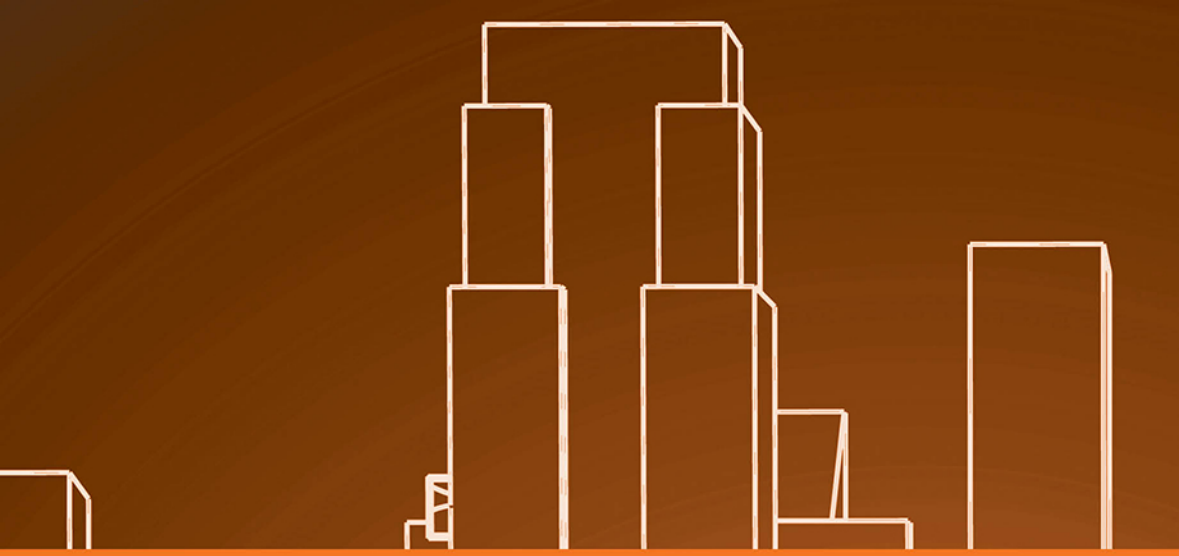

Routledge Studies in Marketing

MARKET-ORIENTED DISINFORMATION RESEARCH

DIGITAL ADVERTISING, DISINFORMATION AND FAKE NEWS ON SOCIAL MEDIA

Carlos Diaz Ruiz

Market-Oriented Disinformation Research explores the phenomenon of social media disinformation from the perspective of business and management. Carlos Diaz Ruiz's book, based on solid research, shows how disinformation may run unchecked on social media when it is profitable for unethical actors. It is a highly important and timely book that offers valuable insights for managers and students alike.

– **Christian Grönroos**, *Emeritus Professor, Hanken School of Economics, Finland*

Carlos Diaz Ruiz has written a timely book that provides insight into the question of 'why disinformation runs unchecked on social media?' The book is an indispensable companion for communication and media researchers interested in the financial incentives that make disinformation thrive online. Consequently, it is a must-read in media literacy and digital marketing courses.

– **Roderick Brodie**, *Emeritus Professor, University of Auckland Business School, New Zealand*

This is a most timely, well documented, well written and worrying analysis of how disinformation plays an increasingly important role in social media business models, driven by digital advertising. Carlos Diaz Ruiz has written a book that should be read and discussed among digital marketers and advertisers. It should be used for education and in academic research.

– **Lars-Gunnar Mattsson**, *Emeritus Professor, Stockholm School of Economics, Sweden*

Market-Oriented Disinformation Research

Market-Oriented Disinformation Research explores the spread of false or misleading information online through the lens of marketing theory and consumer research. It examines how the business models of digital platforms and advertising technology firms (AdTech) generate digital markets that incentivize the circulation of harmful content for profit. Rather than viewing disinformation and misinformation as accidental byproducts, the book proposes that they thrive in the current markets designed for digital advertising and influencer marketing.

Readers will learn how the amplification of disinformation can be linked to social media's business model. Examples include how social media algorithms promote addictive content, how fake news sites use ad fraud to lure in advertising revenue, and how some content creators rely on clickbait, ragebait, bots, and conspiracy theories to boost their engagement metrics.

The book is a must-read for scholars in journalism, media studies, and political communication, as well as policymakers interested in the democratic governance of social media platforms. In addition, it calls for digital marketing, advertising, and brand management professionals to take responsibility for their ad spending by advocating for greater oversight over AdTech intermediaries to prevent unethical actors from monetizing the harmful content that polarizes society and undermines democratic institutions.

Carlos Diaz Ruiz, Ph.D., is a business academic specializing in marketing strategy, consumer insights, and disinformation research. Dr. Diaz Ruiz is an Associate Professor (tenure track) at Hanken School of Economics in Finland and has been a faculty member at Kedge Business School in France and the University of Auckland in New Zealand. His research has been published in leading scientific journals, including the *Journal of Business Research, Journal of Public Policy & Marketing*, and *New Media & Society*. His current work on disinformation explores how advertising technology firms (AdTech) bankroll fake news and harmful content online.

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Market-Oriented Disinformation Research

Digital Advertising, Disinformation and Fake News on Social Media

Carlos Diaz Ruiz

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1 Follow the Money

An Introduction to Market-Oriented Disinformation Research

The world is facing many challenges, and yet we cannot tackle even the most urgent ones if we cannot agree they are real. The best tool we have for coordinating action at a global scale, the Internet, is not working for us because it is rife with disinformation, and there are multiple reasons for its proliferation. From nations advancing their geopolitical agenda to billionaires consolidating political power—the widespread dissemination of harmful content online is a serious issue. Moreover, it is not just a cultural or political problem but a business one.[1] Spreading disinformation online is a profitable practice for many: for those who seed disinformation to undermine democratic institutions, for the advertising technology firms (AdTech),[2] social media operators,[3] and content creators who amplify it for profit.[4]

One contributing factor is the misuse of *programmatic advertising*, an ad trading system that allows ads to be sold and served algorithmically without direct human oversight.[5] The result of trading ads at lightning speed is that advertisers do not always know where their ads are served, resulting in brands unintentionally bankrolling problematic content.[6] For instance, there are numerous examples of AdTech funneling legitimate ads to fake news websites, and even some examples of fake news ads appearing on the websites of fact-checking organizations.[7] Overall, the digital advertising market has been used to channel and amplify controversies.[8]

There are several examples of AdTech companies serving ads that fund highly problematic content. In 2024, the investigative journalism organization Bellingcat uncovered that websites in India used digital advertising markets to monetize false claims that Muslim men intentionally caused deadly floods, a claim debunked as fake news.[9] Similarly, *The New York Times* reported that advertisements for Vice President Kamala Harris, the Democratic nominee for the US presidential election, appeared before videos on YouTube that spread conspiracy theories that Haitian immigrants eat pets[10] —content that fits Google's definition of hate speech.[11] In Germany, a report by Ekō, a group focused on corporate accountability, revealed that Meta, in violation of its policies, monetized xenophobic and anti-democratic ads placed by extremist organizations on its platform.

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The problem with ads appearing on fake news websites and sponsoring harmful content was identified a decade ago.[12] And yet, the situation has continued to grow, and now, in addition to wasting money on ad fraud, brand managers must contend with the risk of their ads inadvertently funding some of the worst content on the Internet.

Unsurprisingly, social media and advertising technology platforms are coming under scrutiny.[13] Regulators and academics are beginning to analyze the business models behind algorithmic content consumption to determine whether financial incentives contribute to the widespread dissemination of disinformation online.[14] Indeed, there is a strong possibility that disinformation is a byproduct of the business models that sustain digital advertising—a market projected to reach US$800 billion by 2025.[15]

Whistleblowers have highlighted this conflict of interest, raising concerns about the extent to which financial motives may drive its circulation. In 2021, a Facebook whistleblower, Frances Haugen, took the stand in a US congressional hearing.[16] As a former product engineer, Haugen witnessed the inner workings of Meta, one of the most influential social media companies. By 2022, Meta reported advertising revenue of 113.6 billion US$,[17] controlled 54% of the social media advertising market,[18] and reported 2,934 million monthly active users.[19] Haugen recounted how the tech giant consistently prioritized profit over societal well-being, detailing how Facebook's algorithms were designed to amplify content that kept users clicking and sharing.[20] Haugen's testimony was based on internal documents known as the *Facebook Files*, published by a consortium of journalists, including the Wall Street Journal.[21] The documents painted a grim picture: Facebook was well aware of the harmful effects its platforms had on society, from inciting extremism to exacerbating mental health issues among teenagers. It was also aware that posts with angry emojis were shared five times more than posts with standard likes and were often polarizing and misleading.[22] When Facebook's internal researchers presented evidence of the platform's detrimental impacts, they were overruled by executives fixated on engagement metrics. As the *Facebook Files* clearly revealed, Meta's business model and ad advertising revenue hinge on users returning to the platform, emotionally reacting to the content, and sharing it further.

A few years after the Facebook whistleblower revelations, the spread of online disinformation on digital platforms has worsened due to the rise of AI-enabled misinformation.[23] Moreover, it has become increasingly clear that digital platforms' business models bear responsibility for exacerbating the problem,[24] partly because they profit from disinformation even as they claim to combat it.[25] For instance, platforms can remove ad fraud bots and still keep the advertising money they generate.[26] Even when an advertising platform demonetizes fake news websites,[27] it gets to keep the advertising revenue,[28] creating a financial incentive to respond only to the most egregious cases.[29]

The social problems that emerge from marketizing the forums in which social discourse takes place can be observed in the transformation of the Twitter platform, now called X. Elon Musk took control of Twitter in 2022,

promising significant reforms to improve the platform's integrity and address longstanding issues such as bots and misinformation.[30] Somewhat ironically, X has failed to address the persistent problems of bots and misinformation, effectively becoming a haven for incendiary accounts.[31] In one case, Musk's platform sued an NGO when it alerted advertisers that their ads fund problematic content on X.[32] Despite Musk's vocal commitment to enhancing the platform, the prevalence of automated accounts and the spread of misleading information remain largely unchecked while also suing advertisers for refusing to put their brands at risk on the X platform.[33]

By July 2024, the European Union initiated legal action against the X platform after a seven-month investigation.[34] Based on the Digital Services Act (DSA), the lawsuit accuses X of allowing bots to use the platform's "blue checkmark," which ostensibly verifies whether users are real. Before Musk's management, the blue checkmark indicated that an account had been verified as belonging to the genuine person or organization the account depicts. The EU argues that the blue checkmark verification system is no longer reliable under a paid system that catalyzed the proliferation of fake accounts, bots, and impersonators, potentially misleading other users into believing that accounts with blue checkmarks represent genuine users. This change shows how the business model that social media platforms choose, like user verification, is linked to the spread of disinformation.

As a marketing educator, I found the revelations in the *Facebook Files* and the metamorphosis of Twitter into the X platform deeply troubling. Reading numerous examples of social media firms promoting harmful content online made me question the implications for the marketing profession. After all, even if it is unintentional, the fact that brands are bankrolling disinformation and supporting toxic content should concern marketing and advertising professionals, who are responsible for managing their branding budgets. Surprisingly, most marketing practitioners or academics have ignored these recurring scandals.[35] Much of the research examining how business practices contribute to the spread of disinformation is published in journals and books in media studies,[36] while current research in marketing journals often frames it as a minor issue or, as Brett Gordon and colleagues described it in the *Journal of Marketing*, an "inefficiency."[37] However, if it were merely a case of inefficiencies, one would expect tech firms to have resolved the issue by now. Unfortunately, despite their promises, the core problem remains unaddressed. The cavalier attitude toward the relationship between disinformation and digital advertising motivated my interest in researching the spread of online disinformation from a business perspective, culminating in writing this book.

Disinformation Research

The Shorenstein Center on Media, Politics, and Public Policy at Harvard University[38] defines disinformation research as "the spread and impacts of misinformation, disinformation, and media manipulation," including understanding "how it spreads through online and offline channels" and "why people are

susceptible to believing misinformation, and successful strategies for mitigating its impact." Under the Shorenstein's definition, disinformation is strongly linked to media manipulation, exploiting media's conventions and practices to spin a misleading narrative and to circulate deceiving content. Along these lines, disinformation research is an attempt to examine the causes and effects of various deceptions, from fake news to conspiracy theories, that permeate society, politics, and business. It also aims to develop countermeasures and policies that mitigate the spread of disinformation while protecting democratic freedoms.

One predominant way to think of disinformation is as part of hybrid warfare, a multifaceted strategy that integrates cyber tactics, psychological operations, and strategic communication meant to destabilize democracies, often by polarizing political discourse and paralyzing political action. According to the European Commission,[39] "the spread of both disinformation and misinformation can have a range of harmful consequences, such as threatening our democracies, polarizing debates, and putting the health, security and environment of EU citizens at risk." From a security perspective, the European Centre of Excellence for Countering Hybrid Threats argued that foreign actors often leverage various disinformation tools to undermine societal stability and national security.[40]

Moreover, disinformation has the potential to disrupt democratic governance through election interference.[41] As nearly four billion people worldwide voted in 2024 in countries like the United States, Mexico, India, and South Africa,[42] democratic governments are developing strategies to counter electoral disinformation from external state actors.[43] The high number of elections has become a test for the survival of democratic norms and institutions, even as political parties have leaned into identity politics and culture wars to harness grievances to get votes.[44]

Protecting the integrity of elections from undue interference and safeguarding democratic institutions have become the centerpiece of the current efforts to counter disinformation. However, there is a risk of abusing anti-disinformation efforts: while democratic countries craft legislation to counter hate speech and fake news, there are also examples of censorship disguised as anti-disinformation laws. For instance, Nina Ognianova, a spokesperson for the Committee to Protect Journalists (CPJ), which is a nonprofit organization, said that a Belarusian law to fight fake news is an excuse to implement censorship, "The Belarusian government has jumped on the bandwagon of 'fake news' not because it wants to shield citizens from falsehoods but because it wants more power to decide what information they receive," arguing that these laws are, "thinly veiled attempts at tightening censorship."[45]

Under the guise of passing anti-disinformation laws, authoritarian regimes roll back press freedoms by accusing journalists of spreading falsehoods and cracking down on dissent to punish otherwise legitimate forms of protest.[46] The CPJ documented that 2023 witnessed a record number of journalists jailed around the world, many of them arrested for breaking

anti-disinformation laws.[47] In 2021, "Myanmar's junta has effectively criminalized independent journalism, arresting and charging journalists, closing news outlets, restricting access for international reporters, and driving journalists underground or into exile."[48]

A balancing act is needed, as addressing the spread of disinformation online requires a profound understanding and respect for democratic freedoms and free markets. While overregulating media markets can devolve into censorship, the lack of accountability and democratic governance for tech firms is not the solution. After all, while tech firms argue they are a new version of the global town square, at the core, they remain advertising businesses, organizing and distributing communication under the business logic of the attention economy.

Disinformation in the Context of Digital Advertising and Algorithmic Consumption

Social media platforms were not designed to convey information; they were meant for entertainment. Their algorithms were meant to identify amusing posts and videos and optimize their subsequent spread. However, as marketers discovered that overwhelming emotional content—including anger and anxiety—is more likely to go viral,[49] content has changed to emphasize controversy. By exploring the intersection of technology, media, and commerce, this book contributes to disinformation research by examining how legitimate business ecosystems can be co-opted to spread disinformation and incendiary content online, largely because it is profitable.

In a digital economy focused on algorithmic consumption, engagement is the primary currency, and social media platforms are finely tuned to maximize it. Once heralded as an integral part of democratic life,[50] and despite their early promises to liberate information and make it accessible for all,[51] the tech firms behind those platforms and search engines have become an advertising business that commodifies and commercializes user attention.[52] Specifically, the platforms work through algorithmic consumption, utilizing predictive analytics on users' previous behaviors and preferences to curate micro-targeted messages.[53] The personalized composition of the user feed hides the fact that advertisers are paying to configure it, spending money to push messages, effectively creating the opportunity for using "dark money" to fund political messages.[54]

The resulting ecosystem, designed primarily to serve digital marketers, has redefined the Internet by creating a machine that identifies and amplifies the content most likely to elicit reactions. Since the system is explicitly designed for advertisers to pay to influence algorithms and ensure their content reaches targeted audiences more effectively, it is unsurprising that it has been used to do precisely that: maximize the production and distribution of engaging content, which is often controversial and polarizing because it appeals to us-vs-them messaging.[55] The business models underpinning the commercial Internet

do not discriminate between entertainment and influence campaigns; they reward whatever captures attention most effectively, monetizing every click while pulling down the curtain on the harm and social consequences such content may bring.[56] Examining this phenomenon matters because it is not immediately apparent to most users how social media monetization works and why it incentivizes content creators to adopt a contrarian position.[57]

The power of controversy to generate clicks was apparent during the COVID-19 pandemic when disinformation substantially hindered public health initiatives. Public hygiene initiatives, like face masks, became the flashpoints of culture wars, materializing polarization, animosity, and mistrust.[58] Vaccine misinformation was profitable for influencers and social media companies.[59] The Center for Countering Digital Hate (CCDH) shows that while anti-vaxx influencers have sophisticated strategies to exploit social media,[60] social media companies have also benefited from the engagement generated by provocative, often sensationalized, and undoubtedly controversial content.[61]

The CCDH also revealed that the anti-vaccine movement misused online advertising technologies to spread misinformation while generating substantial revenue for themselves and tech companies.[62] Its "Disinformation Dozen" report discusses a troubling reality about the digital ecosystem during the COVID-19 pandemic.[63] It identifies twelve prominent figures who have been instrumental in disseminating anti-vaccine misinformation across social media platforms. These individuals were responsible for an astonishing 65% of all anti-vaccine content shared on social media. Despite the danger posed by their false narratives, these influencers remained active due to the platforms' inconsistent enforcement of content policies.

Market-Oriented Disinformation Research: Thesis and Outline

> Market-oriented disinformation research can be understood as a research field that investigates the circulation of disinformation—along with its multiple manifestations like fake news and conspiracy theories—from a business perspective addressing the market practices that render it profitable.

Since policymakers and researchers working on disinformation topics often have journalism, politics, or security backgrounds, their training may overlook the commercial side of the disinformation phenomenon.[64] Therefore, the book extends previous research by proposing that a market-oriented perspective is crucial to examining disinformation's rapid spread on the Internet, particularly on social media. First, it contributes to disinformation research by unpacking the mechanisms of how disinformation spreads at scale, fueled in part by the very structures intended to keep us informed and connected. Second, it guides the reader through the pipelines of the digital advertising industry, demonstrating how the market siphons advertisers' money to fund fake news outlets and how influencers produce content that can game the social media algorithm.[65] The primary audience of the book includes but is

not limited to professionals without a background in digital marketing, like journalists, communicators, and media literacy educators.

