minutes per day on the service, and that that average US user opened the app eight times every day.[11] We have in our midst not only a powerful new way to communicate but also unseen, unspoken rules of the game manipulating our attention to it. ByteDance, Facebook, and Google are the early leaders in collecting our contributions and making those rules to adjust our behaviors. Amazon, Apple, Baidu, Netflix, and others are near neighbors.

Machine learning about users quickly fuels machine direction of them. As this tendency is more widely realized, familiar questions emerge, as they do with the rise of any new regime. What will people tolerate and when might they rebel? What platform practices will cross some legal, cultural, or emotional line? How will we each individually justify the costs of these platforms related to their benefits? These are the questions the book ultimately attempts to engage.

Chapter Overview

We begin the book with a discussion of the origins of online video. One precondition is intellectual: the emergence of a technical and cultural vocabulary in "Web 2.0" discourse to describe services that became the megaplatforms. Chapter 2 examines the technical challenges that have been posed and solved with varying degrees of success. These challenges include search and recommendation, ad serving, storage, streaming, content moderation, protection of copyrighted material, and the upload process.

Chapter 3 looks at the years of functional evolution that have defined online video. The commercial, legislative, jurisprudential, and computational evolution of content moderation (defining, finding, and removing forbidden material) is one strand. Curation (discovering and elevating the material the

service wants viewers to watch) is the other. Together, these processes have in many ways defined the emergence of online video platforms. We also pose some issues for the future, including accountability, regulatory oversight, accuracy, and transparency.

After talking about the emergence and history of the major platforms, we look at what's on offer in chapter 4, which is about learning. Because we learn by imitation, online video is a terrific teacher, whether of ballroom dancing, home appliance repair, makeup technique, or new languages. Teaching is done under a surprising number of auspices, and traditional education providers are lagging at video. At the same time, evolving gatekeeping mechanisms and misinformation campaigns compromise online video's ability to inform and teach.

Entertainment, the topic of chapter 5, is a big part of the story of online video. YouTube, Vimeo, and their kin act as a repository for everything from political speeches to movie clips. They serve as a sort of attic for many cultural artifacts, both widely popular and deeply personal to an individual or small group. Simultaneously, online video defines great swaths of current culture. As of 2021, YouTube was the most popular music streaming service in the United States, India, and France. For every Justin Bieber, who was propelled to global stardom by Usher using YouTube, or Lil Nas X, who built his career on TikTok making "Old Town Road" a sixteen-time platinum seller, there are many millions of amateur entertainers. One finds both Hollywood hits and anonymous piano practices. Self-made stars have emerged in areas from high school sports to fashion to online gaming to social commentary. Meanwhile, millions of videos get views in the single digits. The paradoxical story here is as old as celebrity. The downsides of Internet fame, including parasocial relationships, derive from the mismatch of the human psyche as it confronts the vast scale of the Internet platforms: television invited a person in a studio into a given living room at a given time, whereas TikTok brings a famous influencer into their bedroom and into a viewer's life any time they want.

In chapter 6, we briefly discuss three examples of how changes in technology reshape artistic expression. These examples are Adobe Flash as used in Homestar Runner, the mashup, and the reaction video.

Chapter 7 scratches the surface of the many issues raised by cross-platform migration, coordination, and dissonance. Scholarship knows little of what people do on any given platform, but almost nothing of how people operate across and among multiple ones. Men's rights activists, drill rappers, and beauty vloggers, not to mention the 2012 effort to urge the capture of

African guerrilla leader Joseph Kony using an Internet movie, all illustrate how online video exists within a complex ecosystem. Backchannel communications, memes, noise, cross-promotion, competition, and infrastructure (including payment platforms like Square) all come into play. The biggest issue related to cross-platform behavior is trying to understand how online actions both derive from and influence the offline world. Very little scholarship has even attempted to define or measure what might be called platform ecosystems, the particular and evolving combinations of Facebook, Snapchat, YouTube, LinkedIn, Line, TikTok, Pinterest, and Reddit or some other service that a given user might construct.

Chapter 8 attempts to situate online video. At the end of the day, what do we call it? How do we define it, conceptualize it, regulate it, tax it, subsidize it? In line with this set of cultural functions, another theme of the book relates to how we currently, and might in the future, understand online video as a medium that brings massive value but also puts new demands on regulators, viewers, uploaders, algorithm designers, advertisers, content owners, and others in the vast ecosystem.

Online video is a different kind of text compared to either print or broadcast TV, and new forms of literacy and illiteracy are emerging. Unlike television, where a linear schedule was the organizing principle[12] until the dawn of the streaming era, asynchronous online video is governed by search and, primarily, recommendation, both human and algorithmic. The role of online video in a wider trend toward nostalgia in digital platforms must be noted, particularly in a few of its global variants. The use of online video by displaced populations and in nations recovering from authoritarian rule bears mention. Concluding by investigating the early history of print to look for parallels helps frame online video as a new kind of cultural resource with side effects we should anticipate.

In the conclusion, we begin by looking at 2020 as a marked inflection point in the history of online video. YouTube increased its production of branded content, cracked down on misinformation, and embraced a social change movement more assertively than at any previous time. TikTok, meanwhile, exploded in US popularity among those under thirty, breaking new ground both in algorithmic effectiveness and in the success of a Chinese Internet company outside China. That success, however, spurred a new stage of involvement by the Chinese government in its consumer tech sector, potentially depriving these companies of capital, engineering talent, audience access, payment gateways, and other critical elements in their previous rise to prominence. In mid-2021, the picture suddenly grew blurry for Ant

Group, Tencent, Baidu, ByteDance, and others. Later developments continued these trends, as we will note.

As the opening epigraphs illustrate, we are living in a time when old ideas can be conveyed in new ways. However it is expressed, the newly redefined fight for our attention changes who we are. The lack of human gatekeepers means that any viewpoint can find an audience. A whole discipline known as "brand safety" has emerged as some advertisers seek assurance that their messaging will not appear in proximity to objectionable content. Millions of people are sucked into such content with the promise that "this is what the mainstream media won't tell you." Even the premise of fact-checking has been challenged by the promise of a media landscape in which one consumes only what agrees with their preconceptions, white supremacy and vaccine-induced autism included.

This state of affairs—unprecedented scale created by billions of independent individuals who both upload and watch, managed by generally invisible algorithms—is too huge to plumb, catalog, or otherwise digest. Nonetheless, we need somehow to come to terms with this new chapter in the human condition. As people among us *create* more of what we watch, and algorithms *determine* more of what we watch, the choices that platform companies, regulators, investors, creators, and viewers make both shape and reveal macro social priorities, economics, and cultural tendencies. The book attempts to explore a series of polarities and contradictions. Online video is both inclusive and toxic, global and personal, enduring and ephemeral, mindless and mindful, vast and intimate. That's a heavy agenda, so let's get to work.