The book is structured as follows. After the introduction, Chapter 2, *The Polysemy of Disinformation*, examines the multiple manifestations, meanings, contradictions, and definitions of disinformation, including those that are not always helpful. Although disinformation has become a household term in journalism and political sciences, it remains conceptually elusive. Hence, the purpose of the chapter is to disambiguate the concept of disinformation for the newcomer, map some dominant interpretations, trace its origins in the military and security fields, and explore the current use of the term in social media and corporate spin.

Chapter 2 also elaborates on the working definition of disinformation that will be used throughout the book. Building partly upon the adversarial narrative approach proposed by the *Global Disinformation Index*[66] and the author's previous empirical research on how disinformation circulates online,[67] this work adopts the following definition:

> Disinformation is an orchestrated adversarial campaign that weaponizes misleading information—including falsehoods, truths, half-truths, and value-laden judgments—to exploit and amplify identity-driven controversies for political, military, or commercial gain.

Chapter 3, *Disinformation Research*, maps out the academic field. It is based on a systematic literature review and a semantic analysis of how disinformation has been examined in multiple academic disciplines. The chapter reviews the field's conceptual foundations, including how disinformation becomes operational across various contexts, from cybersecurity and health policy to political sciences, media studies, computer science, and defense. Researchers in those fields have examined multifaceted manifestations of disinformation, whether by that name or a broad lexicon of similar concepts, including conspiracy theories, hoaxes, or fake news.[68]

The academic body of knowledge of disinformation research spans thousands of scholarly publications annually.[69] One of the reasons is that disinformation has become the *problem zero* for many of our most acute challenges. As a society, we cannot solve the world's most significant and wicked problems—including climate change—if we cannot even agree on the facts around those problems or whether they are real. According to the 2025 Global Risks Report, released at the *World Economic Forum*,[70] misinformation and disinformation constitute the most pressing short-term risk because they prevent solving existential risks. As new deception techniques associated with digital technologies emerge, the hindering impact of disinformation becomes even more evident. Simultaneously, the popularization of AI-generated content means that convincing fakes become available to a broad range of users: "No longer requiring a niche skill set, easy-to-use interfaces to large-scale artificial intelligence (AI) models have already enabled an

explosion in falsified information and so-called 'synthetic' content, from sophisticated voice cloning to counterfeit websites."[71]

Since the number of publications is growing rapidly and researchers working in multiple disconnected fields do not necessarily build theoretically upon each other, it results in conceptual fragmentation. Chapter 3 contributes to organizing the literature, providing a baseline for understanding the fundamental topics within each research faction.

Chapter 4, entitled *Disinformation Research from a Constructivist Market Studies Perspective*, introduces the conceptual foundations of the book's central thesis. The digital advertising market works through real-time auctions conducted through automated machine interactions, and it is susceptible to misuse, primarily through ad fraud and user surveillance.[72] However, most people remain unaware of the market's inner workings, and business research remains a gap in the literature.[73] This chapter argues that constructivist market studies (CMS), a theory that studies how markets are performed in practice, can be a productive method theory for disinformation research. Adopting a market-oriented perspective can allow researchers to scrutinize corporate governance guidelines and platform monetization schemes, which, in turn, may open opportunities to enact the democratic governance of digital advertising and influencer markets. The chapter examines the premise that the current configuration of the digital advertising ecosystem is conducive to disinformation's rapid spread, which means disinformation spreads because it is profitable.

Chapter 5 explores conceptually how the "market shaping" approach opens new ways to think about the ways disinformation circulates on social media. The chapter was published as a stand-alone conceptual paper in *New Media & Society*, the premiere scientific journal in media studies.[74] The publication argues that digital media platforms, including social media, benefit from spreading controversial and polarizing content because it captures users' attention and keeps them active. The paper shows that disinformation is not a side effect of social media's business model but rather an expected outcome. It compares the business models of pre-digital broadcasting media, partisan media, and digital media platforms to identify qualitatively different forms of disinformation in each one.

Chapter 6 guides the readers through the plumbing and pipelines of the digital infrastructure of the commercial Internet, a practice called *Programmatic Advertising*.[75] This system is the backbone of digital advertising, a fully automated market utilizing real-time bidding and predictive analytics to decide which ads to display to each user. Despite its widespread use, the inner workings of programmatic advertising remain opaque. Advertising technology firms (AdTech) often maintain a low profile; even Google, Meta, and Amazon are known for public-facing services like search engines, social media, and retail rather than for their AdTech business.

The pipelines of the digital advertising market, valued at €680 billion,[76] are often described as *too complex*, even though this market has a straightforward model: more clicks and engagements translate into increased revenue from advertisers.

Current antitrust litigation against Google centers on the allegation that the tech giant has established a monopoly in the digital advertising market, effectively stifling competition and innovation.[77] This concentration of power, the government claims, artificially inflates prices for advertisers. In its defense, Google argued that the digital advertising market is highly technical, involving complex algorithms, real-time bidding processes, and intricate networks of intermediaries. This complexity, Google asserts, makes the nuances of the market challenging for individuals without specialized knowledge to comprehend fully; therefore, a jury trial is impossible. Instead, Google advocated for a bench trial, where a judge could effectively grasp the intricacies of the digital advertising landscape.[78]

AdTech firms can keep problematic practices out of view by framing the market as esoteric and opaque. The problem is that it is untenable for the digital advertising market to avoid oversight by claiming it is too complex. Advertisers need to know precisely how their budgets are used, and consumers need to know who pays to display certain content.[79] Consequently, this book is a modest step to disambiguate this digital market and its links to the proliferation of problematic content, including disinformation. After all, it should be understandable for the regular user how digital advertising shapes public discourse, including how the content that captures the lion's share of advertising revenue is often incendiary and contrarian.

Chapter 7, *The Marketplace for Clicks*, examines the controversial nature of social media's engagement-driven business model. It argues that disinformation circulates so broadly on social media partly because the algorithmic consumption model used by digital platforms encourages digital creators to publish and amplify controversial content. The chapter reviews academic literature on business models and their use on digital platforms. Specifically, it examines the business model of social media companies, characterizing it as a "marketplace for clicks" that overlaps with (but is not identical to) the digital advertising market. The chapter explains why social media platforms collect and harvest vast amounts of user data to generate detailed user patterns that can be used for targeted advertising.[80] The commercial value of user data helps to understand how and why social media platforms seek to maximize user engagement. Moreover, the chapter argues that a profound understanding of social media's business model is crucial in advancing disinformation research.

Specifically, current research on digital media's business models shows that, unlike the consolidated audiences of the broadcast era, today's audience fragmentation and its accompanying algorithmic segmentation practices are best suited to emphasize disruptive messaging that contradicts mainstream media.[81] A recent experiment called *CounterCloud* demonstrates that it is possible to create a fake news ecosystem that automatically monetizes fake news and spreads disinformation,[82] often using artificial intelligence to seed and disseminate messages directly contradicting official messages, providing a contrarian perspective that can devolve into conspiracy theories.[83]

Chapter 8, *Echo Chambers on Social Media*, examines the insidious nature of a phenomenon in which people adopt fringe beliefs and increasingly extreme positions. The chapter reviews the concept of echo chambers and distinguishes between its three partially overlapping interpretations. One, *filter bubbles* refer to how, through algorithmic curation, users are presented with a limited amount of ideologically similar news media. The second, *epistemic bubbles*, refers to a phenomenon in which people make sub-optimal decisions by surrounding themselves with ideas they already agree with and ignoring relevant sources of information. The third discusses echo chambers as *structures for strategic discrediting*, in which insiders engage in cultural wars,[84] digging deeper into their epistemic positions when interacting with outsiders.[85] This form of communication creates closed loops of identity-driven controversies that reinforce preexisting biases and facilitate the spread of disinformation as rhetorical munition against perceived opponents.

The chapter provides an example based on empirical research into two distinct echo chambers: the manosphere and the flat Earth. The latter reveals how flat Earthers use several rhetorical strategies to frame their argument—that the Earth is flat rather than a sphere—as part of an adversarial narrative directed against their perceived opponents: atheists, the government, and the intelligentsia. By building the flat Earth argument as a defense of Christianity, they gain allies among members of militant Christianity who already believe in creationism, not evolution, and already perceive to be under siege by the atheists who wield science against them. Likewise, by appealing to first-hand sensorial experiences and homemade experiments, flat Earthers build upon existing distrust against the university-educated intellectual elites who discard practical knowledge as backward and instead clinch to impractical "book knowledge." While flat Earthers did not invent these controversies, they exploited them to create an echo chamber that thrives on taking contrarian positions.

In Chapter 9, *Synthetic Media*, the role of artificial intelligence (AI) in democratizing the rapid creation of synthetic media is explored. The chapter provides an overview of how computer-generated content is upending the social dynamics of the Internet by flooding it with content generated by non-humans. With increasing calls for responsible AI development, the chapter discusses how synthetic media, such as photorealistic computer-generated images, AI synthetic voice, and deepfake videos, blur the lines between reality and fiction. These tools also enable the creation of persuasive bots and virtual influencers.

Law enforcement agencies have explored the overlap between synthetic media and disinformation. For example, Europol released a report on the risks that the spread of deepfakes, computer-generated photorealistic images and videos of people, poses to election interference and revenge pornography.[86] In combination, computer-generated content raises concerns about the role of humans on the Internet, catalyzing multiple ways to address this issue.

One is the emergence of the "Dead Internet" conspiracy theory, which proposes that the Internet is populated entirely by bots. According to the Dead Internet conspiracy theory, the Internet is now a façade of computer-generated content in which humans are absent. While the theory takes the problem to an extreme, this belief is anchored to the really-existing bot-induced artificiality in the digital landscape and to the legitimate anxiety of people of ending up interacting with fake social media bots.

Roads Ahead: Reforming Digital Advertising and Fostering Social Resilience

Even though the rapid spread of disinformation online has become a lucrative business, markets are systems that, while undoubtedly complex, are subject to change and can be shaped.[87] As we navigate the upcoming "disinformation age,"[88] we must remember that the existing version of the digital advertising market is not preordained or inevitable.[89] Instead, we have the opportunity to reform the social media and digital advertising markets in a way that protects society against disinformation while guarding hard-earned democratic freedoms, including freedom of expression.

Previous research has noted that media and social media have financial incentives that reward the propagation of disinformation. Still, these claims require careful examination and systematic research to understand precisely what aspects of the business model should be reformed. The reason is that advertising is a legitimate business practice, although it is unclear why advertisers take insufficient steps to prevent their budgets from funding disinformation and fake news. Some attribute the phenomenon to the avarice of advertisers,[90] others—to the ways bad actors exploit vulnerabilities in the advertising system[91] or to the whole infrastructure of the digital advertising market.[92] We take a closer look at those claims now.

Noah Giansiracusa, a mathematician expert on data-driven algorithms and their role in society, believes that part of the reason for the growth of the fake news industry is the "avarice of advertising" because, even though Adtech platforms, like Google Ads, are aware that their algorithmic advertising distribution systems divert ad revenue to fake news, they take only reluctant steps to counter it.[93] Increasingly, media researchers call advertisers to take responsibility, urging "the advertising industry to make the sort of judgments—about truth and falsehood, acceptable and unacceptable speech—that have long been the domain of journalists."[94] The argument behind this call is that advertisers know that their ads fund disinformation and fake news but choose to ignore the consequences of their actions.

While some commentators squarely blame advertisers, another explanation is that the business ecosystem nudges actors to make interrelated decisions. For instance, news media outlets' business models developed a co-dependent relationship with social media firms. For media analysts Alice

Marwick and Rebecca Lewis, "media's dependence on social media, analytics and metrics, sensationalism, novelty over newsworthiness, and clickbait makes them vulnerable to media manipulation."[95] The overreliance on online traffic directed by platforms makes news organizations compete with fraudulent publishers for a share of advertising revenue, which affects not just advertising but also news media business models.

A third stream focuses on the digital infrastructures enabling precision influence campaigns that "align the economic interests of platforms and advertisers" regardless of "whether they are pushing retail products, news stories, political candidates, or disinformation."[96] These tools include behavioral data collection, programmatic digital auctions, predictive analytics, social media management software, and algorithmic distribution systems. The extensive mobilization of user surveillance on social media can be applied similarly, whether for legitimate advertising purposes or influence campaigns funded by dark money.

Within the same discussion, there is also an argument about how the core of the disinformation problem can be found in the digital infrastructure of the advertising market.[97] Mainly, programmatic advertising requires more thorough oversight by advertisers, researchers, policymakers, and consumers. Current antitrust litigation accuses AdTech firms of using this real-time bidding system to pit advertisers in a competition for ad space allocation, artificially inflating prices.[98] This system can be exploited in myriad ways:

> Rather than a single, highly visible, catastrophic event, there are millions of tiny, fleeting, sometimes comical occurrences that get ignored or laughed off but collectively finance tens of millions of dollars in disinformation and conspirational bile, while bleeding billions of dollars away from reputable publishers and legitimate sources of news, destroying our privacy in the process.[99]

Recent legislation demonstrates that policymakers are increasingly interested in regulating the digital advertising market.[100] Ongoing trials in the United States[101] and Europe[102] show that governments are aware of the concentration of billionaires in digital media markets, including social media and advertising technologies (AdTech), and are starting to take the initiative to reform the platforms' business model. However, anti-disinformation laws can be used to dismantle democratic checks and balances, fostering authoritarianism[103] and targeting journalists and dissidents.[104] NGOs tracking press freedom worldwide have documented how journalists are being jailed in record numbers partly under legislation that ostensibly was designed to counter fake news but that, instead, is a thinly veiled tool to purge dissent.[105] To avoid this pitfall, researchers, activists, and policymakers must become intimately knowledgeable about the digital advertising market so that its reform is anchored in democratic accountability rather than censorship.

Consequently, marketers and advertisers should participate in reforming the digital advertising market to earn public trust.

Finally, countering disinformation is a challenge that requires public participation. Therefore, multiple initiatives exist to develop social resilience to disinformation, including media literacy.[106] Traditionally, media literacy has been used to develop critical thinking skills about consuming specifically news media, helping individuals discern credible information from sketchy sources and fake news. However, as most people now obtain news from influencers and social media, this focus on messaging alone is insufficient. Media literacy often overlooks the financial incentivizes that drive social media creators to adopt certain positions to align with platform algorithms. By discussing the business models of news media organizations and social media firms, media literacy educators can enhance their programs to include an understanding of the financial incentives driving content creation. This broader approach enables individuals to critically evaluate the messages they receive in the context of their economic motivations, leading to more comprehensive and effective media literacy outcomes.

Overall, while several attempts at countering disinformation focus on enhancing platform accountability and reforming digital advertising markets, there is a risk of developing legislation that rolls back press freedom and democratic liberties under the guise of protecting the public against fake news. Instead, by treating disinformation as an outcome of a market system, it is possible to design actions to counter disinformation in a way compatible with the values of liberal democracy, market economy, and press freedom.

Notes

1 Mills, Pitt, and Ferguson, "The Relationship between Fake News and Advertising."
2 Giansiracusa, "Avarice of Advertising: How Algorithmic Ad Distribution Funds Fake News and Reinforces Racism."
3 Silverman et al., "How Google's Ad Business Funds Disinformation Around the World."
4 Braun and Eklund, "Fake News, Real Money: Ad Tech Platforms, Profit-Driven Hoaxes, and the Business of Journalism."
5 MacKenzie, Caliskan, and Rommerskirchen, "The Longest Second: Header Bidding and the Material Politics of Online Advertising."
6 Diaz Ruiz, "Disinformation and Fake News as Externalities of Digital Advertising: A Close Reading of Sociotechnical Imaginaries in Programmatic Advertising."
7 Wakabayashi and Qiu, "Google Serves Fake News Ads in an Unlikely Place: Fact-Checking Sites."
8 Nadler, Crain, and Donovan, "Weaponizing the Digital Influence Machine: The Political Perils of Online Ad Tech."
9 Chaudhuri, "Indian Sites Spreading Harmful Disinformation Are Earning Money Through Google's Ads."
10 Hsu and Thompson, "On YouTube, Major Brands' Ads Appear Alongside Racist Falsehoods About Haitian Immigrants."
11 The glossary Google maintains defines hate speech as content that promotes or condones violence, discrimination, disparagement, or has the primary purpose of

inciting hatred, against an individual or group on the basis of a protected characteristic (race, ethnicity, religion, disability, age, nationality, veteran status, sexual orientation, gender, gender identity, or caste) or any other characteristic that is associated with systemic discrimination or marginalization.

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25 Papadogiannakis et al., "Who Funds Misinformation? A Systematic Analysis of the Ad-Related Profit Routines of Fake News Sites."
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29 Elliott, "Meta Made Millions in Ads from Networks of Fake Accounts."
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31 Hananoki and Kann, "X Is Placing Ads for Amazon, NBA Mexico, NBC Universal, and Others next to Content with White Nationalist Hashtags."
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33 AP News.
34 European Commission, "Commission Opens Formal Proceedings against X under the Digital Services Act."
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40 European Centre of Excellence for Countering Hybrid Threats, "Hybrid Threats: A Comprehensive Resilience Ecosystem."
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68 Jack, "Lexicon of Lies: Terms for Problematic Information."
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2 The Polysemy of Disinformation

Definitions, Meanings, and Contradictions in Disinformation Research

Disinformation is a concept with multiple meanings, which complicates its use in popular culture and academic research. The concept owes its semantic pluralism to the fact that it has emerged in several academic fields, including politics, defense, and media. Each of these fields has developed an independent understanding of what disinformation means[1]; for instance, for military analysts, disinformation is a type of *hybrid warfare* that state-backed actors use to control the informational battlespace and to paralyze the opponent. More precisely, it refers to strategic and tactical efforts to gain advantages over adversaries by disrupting their awareness and diminishing their will to fight.[2] In foreign policy, disinformation refers to shadow influence campaigns and media manipulation efforts to advance national interests abroad, usually through election interference.[3] For journalists, disinformation means intentionally spreading false or misleading information, including fake news. For some authoritarian politicians, co-opting terms like "disinformation" and "fake news" means dismissing dissent and news reports they do not like—a tool to gain and wield political power.[4] Moreover, disinformation has been used in business practice as a form of corporate spin to deal with scandals by denying their relationship with a focal firm or minimizing its effects. Since the term disinformation appears in numerous contexts, the emergence of multiple interrelated interpretations is unsurprising; in other words, disinformation is *polysemic*.[5]

Most of us encounter several polysemic terms in everyday life. They are usually unproblematic because people grasp the correct interpretation through contextual cues. For example, when a person declares their intention to go to the *market* after work, the receiver will likely understand that the market refers to a physical location, like a supermarket, probably to buy groceries. However, if a news anchor declares that the *market* is experiencing volatility, the audience will likely understand that the market refers to financial markets and the stock trading industry. A brand manager stating a *target market* in a business plan will likely describe the potential buyers, a segment of consumers. Moreover, a market can mean a country, for instance, when an entrepreneur declares the opening of a local office in China, or it can also mean a product category like the electricity market.

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However, the intended meaning of a polysemic term is not always contextually derived, especially if it is a neologism that circulates broadly in popular culture and encompasses multiple interpretations. For instance, the disinformation concept represents the broad circulation and beliefs in various misleading practices, like conspiracy theories and hoaxes on social media. Additionally, as disinformation tactics evolve to match AI technologies, like in deepfakes, scholars and practitioners must continually add nuance, leading to more complex understandings and making it a challenging concept to capture in simple terms. Hence, the terminology associated with disinformation research has become so extensive that some researchers maintain entire libraries to disambiguate it. One example is the "Lexicon of Lies," a compendium that defines and illustrates dozens of terms related to the spread of problematic information online.[6]

The objective of this chapter is to disambiguate the concept of disinformation to the newcomer to disinformation research, providing a baseline that allows the reader to navigate the field and the rest of the book. It starts by exploring how disinformation has been operationalized in multiple domains of practice, demonstrating its polysemy through similar but not identical interpretations that emphasize whether certain activities can be classified as disinformation. Then, the chapter turns toward analyzing the strengths and limitations of existing definitions. Finally, the chapter proposes the unifying definition used throughout the manuscript.

The Meaning of the Term Disinformation Is Field-Dependent

Disinformation as Part of Foreign Policy and Hybrid Warfare

The use of deception in politics and war is as old as humankind. Historians have traced discussions of disinformation to Classic Greece, when deception was an integral part of warfare.[7] Political and military leaders from the classical period understood the significance of weakening the resolve of the adversaries' population, concealing one's actions, and disrupting the flow of information from opposing parties by employing tactics such as "information loss, information control (dissemination and suppression), and information chaos."[8] A textbook example is the famous story of the Trojan Horse, a legendary narrative of the classical era in which the Greeks built a hollow horse filled with soldiers as a ruse to infiltrate the city of Troy. Whereas not all military deceptions are disinformation, the term disinformation emerged to describe the combination of psychological operations designed for military purposes, aiming to destabilize the adversary and erode its willingness to fight.

The contemporary interpretation of disinformation can be traced back to the Cold War era when it was used as a tool for psychological warfare, aiming to sow confusion and mistrust. After the Second World War, the world powers engaged in proxy conflicts meant to undermine each other's influence through covert operations, often including planting stories in newspapers

detrimental to the opponent's ideology. In their book *Dezinformatsia*,[9] Shultz and Godson discuss Soviet disinformation tactics, including the use of covert groups, forgery, and media manipulation to inject propaganda and disrupt the information flow of Cold War opponents. For instance, the Soviet Union disseminated news that Americans were responsible for the AIDS epidemic.[10]

The use of covert operations to destabilize governments became a staple of the Cold War era when both the KGB and the CIA made extensive use of manipulation mechanisms to unleash chaos and foment internal dissent in each other's sphere of influence. Several documented examples exist of using manipulation and informational warfare, including financing dissidents and establishing front organizations to conduct sabotage. One example is the Iran-Contra scandal during the 1980s, in which the US administration facilitated covert arms sales to Iran, hoping to use the proceedings to destabilize the Nicaraguan government. These espionage tactics captured the public imagination to the extent that they inspired an entire genre of spy films in which intelligence operatives attempt to outmaneuver each other through deception and manipulation.

In the post-Cold War era, disinformation research started proliferating again in the 2010s, partly due to the emergence of social media. However, the field gained a new set of meanings. For instance, in security studies, disinformation is a war tool that has become part of what is now known as "hybrid warfare," a military approach that integrates asymmetrical tactics, including information warfare, cyber-attacks, and political subversion.[11] It employs a combination of military force, gray-zone interventions like cyber-attacks, and non-military tactics, such as economic pressure and demonstrations, that can effectively paralyze governments.

From an international relations perspective, disinformation is seen as foreign interference in domestic issues by meddling in the information space.

> Foreign interference in the information space, often carried out as part of a broader hybrid operation, can be understood as coercive and deceptive efforts to disrupt the free formation and expression of individuals' political will by a foreign state actor or its agents.[12]

State actors use several tactics to sway the public opinion of another country to support or oppose policy agendas while avoiding a full-scale military confrontation. Such campaigns include legitimate tactics, like diplomatic communication. Still, they can also use covert tactics, including discrediting political opponents, spreading rumors, creating turmoil within a country, and employing media manipulation that is known to shape international opinion.[13]

Within the European Union's hybrid threats framework,[14] disinformation is defined as a threat that can destabilize the economic and social domains by catalyzing cascading effects meant to undermine democratic governance and influence decision-making processes. The potential impact of disinformation increases as digital technologies, including social media and AI, increase its

rapid dissemination and reach. The European Commission distinguishes influence operations when it involves sustained coordination.[15] When campaigns are orchestrated, they can be described as influence operations, "coordinated efforts by domestic or foreign actors to influence a target audience using a range of deceptive means, including suppressing independent information sources in combination with disinformation."[16] In 2022, Sweden launched the Psychological Defence Agency, in charge of fostering society's resilience to the media manipulation campaigns that aim to destabilize Sweden by hindering its democratic governance and affecting its social cohesion. Similar initiatives focus on fostering social resilience, protecting society's capacity and willingness to participate in a democratic society, and maintaining its capacity to receive and act upon reliable information.

Disinformation in Domestic Politics and Authoritarianism

The term *fake news* gained prominence when, in 2015, then-candidate Donald Trump used it to delegitimize news coverage he did not like.[17] Since then, one of the growing concerns for democratic governments is how disinformation has been used to win elections. Some politicians have been known to manipulate the electorate by spreading false information about their opponents to tarnish' their reputations.[18] One recent example involves the revelation that the Sweden Democrats, a far-right party in Sweden, has been using anonymous social media accounts to spread disinformation and troll political opponents. Their "troll factory" was used to spread hate speech online and perform character attacks on its political opponents.[19] However, of course, the use of social bots to circulate polarizing narratives is not limited to Sweden: using political operatives to depress voter turnout by starting rumors or using novel digital tools, like deepfakes, to create or amplify scandals has existed for quite some time.[20]

What is worse is that authoritarians are starting to turn the concept of disinformation on its head by using it back against legitimate journalists and dissenting voices.[21] By accusing journalists of delivering fake news and critics of being disinformation agents, an authoritarian can decry every inquiry as a witch hunt and every critical report as a political smear job. Recent examples worldwide show that the term disinformation can be weaponized against legitimate journalists, using anti-disinformation laws to discredit and persecute journalists and activists.[22] Authoritarians can declare themselves victims, taking the moral high ground and accusing dissidents of being purveyors of disinformation. Politicians, from Donald Trump in the United States to Jair Bolsonaro in Brazil, have weaponized the term *fake news* to discredit journalists as malignant, silence their voices, and deflect any source of criticism.[23] This tactic, which co-opts the disinformation term for the authoritarian's advantage, remains widespread in polarized societies. It shows the risks of undermining democratic freedoms when anti-democratic laws rolling back press protections are issued under the pretense of countering disinformation.

Numerous examples of labeling dissidents and critics as fake news and disinformation agents exist. Reporters Without Borders (RSF) argued that Kazakhstan's law penalizing "fake news" aims to obstruct the work of independent journalists and lead to a new form of censorship.[24] In Tunisia, a new law that ostensibly criminalizes the spreading of fake news can be used to prosecute any electronic communication deemed to be false.[25] In Turkey, disinformation laws can lead to the prosecution of journalists accused of disseminating false information.[26] These laws, which ostensibly protect against disinformation, seek a chilling effect on free speech by equating critical journalism with disinformation and can be used to block journalists' access and restrict independent news sites.

Corporate Disinformation

Whereas disinformation often applies to politicians and state actors, they are not the only ones who wish to cover up misdeeds by manipulating the informational space to their benefit. Corporations are equally skillful in shaping public perception to support their brands and protect their vested economic interests by using creative accounting and misleading reports to challenge regulation and conceal malpractice.[27] For example, tobacco companies have a long history of using disinformation to avoid regulation.[28] For decades, they funded research to cast doubt on the link between smoking and cancer, obfuscate the effects of tobacco on health, and lobbied against public health initiatives aiming to delay or block regulation to protect public health.

Another example can be traced back to the 2010 Deepwater Horizon oil spill, in which disinformation was employed to protect corporate interests and image in the context of an environmental scandal.[29] BP, the company responsible for the spill, used a media tour to downplay the extent of the damage and the amount of oil being spilled while attempting to shift the blame onto other parties involved in the incident.[30] BP's narrative aimed to avoid responsibility and mitigate the company's financial and reputational damage despite the spill's environmental and social impact.

In addition, the spread of vaccine misinformation during the COVID-19 pandemic shows that commercial interests exploited the public's anxiety by disseminating misinformation to promote the sale of fraudulent miracle cures.[31] The surge in online sales of fake treatments and remedies preyed upon the fears and desperation of many individuals seeking relief during a crisis. These deceptive products included unproven remedies marketed by individuals claiming to be part of the "alternative health" industry.

Disinformation: An Overview of the Current Definitions

Given its use in multiple fields, disinformation has fragmented meanings that are only sometimes coherent or compatible. One standard practice to address opacity in academic research, and prevent confusion about terms whose

understanding is unclear, is to start scientific reports by defining the key concepts and reviewing the literature to establish what we know about them.

Luciano Floridi, a philosopher working on the nature of information, proposed one of the earliest and most influential definitions of disinformation. Floridi distinguishes two types of misleading information: misinformation is "well-formed and meaningful data (i.e., semantic content) that is false," and disinformation, in turn, is "misinformation purposefully conveyed to mislead the receiver into believing that it is information."[32] Even though both types of information contain falsehoods, for Floridi, the main difference between them is the *intentionality* to deceive the receiver into believing misinformation is information.

The crucial element in Floridi's definition is making false information pass as if it were true, making disinformation akin to a lie. Based on this definition, current efforts to counter disinformation focus on correcting falsehoods via fact-checking. Other efforts focus on revealing how a falsehood masquerades as truth, for example, by using the aesthetics of journalism to spread propaganda and misleading information under the guise of news, a practice known as fake news. Floridi's interpretation of mis/disinformation, centered on intentionality, remains important today, becoming the dominant distinction of most existing definitions. However, it has several practical limitations, including the fact that it is often impossible to assess intentionality online and that disinformation does not always rely on *false* information.

Rather than focusing on whether a statement is true or false, Don Fallis, a professor of philosophy and computer sciences, continued theorizing disinformation as a particular form of deception, using the word *misleading* twice when defining the term: disinformation is "misleading information that has the function of misleading."[33] For Fallis, this repetition is more than a literary device; instead, it emphasizes a dual understanding of how information becomes misleading: it can be both the quality of information and its purpose or function.

The first part of Fallis' definition breaks down the truth-vs.-falsehood dichotomy by showing that misleading information is not necessarily false information. For example, a company can claim rapid growth by showing the number of monthly new subscriptions, but the claim would be misleading if almost none of the new clients renewed their subscriptions after their free trial. The chart may be factual but misleading because the firm is not growing nearly as fast as claimed. Therefore, investors always compare growth rates with churn rates, which is the rate at which clients leave the company. Consequently, cherry-picking facts leads the audience to arrive at wrong conclusions, which means that information can be simultaneously factual and misleading. This example shows that disinformation is more complex than just stating a false or inaccurate statement; instead, it can include truths and half-truths.

Fallis' second point is that disinformation has the function of misleading: "It is not sufficient that the information is misleading; it depends on how the

information came to be misleading."[34] The distinction matters because—as mentioned earlier—disinformation is not necessarily a lie. While a liar aims to mislead the receiver and conceal the truth, there are other forms of disinformation in which deceiving the audience is not the primary goal. For example, ad fraud aims to systematically benefit from loopholes in the digital advertising system by siphoning advertising revenue from its purpose. In this case, misleading information (clicks from bots pretending to be consumers) is used to cheat the system, pretending that illegitimate clicks are traces of human activity. Think of influencers deploying fake followers to inflate their metrics: they use bot-inflated metrics to exploit the automated programmatic market, cheating the system without lying to any specific person.

While Fallis' definition is a step forward, the fact that it uses the word misleading twice makes its use confusing for daily use. In turn, the following definitions have evolved to incorporate two similar but not identical concepts: *accuracy* (truth-falsehood) and *intent* (benign-malign). In terms of accuracy, the current understanding focuses on falsehoods, and in terms of intent, misinformation is benign, while disinformation is malign.

Although much simpler to use, this distinction fails to capture Fallis' nuance, limiting disinformation as a product of intent. An attempt to operationalize this interpretation is the definition of disinformation for the European Union, which distinguishes intentionality as attempts to use falsehoods for *harm* or *profit*. "The concept of disinformation refers to false, inaccurate or misleading information designed, presented and promoted intentionally to cause public harm or make a profit."[35] In other words, the EU definition has two main conditions: informational inaccuracy and a twofold purpose. To illustrate, under the EU definition, if a politician cherry-picks facts to provoke mass anxiety, polarize society, and amass political power, it is classified as disinformation.[36] If a corporation uses advertising to cover up an environmental disaster, it can be classified as disinformation.[37] If an influencer uses hate speech to incite resentment against minorities and profit from online popularity, it can be classified as disinformation.[38]

The tech companies behind most digital platforms have developed definitions emphasizing the misuse of digital technologies. For Google, disinformation is the deliberate intention to mislead by exploiting digital technologies, "We refer to these deliberate efforts to deceive and mislead using the speed, scale, and technologies of the open web as disinformation."[39] Meta addresses only misinformation, not disinformation, and limits it to its imminent potential to produce physical harm. In other words, the company promises to remove content "where it is likely to contribute to the risk of imminent physical harm directly."[40] There are many types of harm, but Meta narrows its understanding of physical, significantly constraining the kind of content it addresses under its misinformation rules.

While the recurring topics of falsehood and malignancy can be found in most definitions, some researchers broadened the focus. For example, a report on gendered disinformation integrates a new dimension: "falsity,

malign intent, and *coordination*."[41] The requirement for coordination is not part of standard definitions, even though it should be when the term disinformation is usually paired with the word *campaign* to emphasize a sustained and orchestrated effort.[42] Indeed, a central element of disinformation is orchestrated and coordinated efforts designed to attack perceived adversaries rather than one-off statements. For instance, disinformation campaigns use bots to amplify their messages through social media, a phenomenon known as "coordinated inauthentic behavior."

The issue of coordination in disinformation requires further research to understand the differences between the central leadership of a state actor and loosely organized users who coordinate their efforts by copying each other. A state actor coordinating a media manipulation campaign orchestrates actions differently than when mobs coordinate actions on social media. One example is when groups of gaming fans organized a campaign on a social media forum to harass a female journalist in an event that became known as "Gamergate."[43] This incident included a highly publicized online harassment campaign that targeted women in the video game industry, particularly those who were vocal about issues related to sexism, misogyny, and gender equality in gaming.

Another aspect not consistently recognized in the definitions is the importance of *narratives* in advancing agendas. Bennet and Livingston define disinformation as "intentional falsehoods or distortions, often spread as news, to advance political goals such as discrediting opponents, disrupting policy debates, influencing voters, inflaming existing social conflicts, or creating a general backdrop of confusion and informational paralysis."[44] The authors examine the rise of disinformation as an outcome of the confluence of political strategists, corporate interests, and public policies prioritizing private interests over the public. They emphasize "drawing on a broader examination of decades of capture and erosion of governing institutions by wealthy interests and aligned political elites, unable to sell their actual agendas to the public without increasing levels of disinformation."[45] The definition directs attention to the decades-long effort to insert partisan viewpoints and use lobbying to protect corporate interests. Under this view, disinformation becomes a symptom rather than a cause to understand how the public loses trust in the media and democratic institutions.[46]

Finally, while disinformation is the term most broadly used in public policy and journalist circles, not everyone agrees that disinformation is precise enough to be a helpful concept. Chadwick and Stanyer argued that the current distinctions among concepts such as disinformation, misinformation, and misperceptions are unclear.[47] They propose that all these concepts could be classified as manifestations of deception, which would become a higher-order concept. However, disinformation is well established as a research stream, public policy documents, and popular culture. Therefore, it appears reasonable to conceptualize the disinformation term fully by laying out its multiple interpretations and limitations.

Conceptualizing Disinformation

Whereas conceptually robust, the previous definitions have some practical limitations in the context of social media, an environment that conceals those who seed disinformation and turbocharges those who amplify its reach. Specifically, when applied in practice, they overemphasize *accuracy* even though disinformation can include truths and half-truths; they rely on malign *intentionality* even though asserting it is impractical or even impossible on social media. Finally, the previous definitions focus almost entirely on *messaging* and assessing specific claims at the expense of studying the systemic causes that make disinformation thrive on social media.

To explain further, the first limitation is that most existing definitions rely primarily on the *falsity* of the statements, overemphasizing whether statements are factual or falsehoods. An overemphasis on falsity overlooks that most disinformation campaigns blend selective truths and lies with value judgments to create a myth that cannot be proved or disproved. The second limitation is that asserting whether a specific actor has malign intent is impractical or even impossible, especially in social media settings where belief and pretense have no meaningful distinction. After all, most actors spreading disinformation take precautions to hide their tracks. The third limitation is that overemphasizing messaging can detract from studying the systemic causes that allow disinformation to circulate quickly on social media. These three limitations are explored in more detail in the following paragraphs.

From Falsehoods-Versus-Truth Dichotomies to Adversarial Narrative Campaigns

Disinformation does not always rely on false statements. As Nicholas O'Shaughnessy, a professor of political communication, reminds us, "Disinformation does not have to be a complete lie; it can be largely or partly true and often is to make it more credible."[48] Indeed, disinformation often blends truths and selective truths, weaving them into myths or "pseudo-realities" that are highly compelling for the people consuming and circulating them.[49]

In culture wars, participants are willing to believe and spread conspiracy theories that support the in-group ideas while attacking the outgroup ideas. Like QAnon, a conspiracy theory that argues a satanic cabal controls the world, some conspiracies are overly popular in partisan circles because the people spreading them find the narrative is an attack vector against their perceived opponents and makes their preferred candidate a hero against the establishment. As a result, belief in conspiracy theories requires as much *self*-delusion as *other delusions*. For O'Shaughnessy, the victim of disinformation is neither naïve nor a victim. Instead, disinformation can be described as a myth that blends truth with a fantasy into an outcome the audience wants to believe. It "exists to confirm a delusional view of its fabricators as well as to persuade others, which is sometimes a secondary consideration."[50]

Understanding that disinformation can be part of a person's identity project can help understand why correcting false statements can backfire.[51] The backfire effect is when fact-checking efforts—one of the most common strategies to counter disinformation[52]—can instead strengthen the belief it is intended to dispel. While fact-checking is the verification process that ensures the accuracy of news articles, authoritative corrections can have unintended effects, hardening beliefs and spreading misinformation even further to new audiences.[53] Indeed, disinformation resists fact-checking because "identity cannot be proven wrong;"[54] in other words, one can fact-check news articles but not beliefs.

Here, the distinction between Floridi and Fallis's definitions and the current ones becomes clear. Whereas early definitions examined specific truth claims or statements that could be classified as factual or misleading, contemporary definitions focus more on the whole narrative, including myths, factual statements, and accompanying audiovisuals to tell a whole story with heroes and villains; hence, a narrative.

True-false dichotomies can be impractical when disinformation mixes truths, as it often does, to make a misleading claim more credible. Instead, current definitions suggest focusing on narratives that display *adversarial dynamics*.[55] The reason is that a disinformation *campaign* implies a concerted effort against a perceived opponent. This distinction led the Global Disinformation Index (GDI) to propose that disinformation can be studied as such.[56] Researchers at GDI argued that disinformation operates through "adversarial narrative conflicts," defined as "intentionally distributed narratives without a required chronology or sequence of content ('artifacts'), and which seek to enrage and divide internet users."[57] This narrative conflict approach emphasizes that the core of disinformation is not necessarily to hide facts but to spin discussions that fan conflict and thrive in controversy. As a result, disinformation weaves a fantasy that proponents circulate to attack their perceived opponents and address their grievances to the point that disinformation thrives in culture wars.

Determining Intentionality Online Can Be Impractical, If Not Impossible

Whereas the current definitions focus on assessing "malign intent,"[58] the sources of disinformation usually take precautions to hide their tracks and intentions. After all, disinformation is meant to deceive. When seeding disinformation online, "actors feed strategic deceptions onto social media, hiding sources and intent."[59] This means the disinformation process is shrouded by obfuscation acts that hide who are the actors seeding disinformation and their intentions. One example is how difficult it is to trace memes and cultural items that repurpose images, videos, and phrases by inserting a humorous or satirical message to make it go viral online. The memes used to disseminate disinformation originate in obscure Internet forums, like 4chan, where it can be challenging to find a clear author.[60] This is a severe complication because if

experts using sophisticated digital tools struggle to find the specific origins of memes, individuals staring at their screens may find it impossible.[61]

Another disadvantage of relying on *malign intent* for conceptualizing disinformation is that the only place where we can reliably determine intent is inside the court of law, where a jury of peers considers carefully selected evidence to establish intent. Outside of a court of law, especially on social media, determining who has malignant intentions is an exercise in futility. Establishing malice online involves asserting assumptions and *ethical judgments* involving subjective beliefs and values. In practice, anyone can assert that their values are ethically superior and claim that the opponent's actions are malignant. In other words, declaring malign intent is a value judgment subject to being co-opted: anyone can weaponize the disinformation label by simply asserting (not proving) malign intent.

Conspiracy theories are well-known for establishing malign intent without proof. Indeed, the only requirement for a conspiracy theory is to establish that a government or organization has malign intent behind its actions. A study of how conspiracy theories gain new adepts found that "disinformation thrives not despite raucous controversies with real or imagined enemies but as a result of them because controversies provide fertile ground for never-ending argumentative disputes."[62] Indeed, conspiracy theorists use a combination of *purity tests* and *ulterior motives* to assert that their enemies have malign intent, hence justifying the existence of a conspiracy in which group insiders are under siege by evil outsiders. For instance, flat Earthers turned the burden of proof backward, "debunking" scientific evidence by attacking the legitimacy of the US space agency NASA, arguing it is lying to people on behalf of the elite.[63]

This way, conspiracy theories distinguish between an in-group, deemed pure, and an outgroup, which must necessarily be corrupt. Therefore, purity tests have a dual purpose: for the inside group, the tests continuously assess whether followers are loyal, pure, and dedicated enough; for outsiders, purity tests are designed to fail, showing that critics lack moral character and cannot be trusted. The critics of a conspiracy theory are assigned ulterior motives and hidden agendas that motivate and justify malign intent. For example, if a scientist receives a grant from a pharmaceutical company, then the researcher's output can be discredited by an ulterior motive: money. Conspiracy theorists systematically disregard critics as having ulterior motives and failing purity tests, hence branding any critic as a disinformation agent.

The System that Amplifies Disinformation Online

Current definitions often underplay the systemic or structural reasons why disinformation circulates rapidly on social media. One of these reasons is financial since disinformation likely circulates on digital platforms when it generates revenue.[64] The current monetization rules on digital platforms privilege engagement metrics by paying for impressions and clicks. As content creators aim to maximize their metrics, they learn that the content most likely to go viral is

controversial and appeals to strong positive or negative emotions.[65] In some cases, "content farms" harvest and monetize clicks through *ragebait*, which is the practice of making users angry or anxious enough about the post to click on it. This business model nudges content creators to appeal to fringe communities with incendiary content to harvest impressions and clicks.

While there is a growing recognition that the digital infrastructures of social media, like the algorithms or digital cookies, are instrumental in disseminating disinformation,[66] these technologies are part of a business model that makes the circulation of disinformation more likely, not less.[67] In other words, one could argue that disinformation circulates on social media *because* it is profitable. For example, whereas Meta claims that it makes all reasonable efforts to eliminate content that creates the imminent risk of physical harm,[68] it also gets to keep advertising revenue from networks of fake accounts and disinformation campaigns.[69] Likewise, Alphabet has a policy to reduce the exposure of its Google Search and Ads platform to disinformation. Nevertheless, Alphabet also gets to keep the proceedings of disinformation campaigns in its advertising and search platforms.[70]

Moreover, the emergence of deepfakes, AI-enhanced tools that credibly mimic human conversation in text, image, and video formats, blur the lines between what is real and what is not. Synthetic content (i.e., AI-generated) and synthetic consumers (i.e., social bots featuring coordinated inauthentic behavior) have made it possible to post addictive conspiracy theories at a never-before-seen scale.[71] For example, social media creators use machine-generated text, images, and videos to post dozens, if not hundreds, of videos daily.

Ultimately, the digital infrastructures that incentivize algorithmic consumption and the business model of digital platforms and content creators form an explosive combination powering the rapid spread of online disinformation. The overwhelming emergence of synthetic content and semi-autonomous bots, collectively called Coordinated inauthentic behavior (CIB), creates conditions that make it difficult for people to distinguish what is real: the Internet is flooded with low-quality content; meanwhile, bots are continuing to abuse digital advertising platforms by committing ad fraud while also being used to amplify disinformation.

Disinformation Manifests through Multiple Tactics

The disinformation concept has become an umbrella term for multiple manifestations of deceptive practices, such as fake news, propaganda, media manipulation, and social bots. However, some of these terms are newly coined and lack a consistent meaning. To help people navigate the disinformation phenomenon, researchers have created operational tools, such as glossaries—Sessa's glossary,[72] Data & Society's "Lexicon of Lies,"[73] and multiple academic taxonomies mapping the tactics used in disinformation.[74] The following section introduces a non-exhaustive list of disinformation's most common tactics, primarily online.

Algorithmic disinformation. An algorithm is a set of mathematical rules or instructions computer programs use to complete a task. In digital platforms, search engines, and news websites, algorithms determine what content to show users.[75] They are designed to classify large amounts of data and optimize particular parameters, for instance, to maximize engagement. Consequently, algorithms are not unbiased and can be manipulated or gamed to push specific content to the top of search results or news feeds.[76] For example, if the desired outcome is that the user would click on a link, social media algorithms may prioritize anxiety-inducing content. To game the algorithm, digital marketers use various tactics, such as clickbait headlines and keyword stuffing, to enhance the discoverability of websites.[77] Disinformation agents can exploit the algorithms to boost their reach and exposure while ensuring their campaigns comply with the platform's rules, at least ostensibly.[78]

One case during the 2016 US presidential election included misinformation originating in the so-called "Macedonian social media campaign."[79] Researchers Hughes and Waismel-Manor tracked a disinformation campaign to a rather unexpected place: a small town in the Republic of Macedonia. To their surprise, the research team found that this operation was a business venture in which, as part of a course to learn how to monetize Facebook Ads, the students created several websites and social media pages to monetize political controversy. Money was the campaign's primary motive: "They first tried ads against both Trump and Clinton, finding that those against Clinton were more viral and generated more revenue."[80] Once on the website, the visitors were presented with articles that were often wholly false but designed to spread fear and outrage specific groups of voters, such as gun owners or evangelicals.[81] As a result, articles supporting Donald Trump and disparaging Hillary Clinton reached millions and generated significant advertising revenue.

Astroturfing. Grassroots activism is a form of social and political activism involving individuals working locally or from the ground up. In contrast to real grassroots, astroturfing is a deceiving campaign that manufactures the impression of overwhelming popular support for campaigns that appear to be anchored in spontaneous popularity but are, in reality, carefully crafted and orchestrated by special interest groups.[82] The term astroturf comes from a brand that sells artificial grass, so astroturfing implies that the popular campaign does not have actual, local support. Astroturfing gives the impression of widespread support by using paid actors or bots to create the illusion of overwhelming popularity.

One well-documented example of astroturfing is the tobacco industry's campaign to avoid industry regulations in the 1990s. The tobacco industry created a series of front organizations, including the "Get Government Off Our Backs" (GGOOB), designed to give the impression of a spontaneous movement of ordinary citizens concerned about their rights and freedoms.[83] In reality, GGOOB was funded and directed by the tobacco industry, which used it as a tool to defeat anti-smoking legislation. Alas, the campaign succeeded in delaying the implementation of smoking bans for years.

Social bots. *Bots* are computer programs that can perform digital tasks with partial or no human intervention. Technically known as inauthentic coordinated behavior,[84] several social media accounts can be managed centrally to give the impression of broad public support. With the rise of large language models (LLM), bots have become sophisticated enough to avoid automated detection and maintain simple conversations. A network of bots controlled by a single entity is a botnet. It can generate fake engagements, interact with other users, and flood social media with synthetic content in no time. Whereas organic content is made spontaneously by humans, synthetic content is created by machines simulating humans, often called social bots, who can post content, click on ads, and generate ad revenue. In addition, bots can also inflate the number of followers of social media influencers.

An example of a botnet involved in a disinformation campaign is the one operated by Russia's Internet Research Agency.[85] This botnet spread false information and propaganda during the 2016 US presidential election. The IRA used social media platforms to create fake accounts and amplify divisive messages, such as spreading conspiracy theories and giving the impression of overwhelming social support for candidate Trump.[86] According to the Mueller report, the IRA went as far as creating memes and even offline events, like real-world rallies that were attended by hundreds of people.[87] Eventually, the documentation surrounding the IRA operation gave researchers and journalists a glimpse of how foreign interference works.[88]

Conspiracy theories. A conspiracy theory is a belief that an event or situation results from a secret and often sinister plot by a group or organization that aims to create doubt in official narratives. A historically documented example of a conspiracy theory used as disinformation by a state actor is the forgery and dissemination of the "Protocols of the Elders of Zion."[89] This document was a fabrication supervised by Russian secret Police in the late 1890s to discredit liberalism and social change as a Jewish-inspired plot. This fraudulent text claimed to be evidence of a Jewish-led world conspiracy to dismantle all institutions to control the world. The Nazis used this document to justify their exterminatory program against Jews. Despite being thoroughly debunked, the document still circulates online as a form of anti-Semitism.[90]

Deepfakes. Deepfakes are computer-generated videos or images that superimpose a person's face onto someone else's body and paste together fragments of speech into a superimposed recording or speech. The outcome is a video or audio recording in which a person appears to be saying or doing something they did not say or do. The uses of deepfakes are predominantly disconcerting: they can be used to amplify controversies, fabricate scandals, or conduct character assassinations as a form of harassment against individuals, as with deepfake videos that superimposed the features and likenesses of the famous singer Tailor Swift into a pornographic video.[91]

While we still do not have a milestone case in which deepfakes have been used at the core of a disinformation campaign, some troubling examples are emerging. For instance, in January 2024, a robocall mimicking the voice of US President Joe Biden encouraged voters not to vote during the New

Hampshire primary.[92] This fabrication was created using AI technology to patch together old recordings into a new message designed to confuse voters and depress voter turnout.

Echo chamber. An echo chamber is a media phenomenon where participants encounter beliefs and opinions reinforcing existing beliefs and moving the group into a more extreme position. It starts with a situation in which people interact with only people with similar worldviews and receive content in their feeds that reinforces their values, leading to a lack of diverse perspectives.[93] People continue to listen to sources they already agree with because they provide a sense of validation and comfort and because the algorithm feeds them content that the user is known to like. Echo chambers can become a knowledge ecosystem where disinformation can circulate without rebuttals, leading to a distorted view of reality.

One example of an echo chamber in conservative media was the Rush Limbaugh radio talk show.[94] For over three decades, this talk show resonated with its conservative audience, delivering monologues on current events, politics, and social issues, often taking a solid right-wing stance. The program created its vocabulary and seldom invited dissenting voices or opposing viewpoints, proving to be an early example of a space where alternative perspectives are unwelcome and actively discouraged.

Fake news. Fake news has emerged as the cornerstone of disinformation in the popular imagination.[95] Fake news is closely related to disinformation but refers explicitly to misleading information presented in news or documentary formats.[96] It relates to misleading or fabricated news spread through legacy news media as well as to illegitimate news outlets that copy the aesthetics of journalism without its best practices.

During the US 2016 presidential elections, the headline "Pope Francis Shocks World, Endorses Donald Trump for President, Releases Statement" became an example of fake news.[97] According to a CNBC report, this fabricated story was published by an obscure satire website called WTOE 5 News before being picked up by mainstream media outlets and racking up 960,000 Facebook engagements. Whereas the originating website marked the item as satire, the false endorsement was shared widely on social media. Therefore, this is one of the earliest examples of a fake news story designed for profit in the programmatic advertising ecosystem. Unfortunately, the term "fake news" also has been weaponized against legitimate journalists and news organizations, who are accused of spreading fake news by those who disagree with their reporting.

Rumors and hoaxes. A rumor is a story that circulates without verification or confirmation. A hoax is a deliberately fabricated story or information intended to deceive or mislead people. Rumors and hoaxes are often used in disinformation to create doubt and confusion in people's minds, making it difficult to distinguish between true and false.

A well-documented rumor that ended up being a hoax is the "War of the Worlds" radio broadcast. In 1938, Orson Welles and his *Mercury Theatre on the Air* company broadcasted a radio adaptation of H.G. Wells' novel

"War of the Worlds" in their Halloween episode. Distributed in the form of a radio news bulletin on CBS, it led some listeners to believe that the play was actual news. The broadcast caused widespread panic, with listeners convinced that a Martian invasion was underway. However, it was later revealed that the panic was exaggerated, and only very few people considered the broadcast accurate. The "War of the Worlds" radio broadcast remains a classic example of how rumors and hoaxes can quickly spread when framed as news reports.[98]

Trolling. Trolling refers to provocative behavior in online spaces, especially forums and comment sections under user-generated content.[99] Trolls often use offensive language and personal attacks to incite reactions from others. An example of trolling could be an account attacking someone to elicit anger and frustration. Whereas a troll is an individual account, a troll farm is a coordinated effort by humans or bots to bully dissent into silence. Troll farms are often paid for by state actors, political parties, or other organizations seeking to muddle public discourse and bully critics.

One clear case of how trolling can become a disinformation tool is GamerGate.[100] This event in the video game industry included a harassment campaign that started as a reaction to perceived ethical breaches in video game journalism. However, critical voices shifted into coordinated harassment against female journalists in the industry. Whereas supporters of GamerGate claimed that they were fighting against political correctness and corruption, their actions, such as doxxing and threatening individuals, especially women, manifested as a coordinated effort to silence them.[101]

Concluding Remarks

Disinformation is a polysemic concept that has become increasingly relevant in today's digital age. This chapter reviewed several definitions, demonstrating how most converge on *falsity* and *malignant intentions*. However, as the chapter argues these characteristics are insufficient to conceptualize disinformation in practice. "Falsity" is insufficient because disinformation often deploys truths and half-truths as part of a deception, making the narrative more credible. Likewise, conceptualizing disinformation per "malignant intentions" has limitations because determining who has them requires value judgments, which are subjective and can be co-opted.

Disinformation has multiple manifestations, like fake news and conspiracy theories, that do not always rely on false information. Instead, disinformation often includes carefully selected facts and weaves seeds of truth into the accounts, which the narrative mobilizes to flame turmoil and polarization by tapping into identity conflicts and inter-group controversies.[102] Therefore, some critical elements of disinformation include the following: strategic deceptions,[103] the spin of adversarial narrative conflicts,[104] its reliance on sustained coordination,[105] and a misleading function.[106] Stemming from the practical limitations, the following working definition can be considered productive:

> Disinformation is an adversarial campaign that weaponizes multiple rhetorical strategies and forms of knowing—including not only falsehoods but also truths, half-truths, and value-laden judgments—to exploit and amplify identity-driven controversies.[107]

Specifically, the definition emphasizes that disinformation can be considered *adversarial*,[108] meaning it has a target, whether an individual, a group, an institution, or a system, and that it is often implemented as part of an orchestrated and sustained campaign and thus involves *coordination*.[109]

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3 Mapping the Field of Disinformation Research

Disinformation is an increasingly important research domain that spans multiple disciplines, from military studies to health policy, media, and political communication research. While it is not a consolidated field, it can be understood as a "*domain theory*,"[1] a substantial body of academic knowledge that can help us understand an empirical phenomenon. It has also become a term used in popular culture in which disinformation includes conspiracy theories and fake news. Therefore, disinformation research does not only study a namesake phenomenon but also multiple tactics that manifest as epistemically distinct practices. The academic research stream aims to understand the empirical phenomenon and generate evidence-based policies that protect society while safeguarding democratic freedoms.

Multiple institutions across the globe study disinformation. One of them is the Shorenstein Center on Media, Politics, and Public Policy at Harvard University,[2] which defines disinformation research as an academic field that studies "the spread, impacts, and potential solutions to bad and misleading information in society," including "the causes of misinformation, how it spreads through online and offline channels, why people are susceptible to believing bad information, and successful strategies for mitigating its impact." Accordingly, disinformation research examines disinformation by focusing on its manifestations and designing counterstrategies. It also considers the demand side by exploring why disinformation circulates rapidly on social media and what factors make people vulnerable to consuming and believing it.

The number of academic publications related to disinformation research is soaring, from about a hundred papers per year a decade ago to several thousand peer-reviewed publications just in 2024. The graph in Figure 3.1 shows a rapid increase, reaching thousands of peer-reviewed publications in journals indexed in the Scopus database, a leading index published by the academic publisher Elsevier. By 2023, 847 publications referred to misinformation or disinformation in the title and 3,127 in the article's description. Notably, because these publications are limited to those explicitly mentioning "disinformation" or "misinformation" in their title or abstract,[3] they offer only a glimpse of growth within the field. For instance, publications on conspiracy theories and fake news are not part of the corpus if they do not explicitly use

DOI: 10.4324/9781003506676-3

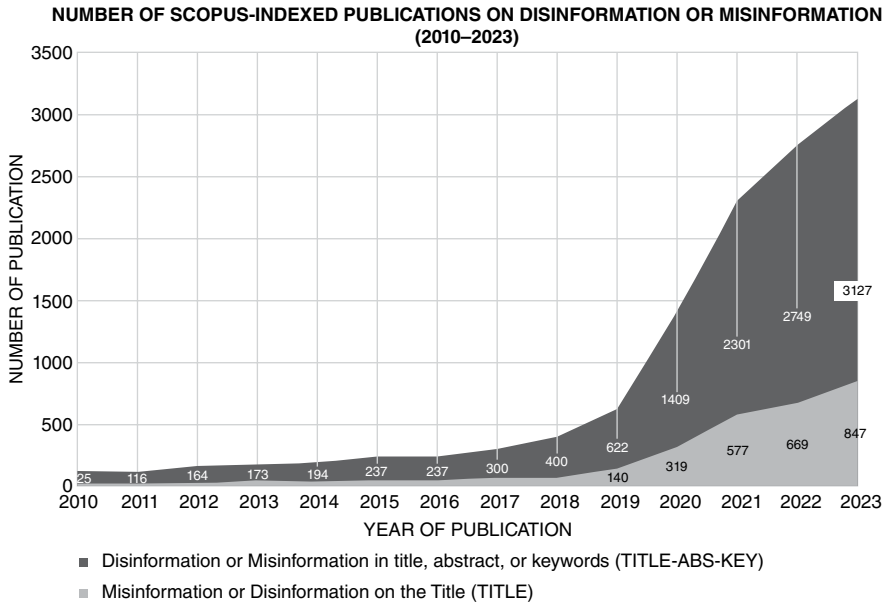

Figure 3.1 Number of academic publications on disinformation or misinformation in Scopus-indexed publications.

the disinformation/misinformation term, even though the nature of the studies is within the scope of the research stream.

While the sheer number of studies demonstrates its growing relevance, the popularity of the disinformation research stream leads to fragmentation. Making sense of the findings and implications is increasingly challenging when researchers operate in fields that traditionally do not communicate, which limits the opportunity to build upon each other's work. Even though several literature reviews already exist, a gap to improve cohesion remains pertinent. This chapter consults the academic databases SCOPUS and Web of Science (WoS) to identify the relevant literature, for example, by including only peer-reviewed sources (e.g., excluding preprints hosted at SSRN or arXiv). Ultimately, its objective is to contribute to disinformation research by providing an overview of the field's conceptual constituents.

At first glance, the findings reveal an apparent multidisciplinary interest in the topic. Articles with the words "disinformation" or "misinformation" in the title are emerging in multiple disciplines. The distribution of research papers is as follows: 34% in social sciences (1,686), 12% in medicine (613), 10% in computer science (528), 9% in arts and humanities, 9% in psychology (443), and the remaining 26% in other disciplines.[4]

The database was analyzed using detailed bibliometric analysis to understand the discipline's most significant topics and issues.[5] However, systematic literature reviews face limitations when dealing with a field characterized by

highly heterogeneous terminology and contextual ambiguity like the one in disinformation. When multiple fields conduct research with a polysemic term (see Chapter 2), a purely bibliometric approach to a literature review would be insufficient to establish the linkages between existing research streams because the same term has multiple semantic meanings. To address this issue, Sprong et al. (2021) recommend a combination of bibliometrics with an interpretive analysis.[6] The bibliometric mapping generates clusters representing research streams mapped in a two-dimensional map. However, the map cannot be interpreted without reviewing the content of representative papers within each cluster, reading reviews within each stream, and identifying exemplary papers. This analysis can help make sense of a fragmented field in which researchers use similar words with multiple meanings.

Figure 3.2 represents a semantic network in the disinformation research field. It combines visual text mining methods with network analysis of the papers' metadata.[7] The visualization illustrates the co-occurrence of nodes within each document as an interconnected network of concepts, where the nodes are the keywords, and the links are their co-occurrences. If a word appears often, the node gains prominence, and the link becomes stronger as pairs of words occur in multiple articles over similar combinations.[8]

The resulting semantic networks identify relationships among concepts and delineate six distinct yet interrelated clusters—the groups that tend to share high similarity in conceptual understanding and terminology. Since semantic mapping is insufficient for polysemic terms, the author read and interpreted representative research papers of each stream to develop fully fledged descriptions that characterize each cluster.

The first cluster (C1) in the lower part of Figure 3.2 groups studies related to "COVID-19," "vaccine hesitancy," and "vaccination." The cluster is characterized by concepts connected to "public health," such as "prevention" and "acceptance" (as in vaccine acceptance), as well as words representing demographic segments, like "parents" and "women." The cluster also contains terms specific to health professionals, such as "infodemic," suggesting that it represents research linking disinformation with public health and medical research. Therefore, the cluster is labeled *health-related misinformation*.[9]

Moving counterclockwise, the second cluster (C2) encompasses terms related to "social media" and has the names of specific social media platforms, like "Twitter" and "Facebook." The cluster also includes technical terms and digital tools used to analyze social media and detect the propagation of misinformation online, such as "machine learning," "sentiment analysis," and "fake news detection." The presence of terms related to digitally enhanced methods to propagate disinformation (e.g., "bots") suggests that the cluster involves computer sciences. Therefore, the cluster can be described as the *technological side of misinformation on digital platforms*.

The third cluster (C3) is more associated with "disinformation" than "misinformation." As described in Chapter 2, the distinction between these two terms conveys the idea of malign intent in spreading misleading content. Several co-occurring terms in this cluster are those related to media studies and journalism,

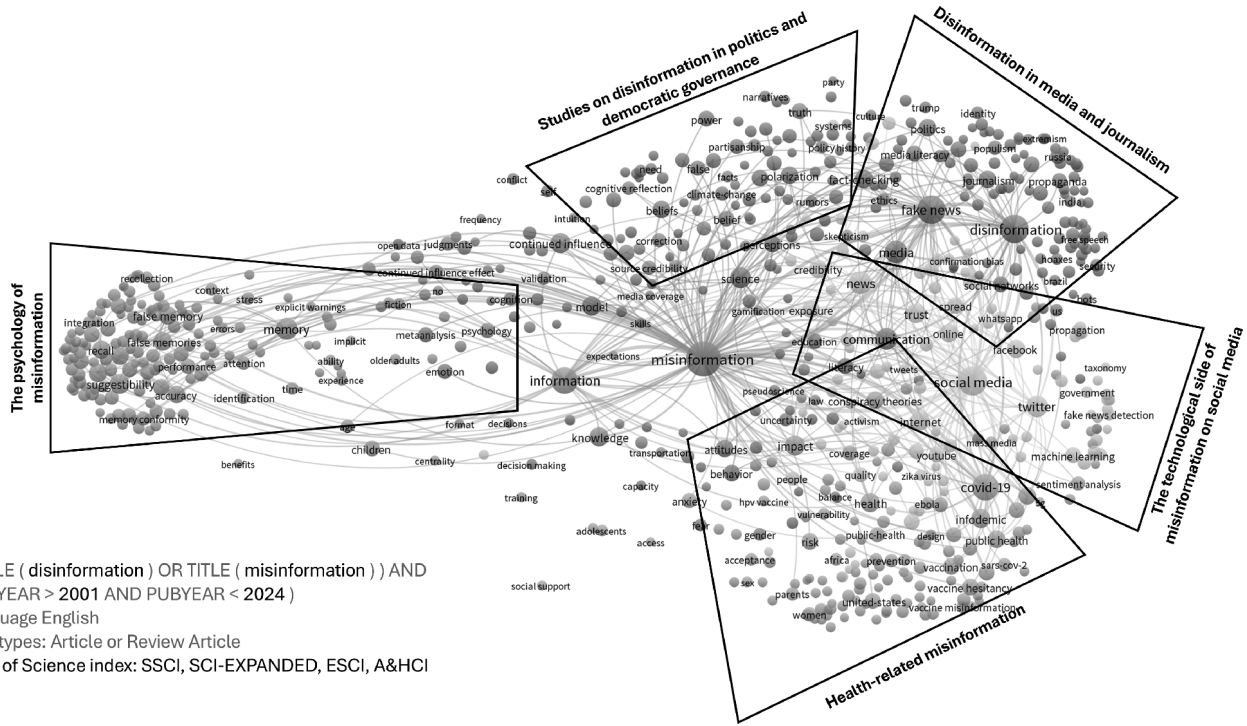

Figure 3.2 Clusters of topics on disinformation in WoS-indexed academic publications.

including the keywords "journalism," "media," and "communication." The terms suggest that research on this topic is related to media manipulation and using fake news to exploit the media ecosystem. In addition, some keywords within this cluster convey an idea of research on the consequences disinformation has on society, including "extremism" and "radicalization," partly because they occur along keywords like "security." Other keywords like "free speech" and "identity" suggest research on the culture wars that have become so prominent in partisan politics. The studies on this cluster predominantly address disinformation and its effects on media, and thus, they could be labeled as *studies on disinformation in media and journalism*.

The fourth cluster (C4) concerns democratic governance and political communication issues. This interpretation is supported by the inclusion of keywords such as "policy," "partisanship," and "polarization," indicating a focus on topics related to safeguarding elections and the principles of democracy. Additionally, the cluster features keywords associated with political issues, including "perceptions," "beliefs," and topical issues such as "climate change." The presence of these terms suggests that the cluster is part of political sciences and understands disinformation to be integral to political work. Therefore, the cluster could be labeled as *studies on disinformation in democratic governance*.

The final two clusters (C5 and C6) are closely linked to psychology and behavioral research. The semantic map places them at a longer distance from others because they refer to misinformation the way it was understood in the psychology field decades ago. The cluster at the far left of Figure 3.2 represents a group of studies examining misinformation as a phenomenon related to failures to recall memories. During the 1970s, academic research on the psychology of memory was interested in the susceptibility of the human brain to create false memories, a phenomenon called misinformation.[10] For example, when a witness recalls the details of a car accident, several recollections can be inaccurate; perhaps the witness remembers the car to be red when it was blue or wrongly recalls the driver's facial features. These studies were used to understand why humans tend to have slightly different recollections of the same events. Of course, the dominant interpretation of misinformation is no longer associated with memory. However, behavioral researchers build upon previous insights from research on the "misinformation effect" to understand why people believe false information, mainly why people think and share fake news.[11] Therefore, a label could be as follows: *studies on the psychology of misinformation and fake news*.

The semantic network in Figure 3.2 can be understood as a map of disinformation research that can convey a sense of order and coherence in a diverse field where multiple research teams simultaneously examine the same disinformation phenomenon. Additionally, the bibliographical analysis allows the study of the metadata to identify the most relevant publishing outlets in the fields in each cluster. The most prolific journals include the *Harvard Kennedy School of Misinformation Review*, the *Journal of Medical Internet Research, New Media and Society, Social Media and Society*, and the *International Journal of Communication*. Figure 3.3 here presents a

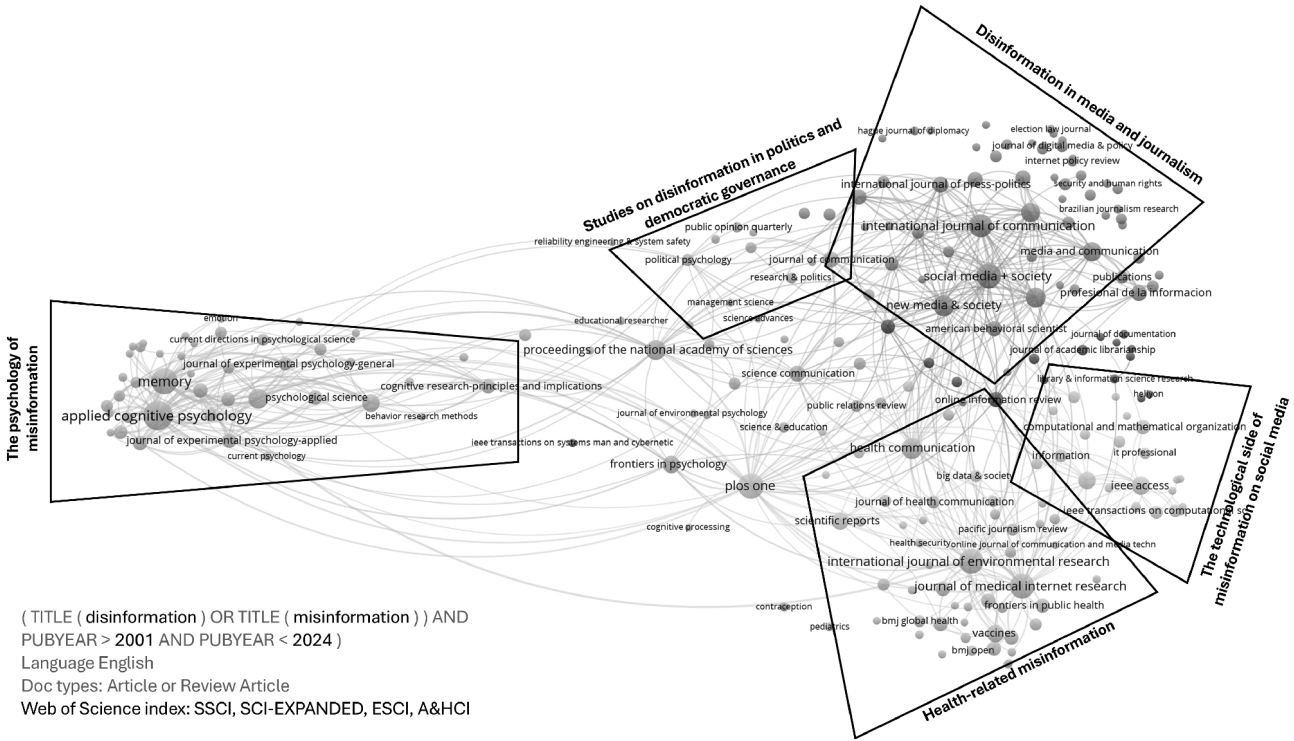

Figure 3.3 Bibliographic pairing of journals in WoS-indexed academic publications.

network of journals from which it is possible to extrapolate the disciplines interested in disinformation.[12]

One limitation of relying exclusively on bibliometric analysis is that it assumes that a concept means the same thing in multiple fields.[13] Therefore, an interpretative analysis complements the semantic mapping by exploring the types of research contributions and findings in each research stream. Rather than providing an exhaustive review of each cluster, the following paragraphs aim to help the reader navigate a heterogeneous field, becoming familiar with the most relevant research topics and contributions by assuming a holistic view of the field.

Mapping Disinformation Research

Disinformation and Health Research

Researchers in this field focus on the effects of disinformation in hindering efforts to establish public health policies. Whereas medical research is often confined to the technical development of treatments and cures, a stream on public health emphasizes the social aspects that can affect health outcomes, including the effects of specific policies and prevention strategies.[14] Their research examines how "health misinformation is weaponized as propaganda, exploiting fear, undermining public trust, and hindering collective action in critical moments."

Health professionals have studied how rumors and fabrications can become associated with specific conditions, including medical mistrust and conspiracy beliefs. A systematic review conducted before the COVID-19 pandemic[15] found that the topics more susceptible to online misinformation were smoking products (e.g., e-cigarettes), drugs (e.g., opioids), human immunodeficiency viruses (HIV),[16] and vaccine hesitancy, e.g., for the human papillomavirus (HPV).

The stream on vaccination hesitancy shows a striking prominence in this line of research. It explores the conspiratorial belief or doubt about whether a vaccine can harm oneself or one's children, for instance, by causing autism.[17] These beliefs can result in active opposition to public health initiatives. Research on this area includes factors leading to vaccine hesitancy,[18] how it is legitimized online,[19] and how the so-called Anti-vaxxer activist groups bring their ideas forward.[20] The studies reveal a crucial role of social media platforms in which Anti-vaxx groups spread hesitancy to recruit new followers.

During the COVID-19 pandemic, public health officials struggled to counter two overlapping threats: the actual virus and the misinformation surrounding it.[21] Even though the health researchers explored multiple messages and channels to distribute correct information through social media interventions and official government statements,[22] misinformation about the virus spread as quickly, or perhaps even more, than the virus itself.

Disinformation during the COVID-19 pandemic dramatically hindered the efforts of public health officials. Not only did it increase the spread of vaccine hesitancy, but it also resulted in the spread of miracle treatments and fake cures for profit.[23] Moreover, politicians used the culture wars surrounding vaccines and masks to gain political powers by loading preventative measures with meanings associated with partisan politics. One example was the mask-wearing controversy, which transformed a common-sense hygiene measure to slow down the spread of the virus into an unprecedented culture war, making face masks a symbol of oppression and an infringement on freedom.[24] The controversy originated from conflicting advice during the early stages of the pandemic, in which it was unclear whether face masks were recommended or not. Eventually, wearing face masks in public took a decidedly partisan meaning. The issue became a prominent flashpoint on social media, leading to polarization and outright animosity among proponents and detractors of wearing face masks during the pandemic.

As public health officials raced to find a cure for the coronavirus pandemic, they also struggled to calibrate their messaging, working with strategic communications professionals to establish a connection with the public. The spread of misinformation online proved to be such a significant challenge that health researchers coined the term *infodemic*.[25] This neologism merges the words information and pandemic, and it refers to the overabundance of information (both accurate and inaccurate) that makes it difficult for people to process and make informed health-related decisions. The resulting *information overload* constitutes a significant part of the phenomenon when consumers cannot cope with the overwhelming amount of facts and opinions circulating during a health crisis, leading to confusion and panic. People glued to their screens in search of the next bit of information for extended periods experienced anxiety. Hence, health communication officials chose to reduce the overload by reducing the number of spokespersons, providing concise updates, and using plain language.

Another unique concept that emerged from blending immunology with strategic communication is the *misinformation superspreader*. In immunology, a superspreader is an individual who spreads an infectious disease to more people than the average. In the context of misinformation, a superspreader is responsible for disseminating false or misleading information to a large audience at scale, often by exploiting the algorithms that recommend content on social media.[26]

A report by the Center for Countering Digital Hate (CCDH) found that just a handful of individuals were responsible for seeding a large share of the anti-vaccine misinformation on social media.[27] The report found that, at the height of the pandemic in early 2021, "65 percent of anti-vaccine content is attributable to the Disinformation Dozen."[28] The misinformation superspreaders included "alternative health entrepreneurs"[29] pushing their commercial products, like "an entrepreneur peddling dietary supplements and false cures as alternatives to vaccines."[30] Those disinformation entrepreneurs

use viral marketing strategies to amplify anxiety against official treatments and prevention measures and profit from offering their alternative cures as a solution to the anxiety they skillfully provoked.

To understand the mechanisms of misinformation superspreading, the CCDH sent an undercover journalist to document a workshop in which anti-vaccination activists workshopped their communication strategies.[31] The follow-up report confirmed that the activists pushed an overarching narrative designed to stoke anxiety by arguing that vaccines are dangerous, especially for children. For instance, anti-vaxxers co-opted the style and aesthetics of fact-checking and forced debates on public forums to generate doubts. Then, they adapted their core message to address the resulting anxiety by targeting several different demographic groups, especially parents, stoking anxiety to drive up vaccine hesitancy. In parallel, anti-vaxxers set up "safe spaces" online that ostensibly offer guidance and address doubts about vaccines but that, in reality, offer arguments designed to convert vaccine hesitancy into outright opposition. The CCDH called this communication strategy "the anti-vaxxers playbook."

Researchers developed practical communication guidelines responding to the infodemic.[32] First, monitoring online chatter and following up on what information emerges in the public space (i.e., infoveillance) can lead to preemptive messaging. Second, the development of social resiliency requires initiatives related to media and science literacy. Third, encourage refining knowledge production and circulation through fact-checking and peer review and, finally, identify and minimize the distorting factors of political and commercial interests. Still, whereas several of these initiatives can be helpful for technical communication, they are insufficient to address the emergence of conspiracy theories and culture wars surrounding health misinformation.

Disinformation and the Digital Technologies of Social Media

The reemerging interest in disinformation research can be attributed to the digital technologies enabling the production of synthetic content at a large scale and the rapid distribution of such content on social media. In this context, *synthetic media* means machine-generated image, audio, video, and text formats designed to mimic human-made *organic* content. Think of the deepfakes, one of the newest ways to fabricate controversies through AI-generated video and audio formats (see *Synthetic Media* in Chapter 7). Deepfakes have been notorious for manufacturing fake scandals and election interference, for instance, by releasing doctored images or videos showing a person in a compromising situation.[33] In 2024, The New York Times reported the case of a rising politician, Sabrina Javellana, who became the victim of pornographic deepfakes superimposing her face into adult videos aiming to tarnish her reputation.[34]

The popularity of this content is amplified through social bots. These fake social media accounts employ the same technologies that power chatbots and other service tools to mimic social media users and to create the impression

that many people are aware of a scandal, making it go viral.[35] This type of astroturfing has led to the emergence of a whole research field focused on detecting *coordinated inauthentic behavior* (CIB),[36] which refers to using multiple accounts that appear to act independently when, in reality, they are part of an orchestrated campaign.

Recent studies on the proliferation of online bots show they are becoming ever more elusive against detection measures like captcha.[37] To detect CIB, researchers play a cat-and-mouse game against cyber criminals by looking for patterns showing coordinated activity. For example, similar conversation patterns in multiple accounts, whether the same content is posted simultaneously, the same expressions are used, or the same harmful narrative is pushed across the different posts. The scale of CIB is overwhelming. In 2022, Facebook reported taking down 200 global networks operating in 68 countries and 42 languages.[38] Nevertheless, their proliferation has a commercial component when merchants sell social bots in bulk to inflate the number of followers of a social media influencer.[39]

The proliferation of synthetic media has democratized the fake news ecosystem, making producing and distributing misinformation increasingly cheap. Here, the deployment of AI-powered fact-checking systems emerged to enable efficient and rapid analysis of evidence, addressing the limitations of human-centric approaches. Although the process is daunting, researchers divide it into manageable subprocesses or subtasks that AI can perform. The first step for an automated fact-checking solution is recognizing the claims that require verification. Several techniques can be used; for instance, *natural language processing* (NLP) techniques can seek claims within news articles or social media posts. Then, the system must assess the best sources of evidence to corroborate these claims. Machine learning algorithms can be trained on large datasets to learn what types of claims can be corroborated in which repositories and cross-reference them against the sources of information. Finally, the system must produce a verdict. The algorithms can then classify new articles as real or fake based on these learned features and assess and explain them.[40]

An automated solution can help deal with the sheer volume and pace of the claims that require verification, which can overwhelm the capabilities of human-based fact-checking systems. AI-powered fact-checking is still in its early stages and is becoming an arms-race against fake news websites. Its current limitations can be seen in the example of the Fact Extraction and Verification (FEVER) tool.[41] The idea behind this publicly available solution is that a claim can be verified against several sources of evidence, such as Wikipedia. When checking a claim, AI-powered algorithms crawl through large amounts of evidence documents in the document to retrieve supporting and refuting evidence from the sources. Then, the system checks whether the claim is likely true or false. However, it is still possible to manipulate the evidence database, poisoning it with contradictory claims and misleading the system into thinking that specific claims are incorrect.[42] As a result, even

though the AI research community has mapped out and identified some promising solutions, none of them is bulletproof.

Machine learning also helps to detect and counter botnets, which are networks of computers controlled by a single entity.[43] These systems have been used for illegal activities, including spam and click fraud, and thus, machine learning algorithms can be used to detect their commonalities.[44] For instance, machine learning algorithms can help researchers scan the network for anomalies such as high traffic volumes or other clues suggesting synchronized activity among multiple machines. For example, they can detect bots by identifying labeling patterns or repetitions when posting messages. Once inauthentic coordinated behavior has been detected, machine learning and deep learning algorithms can counter it, for example, by flagging fake accounts or blocking IPs.

Finally, AI is also increasingly employed to create and distribute fake news.[45] The rise of AI-powered tools that convincingly imitate human communication, including voice and video formats, blurs the line between reality and fiction. In today's society, the democratization of tools designed to churn synthetic content, paired with fake accounts pretending to be human consumers, has led to a surge in the spread of conspiracy theories at an unprecedented scale. Low-quality synthetic content floods the Internet in a bid to generate clicks as content creators utilize AI to produce numerous machine-generated text, images, and videos and then auto-translate them into dozens of languages. At the same time, bots are being leveraged to exploit digital advertising platforms through ad fraud and amplifying disinformation. The rise of synthetic content and semi-autonomous bots operating through CIB has created an environment where discerning reality is increasingly challenging without sophisticated digital tools.

Disinformation in Journalism and Media Research

Media researchers are analyzing the impact of disinformation on the erosion of trust in news organizations. With the increasing reliance on social media for news consumption, people's relationships with news organizations are changing, leading official media outlets to compete against news influencers, which are people commenting on the news on social media without adhering to the standards of practice of journalists. Consequently, media researchers are exploring a wide range of topics, including the use of social media data, to understand how disinformation spreads on these platforms.[46] Their work finds that false information spreads quickly and more widely on social media than legitimate news.[47]

Since media studies are closely related to journalism, it is not unexpected that a significant area of interest within this field revolves around the study of fake news,[48] a subset of disinformation research that studies how deceptive content directly adopts the aesthetics of journalism. It also includes the dissemination of falsehoods masquerading as news and organizations that

pretend to be news outlets. In addition, the stream focuses on promoting media literacy, a type of critical thinking used to analyze and consume media and to interact critically with media messages.

Research on fake news is increasingly focusing on its corrections.[49] This literature stream looks at the effectiveness of various methods of debunking false information and correcting misperceptions.[50] As one way to counter falsehood, the researchers study how to strengthen media literacy—the ability to judge and act on the quality of communication in multiple forms of media, including social media, news outlets, and ads.[51] Another tool is fact-checking, verifying the accuracy of claims made in public discourse, such as news articles or political speeches.[52] Fact-checking involves researching and cross-referencing information from multiple sources to determine the truthfulness of a statement. Researchers examine the sources that are more credible for issuing corrections, such as news organizations or academic institutions,[53] as well as study the best methods to convey corrections, looking at infographics, community notes on social media, and other visual aids.

Recent innovations in AI are promising for fact-checking. Powered by NLP and machine learning, AI-powered fact-checking organizations are transforming the fight against disinformation learning to verify claims efficiently. Some emerging technologies use NLP to verify text against trusted sources to detect inaccuracies in news reporting. These services use machine learning to rapidly analyze large amounts of evidence to determine the likelihood that a specific claim is accurate. However, their effectiveness remains disputed in fields where consensus does not exist.

One interesting finding in this stream is that fact-checking can *backfire*, which means that some people double down on their beliefs instead of changing them.[54] The backfiring effect occurs when a person rejects fact-checking and instead entrenches further. The reason is that fact-checking relies on proof of authority, which means that a truth claim rests upon an authority figure or expert.[55] As a result, fact-checking organizations are accused of relying on their position of authority to control truth. This effect is particularly prevalent in conspiracy theories in which the nature of a conspiracy is precisely that a hidden or secretive group uses its power to control knowledge.

Researchers in the journalism and media stream propose mechanisms to develop *resilience* in the information space, which requires training in media literacy. Resilience means internal strength that allows persisting under adverse conditions and obstacles, often represented by discrete events like natural disasters. Whereas the concept of resilience is usually applied to crises, it can also be applied to the information landscape, which then means the willingness to participate in a democratic society and to maintain the capacity to receive and act upon reliable information.[56]

Researchers recommend several interventions to help the public become more resilient when encountering misinformation online.[57] These counter-strategies often include providing clear and concise explanations. Indicate, in simple terms, the scientific basis for the issue. Present the information in ways

that are rhetorically aligned with the audience. Use spokespeople that the audience identifies and respects. Finally, "inoculate" the population by preemptively presenting the arguments and their delivery styles that the audience will likely encounter as misinformation.[58]

Disinformation in Political Communication and Democratic Governance

Researchers are interested in studying disinformation due to its potential to destabilize democratic governments and interfere with elections. Disinformation can increase support for authoritarian leaders by manipulating public opinion and undermining trust in democratic institutions and processes, complicating or even preventing fair and free elections. However, even though disinformation interferes with democratic principles and rights to access information, countering it cannot come at the cost of eroding freedom of expression, which is a fundamental civil right that includes the right to hold and express opinions and the right to receive and impart information without interference from the state. Freedom of expression is crucial to democracy and depends on the work of independent journalists. Therefore, when studying disinformation, including its potential to erode democratic institutions and contribute to the rise of authoritarianism, political researchers must be careful to counter disinformation without relying on anti-democratic practices like censorship.[59]

This research stream identifies a few conditions that can amplify perceived controversies. One of them is the increasing prevalence of *identity politics*. Identity politics is a political strategy that concentrates on promoting and advancing the interests of a specific group with shared characteristics, like ethnicity or religion. It highlights the importance of these groups advocating for their interests. However, identity politics can have a dark side when it devolves into a culture war in which the benefits of one group come at the expense of an antagonist group.[60] For example, when US President Donald Trump launched his campaign back in 2015, his first speech included a reference to Mexican immigrants crossing the border to spread violence, framing his campaign as one group against another. Moreover, politicians have used "fake news" to discredit critical reports of their policies or statements. As a result of a highly polarized society, people question the accuracy and reliability of essential news sources as to whether the information relates to their respective identity groups.

Another condition identified by political communication research corresponds to the extent to which people who share misleading information online do so because they want to believe in the fantasies they share. Here, researchers have proposed two related terms. One, *motivated reasoning*, refers to sophisticated political thinking to decice what to believe rather than determining what is true.[61] A well-established principle in political research is that the most informed citizens tend to lean toward partisan biases. In the case of political misinformation, "the perception of truth appears to be

subject to political leanings, in line with much research showing the pervasiveness of directionally motivated reasoning in any political domain."[62]

Another term, *group meta-perceptions*, addresses the sociality of how and why people believe in political misinformation.[63] We know that the "individuals who choose to circulate (mis)information online primarily do so because of its ideological alignment and dislike of the out-group."[64] Moreover, given that people choose to assess incorrectly the number of those who support their worldview, it is not surprising that conspiracy theorists tend to overestimate the number of people who subscribe to their ideas when, in fact, their perspective is held by far fewer people. The perception that a personal opinion constitutes the majority opinion when, in fact, it is just a fringe viewpoint can amplify perceived controversies.

Finally, disinformation research in political contexts studies state responses to hybrid security threats, including informational warfare. The European Union's hybrid threats framework[65] recognizes disinformation as a significant component of non-traditional threats, including economic, technological, and social measures designed to achieve military goals while remaining below the threshold of open warfare. Disinformation is a central element within the informational domain because it can undermine public opinion and erode the public's cohesiveness and stability.

State actors have used polarization and mistrust in news media to interfere in elections,[66] using various tactics, including media manipulation and cyberattacks, to cause turmoil and interfere in elections. For example, disinformation emerged as a form of informational warfare during the Russian invasion of Ukraine, directed not only at Ukraine but at other EU countries,[67] causing concerns about the potential impact of disinformation on the region's stability and its ability to respond to the crisis.[68] Western democracies respond by setting up task forces to understand and counter disinformation without infringing upon democratic values. In 2022, Sweden established the Psychological Defence Agency to enhance society's resilience against media manipulation campaigns that seek to destabilize the country, hinder democratic governance, and impact social cohesion.

Disinformation in Psychology and Behavioral Research

Before the 2010s, misinformation research had a different meaning than it does today. In psychology and behavioral research, the *misinformation effect* meant the "exposure to misleading questions about an experience often resulted in a permanent loss from memory from the original details, which was replaced by false information."[69] In other words, research on misinformation explored the human unreliability to recall events precisely, including "people's memorial susceptibility to false information or misleading suggestions."[70] This line of research emerged in the context of eyewitness testimonies in the US legal system that often failed to provide consistent details about an incident from memory.

In the 1970s, two studies of people recalling automobile accidents[71] demonstrated that human memories are prone to change. The first study was an experiment presenting participants with pictures of a car-pedestrian accident; however, the respondents were exposed to misleading or irrelevant statements about the evidence.[72] As a result, some participants assimilated misleading statements. They made proportionally higher rates of mistakes when recalling the accident, demonstrating that people absorb and adopt flawed information into their memories. The second study indicated that suggestive questions could influence the witnesses' recollection of an event, causing a reconstruction of the memory.[73]

Although early studies into the misinformation effect concerned memories, contemporary researchers are applying these foundational ideas to understand why people fall for fake news. Given how moldable human memories are, research on the misinformation effect has been applied to understand whether reading fake news can alter the memories of an actual event, especially if the false stories align with the person's political identity.[74] Behavioral researchers often use experimental methods, which include manipulating one or more variables to observe their effect on a dependent variable. Such experiments are helpful because they establish a cause-and-effect relationship between the variables.

Think of a study on fake news consumption, where participants are presented with headlines that vary in controlled ways: headlines determined to be accurate by fact-checkers against headlines determined to be false. Researchers can test the outcomes to understand whether the stimuli cause an effect. Here, the effect can be either the belief that news is fake or real[75] or the willingness to share that specific content on social media.[76] For instance, one early study found that prior exposure to fake news headlines increased the likelihood of believing further headlines to be accurate. In other words, repeated displays of fake headlines increased the belief in them.[77]

A second line of behavioral research focuses on the safeguards that prevent people from believing fake news. Researchers found that

> people often fail to discern truth from fiction because they fail to stop and reflect about the accuracy of what they see on social media. Accordingly, simple prompts that shift people's attention to accuracy increase the quality of news people share on social media.[78]

This finding prompted social media platforms to add tickers or labels marking specific posts disputed by fact-checkers, which have now evolved into crowdsourced "community notes" adding context to disputed statements. Predictably, the caveat applies: because most posts do not have fact-checking statements, it leads to the tacit but wrong understanding that if posts are not fact-checked, they must be true. For instance, a study demonstrates that when only a portion of the posts are marked as fact-checked, people tend to believe that the posts that have not been marked are accurate, a so-called

"implied truth effect."[79] Therefore, placing warning labels on some posts, but not all, makes the unmarked posts appear more credible.

Behavioral researchers have developed several concepts that explain why people are vulnerable to disinformation on social media. One of them is *cognitive miserliness*, which refers to the tendency of individuals to rely on simplified mental shortcuts or heuristics when processing information rather than engaging in more time-consuming and effortful analytical thinking.[80] While the time people spend deliberating on whether a post is true or false could increase the likelihood of identifying fake headlines,[81] deliberation is not the default mode of human thinking. The human brain minimizes mental effort by using efficient and accessible problem-solving mechanisms. Consider how people buy groceries; people tend to buy what they already know because otherwise, making a rational choice for every item in a supermarket would take too long. Whereas it is often helpful for our brains to be so efficient, it can also lead to judgment shortcomings, especially in the split second it takes to assess a post on social media. Researchers found that deliberation makes us less vulnerable online by slowing down processes and helping to discern fake news.[82]

Cognitive dissonance and *confirmation bias* are two other interrelated concepts in behavioral research that can affect how people accept misinformation as accurate. Cognitive dissonance is the mental discomfort that arises when someone is confronted with information that contradicts their beliefs or values.[83] The likely outcome is that the contradictory information might be rejected, even if true. Confirmation bias, on the other hand, refers to the tendency to seek out and interpret information in a way that confirms one's pre-existing beliefs,[84] consciously or unconsciously overlooking information that states otherwise. Both types of biases can lead to the so-called echo chamber effect in which people are exposed to information that confirms their existing beliefs and rejects the claims that contradict them.[85]

Disinformation Research in Marketing and Advertising

Figure 3.2 shows all the previous research clusters identified as part of the semantic mapping. However, there is a glaring omission in the disinformation research map: no research stream currently studies the economics of disinformation. The absence of research into the relationship between disinformation and money is puzzling, given that the emergence of the fake news phenomenon is directly related to the growth and accessibility of the digital advertising market.[86] However, disinformation researchers are beginning to recognize that digital advertising has been used to circulate and amplify disinformation[87] by diverting marketing budgets to fund incendiary influencers and fake news outlets.[88] According to industry reports,[89] digital advertisers unknowingly contribute $2.6 billion annually to fake news publishers in the United States. Moreover, state-sponsored operatives use digital advertising technologies (AdTech) without disclosing the source of their funds to

camouflage their digital influence campaigns on social media (i.e., "dark money")[90] to the point that they are often indistinguishable from legitimate advertisers.[91]

Disinformation intersects with marketing in several ways. With the rise of the Internet, legacy news organizations have had to adapt and renew their business models online. An increasingly large proportion of traffic comes from social media like Facebook, leading to a growing dependence on digital platforms, as they control the algorithms that determine what content users see. Because platforms deprioritize news in favor of influencer content, media organizations have lost their audience, leading to a decline in revenue. In attempts to sustain their operations and rank high on search engines due to high competition and constantly changing algorithms, some media organizations rely on subscription models or build direct relationships with their audience through newsletters and podcasts. In contrast, others are spending more and more on paid advertising to drive traffic and be able to offer free content online.[92] The resulting market makes it more likely for digital creators to spread incendiary content and disinformation to monetize clicks.[93]

Also, disinformation intersects with marketing through ad fraud or clicking fraud.[94] Here, perpetrators exploit the vulnerabilities of the digital advertising market to capture advertising revenue while reporting inauthentic clicks and engagements delivered to bots, not humans. Social bots and AI-powered content generation enable a type of business model that harnesses traffic to exploit the vulnerabilities of the advertising market. For example, content farms are websites that constantly post low-quality content paired with clickbait headlines to attract traffic and generate ad revenue. Similarly, bot farms generate social media accounts and use them to inflate the follower count of influencers.[95] In addition, bot farms can be used for creating fake news, farming engagement, and trolling political opponents.

The takeaway is that the technical capabilities needed to run and operate a coordinated network of social bots to commit ad fraud are identical to those required to run election interference or to spread propaganda. When criminals create networks of social bots and outlets that spread fake news, they often aim to cheat digital advertising technologies to siphon advertising funds for financial gain, a practice known as ad fraud. However, the same digital infrastructures can be used for other nefarious purposes, including amplifying propaganda or driving political messages.

Besides ad fraud, corporations have used disinformation to cover up scandals and manipulate public opinion. One specific manifestation of disinformation in business is called *corporate spin*, the act of cherry-picking and presenting convenient facts alongside a narrative that misleads public opinion, often hiding malpractice or benefiting a company's interests. For example, when covering up natural disasters,[96] corporations embed carefully selected statements and storytelling to produce talking points for a corporate spokesperson to present an ambiguous situation in the best positive light.[97]

Concluding Remarks

Whether election interference, hybrid warfare, suppressing press freedoms, or amplifying vaccine anxiety, the world has witnessed the emergence of digital tools that enable disinformation to circulate at scale. Researchers have responded by pouring their collective efforts into understanding and countering the phenomenon. However, "while the increase in publications has led to a better understanding of the topic, it has also resulted in theoretical confusion,"[98] and the sheer number of publications in so many fields has fragmented the literature.

The chapter used bibliometric and interpretive analysis to review vast disinformation literature and identify six distinct yet interrelated clusters representing different research streams. It confirms that whereas the disinformation field expands quickly, there is still much conceptual overlap and fragmentation. While this is common in interdisciplinary fields, the breadth of empirical contexts, the diversity of terminology, and the new environment where discerning reality increasingly challenge our understanding of disinformation and our ways to counter it. Against this backdrop, the chapter aims to equip readers unfamiliar with disinformation research with a map to help them navigate field fragmentation and establish linkages between the clusters.

Table 3.1 summarizes the critical topics and leading issues in disinformation research by mapping how disinformation is studied in multiple fields. It shows several avenues to advance the disinformation field. First, interdisciplinary collaboration is required to study the migration of concepts from one field to another. For instance, while concepts like "infodemic" and "superspreaders" emerged in health research, researchers in other fields can study what makes them effective in distributing disinformation. From a business point of view, the business model that makes it so profitable for superspreaders to circulate misinformation is unclear. Moreover, while AI researchers have focused on fake news detection, other elements, such as how bots that conduct ad fraud also engage in astroturfing, need the same attention.

Table 3.1 Disinformation research at a glance

Cluster	*Topics and issues*	*Conceptual contributions*
Disinformation in Health Research	• Public health • Vaccine hesitancy • Fake cures • Condition-specific misinformation (e.g., COVID-19, Ebola, or HPV) • Interest groups (e.g., Anti-Vaxxers)	*Infodemic*—The overabundance of accurate and misleading information that makes it difficult for people to make informed health-related decisions *Misinformation superspreaders*—Person or entity who spreads false or misleading information at scale, often by abusing social media

(Continued)

Table 3.1 (Continued)

Cluster	*Topics and issues*	*Conceptual contributions*
Disinformation in the Digital Technologies of Social Media	• Detection of fake news and synthetic content • Automated fact-checking • Detection of coordinated inauthentic behavior (CIB) • Detection of social bots and botnets	*Coordinated Inauthentic Behavior*—A mix of authentic and fake accounts that appear to act independently but instead have a centralized agenda *Social bots*—social media accounts that can be partially or fully automated, masking inauthentic behavior as authentic *Synthetic content*—machine-generated content in image, text, video, and audio formats that mimic human-made content *Automated fact-checking*—the AI-powered process of identifying and verifying claims and posts at scale
Disinformation in Journalism and Media Research	• Trust in media • Media literacy • Fact-checking • Echo Chambers • Conspiracy Theories	*Media literacy*—the ability to critically assess media messages and assess their credibility and source *Fake news*—The act of masking disinformation as news *Media echo chambers*—an epistemic environment in which participants encounter messages that reinforce and amplify pre-existing beliefs
Disinformation in Political Communication and Democratic Governance	• Social resilience • Democracy • Using fake news as an excuse to roll back press freedoms	*Societal resilience*—the efforts to protect open and democratic societies targeted influence campaigns *Motivated reasoning*—the use of sophisticated partisan thinking to determine what is true
Disinformation in Psychology and Behavioral Research	• Misinformation effect (memory) • The psychology of fake news	*Implied truth effect*—news articles not labeled as fake news are assumed to be true *Cognitive miserliness*—human tendency to use shortcuts and heuristics when detecting fake news
Disinformation in Marketing and Consumer Research	• The Economics of Disinformation	*Ad fraud*—the exploitation of the digital advertising market to capture revenue with digital techniques that can be repurposed to spread disinformation *Ad-funded disinformation*—how programmatic advertising funnels revenue from advertisers to fake news.

Second, the fragmentation in the disinformation field is a challenge for developing comprehensive counterstrategies compatible with democratic values. For instance, defining disinformation through the unclear notion of "malignant intent" leaves open the opportunity for anyone to claim that a critical news report is disinformation. This situation can open the door to the development of strategies that may appear to counter disinformation effectively but, in reality, flirt with censorship and authoritarianism. The efforts to counter disinformation can be co-opted to infringe on press protections and restrict freedom of speech.

Finally, the review identified a glaring gap in the literature regarding understanding the economics of disinformation. Researchers in fields like management, marketing, and economics can contribute much to understanding the business models and financial incentives that make disinformation thrive on social media.

Notes

1 Lukka and Vinnari, "Domain Theory and Method Theory in Management Accounting Research."
2 Shorenstein Center, "Research Initiative: Disinformation."
3 Own elaboration. The graph represents search queries on the SCOPUS database. The results are limited to articles published before 01.01.2024 in indexed journals, books, book chapters, or reviews in the English language. The parameters of the search query were (TITLE (disinformation) OR TITLE (misinformation)) AND PUBYEAR > 2009 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re") OR LIMIT-TO (DOCTYPE , "ch")) AND (LIMIT-TO (SRCTYPE , "j") OR LIMIT-TO (SRCTYPE , "b")) AND (LIMIT-TO (LANGUAGE , "English")). The distinction was whether the search terms were present in the title (TITLE (disinformation) OR TITLE (misinformation)), or in the title, abstract or keywords (TITLE-ABS-KEY (disinformation) OR TITLE-ABS-KEY (misinformation)).
4 The subject areas reflect the classification of scientific journals by Scopus and do not always correspond to the classification of each individual publication.
5 The metadata available in the SCOPUS database includes the article description (title, abstract, and keywords), journal, authors, citations, and the references that each article uses. Having all the references means that it is possible to conduct bibliometric analysis and visual text mining to assess how each publication relates to another, forming a network.
6 Sprong et al., "Market Innovation: A Literature Review and New Research Directions," 453.
7 This review employs VOSviewer, an open software designed for bibliographic analysis. The analysis includes the following techniques:

> *Keyword co-occurrence networks*. A knowledge mapping technique that represents keywords as nodes and simultaneous words as a link. The link strengthens as a pair of words co-occurs in multiple articles to identify relationships between concepts across the literature,
>
> *Density visualization*. A form of visual text mining that represents gravitas as the concepts that appear more have bigger size and centrality.
>
> *Mapping keywords over time*. The analysis of the year of publication to understand how concepts change meaning over time.

8 Although the term keyword gives the impression of a single word, a keyword can have two or more (e.g., fake news has two words). To find the right combinations the text in the database was pre-prepared. The large amount of text data required the following pre-processing protocols. Using RapidMiner, text data was preprocessed with the removal of 850 stop words common in English language such as "by," "in," and "the." Then, the process of lemmatization removed inflectional endings to convert words into their base or dictionary form, which is known as the lemma. For instance, "conspiracy" and "conspiracies" are counted as one lemma "conspiracy." In addition, a handmade thesaurus of 302 terms and expressions was developed to remove words and n-grams that are not directly related to this context. For example, expressions such as "previous research," "key finding," and "research limitation" appear frequently in academic abstracts regardless of context and can be safely ignored.
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10 Loftus, Miller, and Burns, "Semantic Integration of Verbal Information into a Visual Memory."
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12 The map represents co-*citation clusters*. A technique for grouping data points to form a cluster or network based on the interrelations between a co-citation cluster's members. It maps academic journals cited together in groups.
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4 Disinformation Research from a Constructivist Market Studies Perspective

Disinformation research—understood roughly as the study of coordinated and orchestrated media manipulation campaigns—is theoretically rooted in media studies and political communication.[1] Given that these fields are deeply concerned with the functioning of journalism, media, and democracy, previous research has focused on the manifestations of disinformation in the form of fake news and social media manipulation. As a result, researchers have examined how disinformation undermines democratic governance, including the erosion of public trust in institutions like news organizations, and sought to understand its role in election interference[2] in a way that threatens the operation of deliberative democracies.[3]

Chapter 3 mapped out some of the main streams within disinformation research while identifying a gap in the literature: researchers rarely examine disinformation from its commercial angle.[4] While previous research mentions the importance of money underlying the disinformation phenomenon,[5] the business models and financial incentives that enable and amplify the circulation of disinformation online are seldom objects of inquiry.[6] In today's world dominated by social media, where algorithms determine what voices are heard online, the importance of the financial interests of the tech firms that own these platforms cannot be understated. Commercial practices such as digital advertising and the influencer industry play a role in determining what content thrives on social media. To be precise, one gap in the literature is the systematic examination of how these digital markets amplify the circulation of disinformation online, for instance, due to the use (and abuse) of the digital advertising market.[7]

Although research shows that advertising budgets are being diverted to fund fake news outlets and incendiary influencers,[8] the reason is not simply that advertisers explicitly choose to fund toxic content. Instead, the problem is that the digital advertising industry is particularly opaque, boasting of its technical complexity to avoid scrutiny and accountability.[9] Due to the increasing use of digital advertising technologies, collectively known as the AdTech industry, it is increasingly challenging to know how each advertising dollar is allocated.[10] This situation means marketers do not always know

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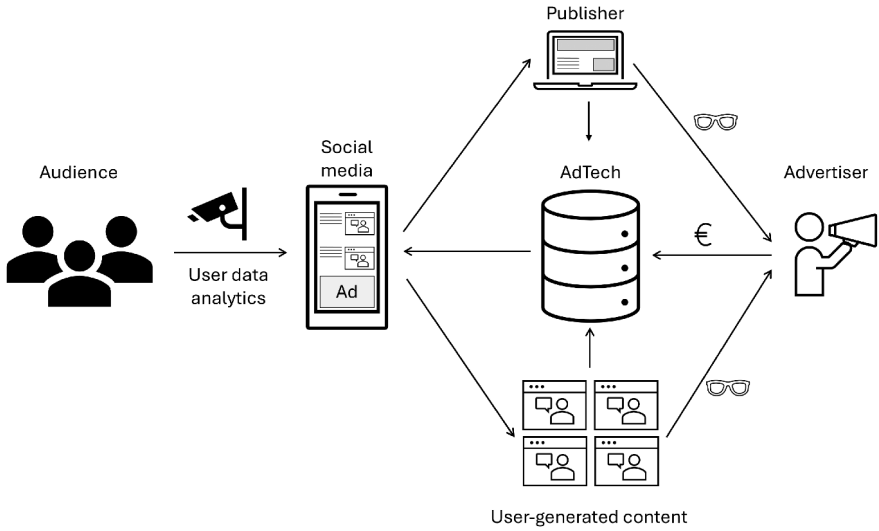

Figure 4.1 AdTech in digital advertising.

where their ads are displayed and who receives them.[11] Figure 4.1 illustrates the role of AdTech in digital advertising.

Not a long time ago, advertisers used to control precisely their budgets, deciding to place ads in selected media publishers, like newspapers and TV shows. However, the current digitalization of advertising means that online intermediaries, like Google Ads, use automated systems to allocate advertising funds through real-time competitive bidding—a market called *programmatic advertising*,[12] which, according to Statista, accounts for 88% of the revenue distribution of digital advertising,[13] a market worth US$1 trillion by 2027.[14]

Automating the digital advertising market means that "good" ads from legitimate brands can appear on "bad" websites, including low-quality websites and more pernicious predatory outlets like fake news, funding them without advertisers necessarily knowing it.[15] Industry estimates calculate that legitimate brands waste US$2.6 billion annually on advertising displayed on fake news websites in the United States alone.[16] The result is a trifecta: a highly complex and opaque system automatically distributes large amounts of money while lacking meaningful accountability and oversight.[17] In fact, AdTech is so opaque that a 2020 study commissioned by the Incorporated Society of British Advertisers (ISBA) and the accounting firm PwC encountered steep difficulties in auditing all its costs.[18] The auditors could not account for 15% of advertiser spend—around one-third of supply chain costs. For a market currently worth 700 billion worldwide,[19] the lack of oversight and transparency is indefensible.

While tech firms claim to address the inefficiencies of their systems,[20] their lack of meaningful actions has been criticized[21] and is the object of antitrust

lawsuits.[22] One poignant criticism is that platforms have a conflict of interest embedded in their business models.[23] For example, research into the inner workings of content moderation[24] shows that conflicting and vested interests prevent them from taking decisive action when successful digital creators cross the line instead of reluctantly acting only on the most blatant violations.[25] One reason is that digital platforms get to keep their ad revenue even when they take down bots or demonetize incendiary digital creators.[26]

Journalists have documented how platforms profit even when they fund the spread of disinformation online.[27] Moreover, whistleblower revelations, like those in the *Facebook Files*,[28] show that social media firms are aware of how their platforms can amplify disinformation but choose inaction.[29] One pressing concern is about the harvest and misuse of private user information. In 2018, Facebook faced the *Cambridge Analytica* scandal, which was reported to have allowed a consulting company to use the personal data of 50 million Facebook users to create tailored advertising supporting Donald Trump's 2016 presidential campaign.[30] Several initiatives, like Europe's Digital Services Act, are designed to increase accountability and exert a degree of democratic oversight over digital platforms, although their effectiveness remains in question.[31]

In sum, journalists and disinformation researchers are starting to recognize that the rapid circulation of disinformation intersects with AdTech,[32] mainly by making it profitable.[33] While several markets are linked to disinformation, researchers focus primarily on the influencer industry[34] and digital advertising.[35]

The Circulation of Disinformation in Digital Advertising

"Programmatic advertising" is a complex real-time bidding system that pits advertisers and publishers into an auction for ad inventory.[36] Its influence is so pervasive that some commentators characterize it as a "Pandora's box,"[37] a metaphor for a system that seems innocuous but is harmful. In this digital system, brands have less control over the publishers commissioned to display ads and the content that appears next to them, and thus it has been identified as a medium for funding disinformation online.[38]

One consequence of the lack of oversight[39] is that advertisers can funnel money into the system without disclosing sources—dark money—in which an entity spends money on political advertising without revealing identity, source of funds, or affiliations.[40] The capacity to run digital influence campaigns in the shadows creates an unprecedented window for undue influence by pouring money designed for election interference. For example, a 2024 indictment by the US Department of Justice shows that state actors, in this case Russia, use digital advertising to increase the online footprint of ideologically aligned influencers, amplifying their reach.[41] Prosecutors argued that a United States-based media firm agreed to push pro-Rusia propaganda among its conservative social media influencers, including Benny Johnson, Tim Pool, and Dave

Rubin, who have roughly 6 million YouTube subscribers. While the money, in this case, is allegedly being funneled through a media firm, a malign actor can boost the reach of ideologically aligned influencers without them knowing about it, for instance, investing directly in Google Ads to inflate specific channels without needing to channel money directly to influencers.

Such influence campaigns are possible because the infrastructure created by AdTech firms (and used broadly among online platforms and web publishers) collects user data to serve targeted content personalized ads. This digital market sells user data and predictive analytics on demand, leading to a situation in which the behavioral data that powers predictive analytic models has become a prized commodity.

It is easy to overlook the digital marketplace due to the abundance of online services that users can access seemingly for free. This arrangement has been referred to as "free internet," which is a misnomer because it refers to users' ability to access online content and services without upfront costs, even though these online services are not truly free. Consumers often pay with their data and attention in exchange for what appears to be free digital services; according to Zuboff's "surveillance capitalism,"[42] online services track and hoard user data, reselling it to multiple brokers. Many online services, from dating apps to weather forecast services, collect and track user data to fuel the digital advertising market. These publishers use digital infrastructures like HTTP cookies to gather user information, including browsing history, interests, and geolocation.[43] Although HTTP cookies are supposed to phase out eventually, it is unclear whether the next system, like the Google Privacy Sandbox, will improve user privacy. Figure 4.2 illustrates the type of data that brokers harvest using HTTP cookies to create user profiles and sell them to third-party vendors for advertising.

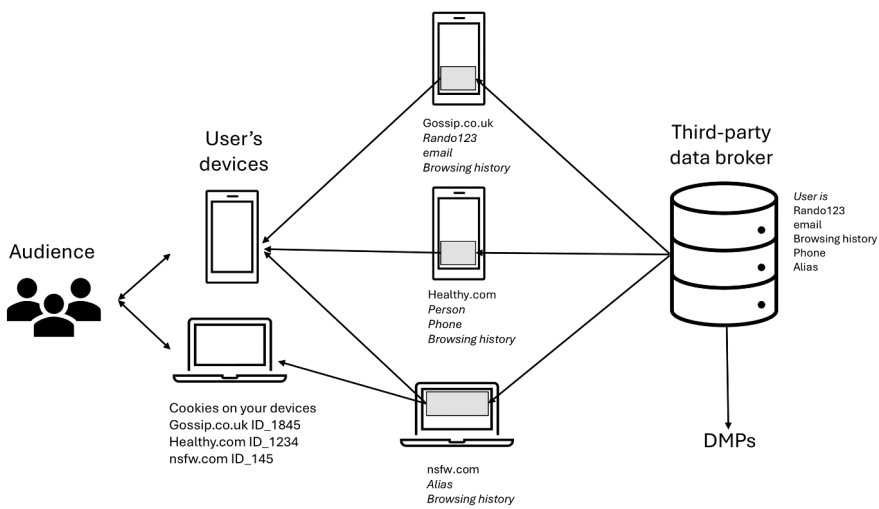

Figure 4.2 Illustration of the type of user data in HTTP cookies.

The process of monetizing user data can be explained as follows: advertisers customize ads for specific users and pay to show them these ads. For example, a brand might target users who have recently searched for sneakers online or joined "sneakerhead" communities by displaying ads for new sneakers on the websites users visit and sponsoring links in search engine results. Brands also pay online personalities such as influencers and bloggers to post featured articles or videos (*sponsored content*). Content producers also earn commissions from the sales generated through referral links (*affiliate marketing*).

The resulting *market for clicks* shapes the content we consume online. In the early days of social media, users were served content posted by the people they followed. Nowadays, a sizable portion of the posts people consume are *paid for* or *sponsored by* an advertiser. Consequently, a system designed to funnel traffic through paid links does not necessarily reflect the audience's interests. In fact, paid content changed the fundamental mechanics of how search engines work. Whereas search engines were designed to present the content that best reflected the search query, marketers pay to get their results displayed on the search results. As the monetization of search engines intensifies, users are less likely to be served *organic* content without paying for its promotion to search engines or social media platforms.[44] Digital marketers complain that "organic reach is dead," because prioritizing paid content creates a pay-to-play environment where the audience is served sponsored content designed to grab their attention and channel it to the websites that pay for it. This system may work well for advertisers trying to build an audience, but it is also prone to abuse. From the offer side, it incentivizes the use of attention-hacking techniques (e.g., clickbait), and from the demand side, it is vulnerable to ad fraud,[45] partly because humans do not always consume online content—bots also click on ads and videos, driving up demand.[46]

The following section introduces CMS to disinformation research and discusses its usefulness in understanding how the digital advertising market has been used and abused to spread disinformation.

Constructivist Market Studies

Constructivist market studies (CMS) is one theory that can be useful for studying disinformation in the context of its market practices.[47] CMS is a theoretical approach in which markets are studied as constructed (i.e., they do not exist a priori), contextual (i.e., they cannot be abstract), and multi-actor systems (i.e., not only buyers and sellers).[48] In other words, markets are complex adaptive systems that various actors, including firms, governments, and consumers, can shape.[49]

Swedish professors Hans Kjellberg and Anders Liljenberg coined the CMS approach back in 2003, and since then, this theory had several labels, including "market studies" and the "market practices" approach.[50] It investigates markets in context by studying the distinct practices and structures that

characterize each market. CMS researchers insist markets are continuously in the making,[51] recursively performed through arrangements or assemblages of socio-material practices.[52] They focus on how assemblages of devices, ideas, practices, and social actors interact by focusing on how new combinations produce distinct or novel outcomes and shape the whole.

The intellectual roots of CMS can be traced to economic sociology,[53] a branch of sociology that analyzes the social and cultural factors influencing economic activity.[54] Economic sociologists have been interested in studying markets to understand how social factors, including culture and human relationships, affect market outcomes and how market exchanges affect social life.[55] One landmark contribution by Neil Fligstein conceptualized markets as socially constructed and embedded in social relations.[56] Likewise, Mark Granovetter proposed that markets are not simply arenas of anonymous exchange but are embedded in social networks and relationships that limit the ability of actors to make rational economic decisions.[57] Accordingly, markets do not emerge naturally or spontaneously. Instead, markets are the outcomes of political and economic processes that shape them.[58]

In addition to economic sociology, CMS scholars often draw from contributions in science and technology studies (STS).[59] Among them, a particularly influential contribution was *The Laws of the Markets*,[60] a collection of essays edited by Michel Callon. The Sociological Review republished it due to its importance in economic sociology and, in turn, sparked interest among other business disciplines, including marketing, in examining actual, real-life markets.[61] For Callon, studying markets requires close attention to the sociotechnical interdependences between people, ideas, and objects in economic life[62] and the devices that make interactions possible.[63]

CMS researchers in marketing have focused on the role of marketing professionals, intermediaries, consumers, regulators, and a broad range of actors that organize how markets work.[64] Therefore, it could be argued that CMS focuses on the performative aspects of markets, examining how market devices contribute to the construction and operation of markets.[65] "Market devices" are the material instruments, technical outcomes, and objects that form the infrastructure enabling markets to operate.[66] Examples of market devices can range from pricing models and market research graphs. They help to organize and calculate exchanges and their value by emphasizing the materialities of economic life. CMS scholars integrate materialities into the study of markets, providing a nuanced understanding of commercial activities.

Rather than describing markets as naturally occurring entities with existential qualities, CMS researchers conceptualize markets as artificial constructs that are recursively performed, which means they are constantly made and remade.[67] A systemic view emphasizing emergence and contingency enables researchers to study markets as malleable structures in which multiple actors—like firms, activists, regulators, consumers, and lobbyists— constantly aim to change market rules and practices.[68] This perspective examines how firms do not just *adapt* but also *shape* their market environments

through "market-shaping" strategies that view markets as endogenously enacted environments.[69] Examples include how tech firms like Uber or Airbnb strategically disrupt existing markets for taxis and hotel practices to benefit their interests. When applied to disinformation research, CMS can potentially examine the financial interests that make disinformation profitable and study the multiple shadow industries that span from online disinformation, including ad fraud and the sale of fake social media followers.[70]

Market-Oriented Disinformation Research

Market-oriented disinformation research can be defined as the study of the markets and business ecosystems that amplify the spread of disinformation and its multiple manifestations, like fake news and conspiracy theories, by incentivizing its production and circulation. A market-oriented approach to disinformation research is not entirely new. Previous research has applied it in form, if not name, to understand the relationship between disinformation and digital advertising,[71] how digital platforms incentivize toxic content through ad revenue-sharing programs,[72] and the ways business models incentivize fringe content to maximize engagement and thus capture ad revenues.[73] Therefore, it can expand current disinformation research by enhancing our understanding of the financial dynamics and business models that reward the circulation and propagation of incendiary content online.

Chapter 3 identified one gap in disinformation research: it needs to focus more on its market practices. Part of the reason is that marketing and advertising researchers have yet to study disinformation meaningfully, even though their fields are directly affected. For example, most of the academic dialogue in disinformation research occurs in non-business journals, with only a tiny fraction of this conversation occurring in business and marketing academic journals.[74] Marketing academics pay little attention to whether and how digital advertising funds disinformation, and when they do, they frame these adverse effects are "inefficiencies" of a market that would eventually self-correct.[75] In the few cases in which marketing scholars study disinformation, the interest is rooted in protecting brand safety; for instance, studies on the relationship between brands and fake news have focused on how fake news affects brands,[76] and whether having ads alongside fake news on the same webpage influences behavioral intentions toward a brand advertised.[77]

While marketing and consumer researchers can and should do more to investigate how the current conditions of digital advertising funnel branding budgets to unethical actors,[78] two limitations significantly hinder such initiatives: disinformation has not been conceptualized as an outcome of marketing malpractice, and has been presented in popular culture as an activity that only malignant state-level actors do.

The first limitation is that, at a glance, most manifestations of disinformation, from fake news to conspiracy theories, appear unrelated to marketing and advertising practice. After all, brand managers do not intend to fund

harmful content or waste their budgets through clickbait. Figure 4.1 shows how advertisers hire third-party services to serve ads instead of selecting publishers directly, outsourcing their potential responsibility to AdTech firms.

In this scenario, it is relatively easy to shift blame when ads are displayed alongside harmful content. Advertisers would argue that AdTech firms are responsible for where the ads are delivered. In turn, Ad-Tech executives would say that it is the publisher's responsibility to produce content, and publishers would argue that they publish content that viewers prefer. All these actors would deny responsibility for benefiting financially from incendiary content, even though the money that rewards high engagement metrics incentivizes creators to publish the content that attracts clicks.

The second limitation is that the disinformation literature usually focuses on "malignant actors" that exploit digital advertising.[79] However, even though it is true that certain actors exploit the system, this view has the risk of overemphasizing *individual* actors without addressing the loopholes and flaws of the market *system*. A systemic approach to the advertising market may emphasize the systemic flaws and loopholes that can be exploited.

At the very minimum, it could be argued that disinformation could be considered an externality of the digital advertising and influencer markets. Externalities are the unintended outcomes that can be attributed to a particular market but were not listed as part of its transaction costs. Environmental pollution is a classic example of a negative externality.[80] In CMS, externalities are considered *overflows* because, whereas externalities are outside the scope of markets, overflows can be managed and corrected. Disinformation can be seen as either a negative externality or an overflow because even though market transactions specifically exchange money for online traffic, part of that money is funneled to websites promoting fake news and funding incendiary and harmful content.[81] The digital advertising market can have negative externalities even though it was not designed for this purpose.

Future Opportunities for Market-Oriented Disinformation Research

A market-oriented research stream on disinformation has the potential to identify the vulnerabilities and increase the transparency of AdTech, the 700-billion-dollar market that shapes the online content we consume. Possible avenues include examining who benefits financially from spreading disinformation, understanding the consumption of disinformation online as a form of attention-hacking, the potential exposure of marketing techniques and metrics to malpractice, and a fundamental debate about the role of private firms hosting and moderating public conversations. Furthermore, exploring the role of technology and data analytics in detecting and combating disinformation, especially in synthetic content, presents another significant area for future inquiry. Table 4.1 summarizes research themes that can advance this goal.

Table 4.1 Research themes in market-oriented disinformation research

Research themes	*Key concepts*	*Description*	*Examples of research questions*
1: The disinformation business	Business models	The analysis of how firms create and capture value in ways that profit from disinformation, even unintentionally	Who benefits financially from circulating disinformation?
	Shadow markets	The identification of gray or illicit markets profiting from the spread of disinformation	What markets directly contribute to spreading disinformation on demand?
2: Disinformation in the age of algorithmic consumption	Algorithmic consumption	The examination of the role of algorithms in spreading toxic content	How do social media algorithms distribute toxic content and form echo chambers?
	Algorithmic anxiety	The study of how disinformation thrives in the age of algorithmic anxiety	How do informational asymmetries between platforms and users lead to fringe beliefs and conspiratorial thinking?
3: Monetizing controversy and provocation in the influencer industry	Influencer marketing	The analysis of how influencers profit from extreme forms of content	What are the strategies that toxic influencers use to monetize their content?
	Monetization programs for user-generated content (USG)	The identification of how creator programs may reward toxic content	What are the performative effects of monetization schemes in driving creators to post harmful content?
4: Funding fake news by gaming programmatic ad-buying markets	AdTech and programmatic advertising	The examination of the vulnerabilities and automated ad-buying systems	Why do "good" brands sponsor "bad" content?
	Malpractice in marketing	The responsibilization of marketing professionals	What is the responsibility of marketing professionals to conduct due diligence?

(Continued)

Table 4.1 (Continued)

Research themes	*Key concepts*	*Description*	*Examples of research questions*
5: Private firms controlling speech	Digital platforms and democracy	The role of private actors in a computer-mediated democracy	Do private firms have a role in regulating free speech on their platforms?
	Democratic governance	The public oversight over tech firms and their social media platforms	How do we implement democratic governance over digital platforms while protecting democratic liberties?

Research Theme 1: The Disinformation Business

One compelling (yet simplistic) answer to why disinformation appears to circulate broadly and propagate so rapidly on social media is that disinformation is highly profitable. However, it is not always clear who profits from disinformation and how they do so. Paying attention to the business models that shape our online experience can help discern the business models that benefit from seeding and circulating disinformation online. Currently, social media creator programs reward attention-seeking strategies, while ad revenues funnel brand budgets to fake news outlets, turning disinformation into a profitable business.[82] Therefore, we must propose an alternative system that fulfills commercial goals without harm. Digital marketing practices must be reimagined to remove their role in providing financial incentives that reward disseminating misinformation on social media.

Let us look again at the so-called "Macedonia teens" case of the election interference during the 2016 US presidential election.[83] When rather blatant claims flooded social media—think of Hillary Clinton selling weapons to ISIS or Pope Francis endorsing Donald Trump—researchers tracked the origin of these posts to a location in central Macedonia.[84] In the small city of Veles, an autodidact digital marketer named Mirko Ceselkoski created a business enterprise to monetize online traffic with memes and ads relating to the US election. Acting as a clickbait coach, Ceselkoski taught youngsters, often with limited English fluency, to generate large amounts of traffic by mimicking legitimate websites and disseminating fabrications and hoax stories. Ceselkoski's for-profit approach to disinformation sent us a loud and clear message about the financial incentives behind falsehoods on social media.

The Macedonia case illustrated that social media's monetization schemes can nudge content creators to post and circulate disinformation.[85] However, even

though multiple actors profit from the broad circulation of disinformation online, not all of them profit in the same way. In a pay-per-click market, an overlap may exist between how echo chambers disseminate disinformation, how social media companies make money, and how programmatic advertising serves ads.[86] Rethinking this market system may eliminate the financial incentives to profit from disinformation. Of course, this task is beyond the scope of what a single research team can accomplish. Instead, multiple teams must investigate systematically how disinformation actors exploit social media to identify loops, holes, and malpractices.

Research Theme 2: Disinformation in the Age of Algorithmic Consumption

The role of social media algorithms in serving toxic content to users has been heavily scrutinized in the broader social sciences.[87] A social media algorithm is a set of rules and calculations determining what content users see in their newsfeeds. From news aggregators to Google searches, YouTube recommendations, and Facebook news feeds, algorithms define the content we consume in the digital environment, shaping the online experience.[88] Whereas algorithms can shape the consumption patterns of individual consumers, they can also shape cultural trends by selecting topics society talks about and what content people consume. Marketers are continuously tweaking their content to fit the algorithm, influencing the type of content digital platforms distribute. In turn, consumers resist and negotiate with the algorithm the content they consume.[89]

Since private companies own social media algorithms, they are not neutral or value-free; they reflect the biases present in society and in the people who create them.[90] Since algorithms serve a for-profit function,[91] platforms continuously tune them to keep users engaged by showing them content they are more likely to interact with, including content that aligns with their interests or generates reactions.

One example is the rise of algorithmic anxiety,[92] which refers to the growing unease people experience as algorithms dictate decisions in their daily lives, guide surveillance of user personal data, and affect the livelihood of content creators who have to game the algorithm for a living. Since algorithms are opaque and for profit, it is nearly impossible to know how they work and what data they collect. After all, algorithms know much about us, but we know nothing about them, and this informational asymmetry eventually breeds anxiety. Take, for example, a pensioner who casually watches outdoor videos of fishing and hunting, and the algorithm, recognizing their interest, begins suggesting videos of guns, which lead to self-defense and political violence content. Over time, they are pushed toward polarizing videos, resulting in a feedback loop where the person, unaware of the algorithm's biases, becomes more susceptible to conspiracy theories and radicalization. This journey drives the user from a legitimate consumption interest, a hobby, into an online echo chamber.

Research Theme 3: Monetizing Provocation in the Influencer Industry

The influencer industry has a large share of voice on social media platforms like Instagram, YouTube, or TikTok.[93] To grow their audiences, content creators must understand how the algorithm works to ensure their content gains visibility. However, this process has come under scrutiny due to the spread of incendiary and harmful content.[94] As social media is designed to be an "attention economy," circulating disinformation requires co-opting the audience's attention,[95] making the entire process vulnerable to disinformation campaigns.

Researchers found that disinformation agents can weaponize the same attention-hacking techniques that influencers use, for instance, far-right groups "have developed techniques of 'attention hacking' to increase the visibility of their ideas through the strategic use of social media, memes, and bots—as well as by targeting journalists, bloggers, and influencers to help spread their content." And they continue, "the media's dependence on social media, analytics and metrics, sensationalism, novelty over newsworthiness, and clickbait makes them vulnerable."[96]

Here, the performative role of engagement metrics is relevant. Since engagement indicates the popularity of the content, it becomes the influencer's compass for achieving success and wealth. Engagement is also the metric social media platforms use to generate rankings and recommendations, rewarding content likely to go viral. The marketing literature shows that content goes viral on social media through emotion and identity,[97] and research indicates that disinformation thrives on identity-based grudges. Henceforth, future research could examine the overlapping agendas among disinformation agents, influencers, and social media platforms, as they all aim to maximize engagement.[98] To be precise, researchers can investigate the effects of engagement metrics in the circulation of disinformation and propose alternatives for measuring performance without accentuating the dark side of the attention economy.

An overemphasis on engagement metrics and the number of followers has led to a shadow market in which buying and selling social media followers in bulk is possible.[99] This industry is a hidden engine influencers use to inflate their metrics, making them appear more attractive to brands and advertisers. While these services are designed to bolster the image of influencers, they can be repurposed to spread disinformation. Bad actors exploit this ecosystem to create the illusion of widespread interest in particular narratives and manipulate algorithms to boost the visibility of their content. This dual use—boosting influencers while enabling the spread of disinformation—requires further research.

Another aspect to accentuate is creator monetization programs. It is crucial to identify whether these programs inadvertently encourage creators to spread disinformation and harmful content to make money. While they offer financial incentives to produce content and grow audiences, they may also nudge creators to circulate sensational, conspiratorial, or incendiary content

to maximize revenue. By examining the conditions and metrics these programs use, researchers can better understand to what extent these programs have a performative role.

However, in a world where attention is currency, platform monetization schemes are not the only ways for influencers to monetize toxic content. As their livelihood depends on the platform's ad revenue, and deplatforming is always a risk,[100] many digital creators hedge their bets with alternative monetization schemes, including crypto donations and selling merchandise.[101] Their reliance on donations means they must continuously up the ante and please their most loyal followers, resulting in a feedback loop. Moreover, previous research shows that even far-right influencers increasingly adopt more extreme positions as their audiences demand it,[102] pushing the boundaries of controversy.

Research Theme 4: Funding Fake News through Programmatic Ad Trading Systems

Market researchers have an opportunity to study why "good" brands, including some world-known brands, appear to sponsor "bad" content online, including fake news, conspiracy theories, and even hate speech. One example is how advertisers announced that they would leave Twitter, which has been rebranded as X,[103] as it became a breeding ground for toxic content, including hate speech, which many advertisers perceive as a risk to their brands.[104] Ironically, many advertisers may not have been fully aware that their ads were being displayed next to hate speech until media advocacy groups exposed this issue.[105] Due to programmatic ad buying, advertisers do not always know how the system pairs ads with content, and brand managers react only when a high-profile case appears in the news media.

Academic research in the media and communication fields has examined the relationship between the digital advertising market and the circulation of disinformation online.[106] In turn, activists aware of brands funding disinformation have created pressure groups to let brands know this is unacceptable.[107] Given the issue's notoriety, it remains unclear why brand managers and digital marketers allow tech firms to siphon their budgets away from legitimate purposes. Controversial content has become an easy way to get our attention so advertisers can stop sponsoring fake news and hate speech. Even though deceptive online content is big business, and digital platforms know it, marketers and advertisers remain unconcerned, ignoring that their ads fund the spread of disinformation.

Research Theme 5: Should Private Firms Control Public Speech

The legitimacy of state actors interfering and controlling free speech has long been subject to debate.[108] Today, the discussion is specifically about the role of tech firms in moderating public discourse to tackle disinformation. When

pressed about the widespread circulation of disinformation, digital platforms refer to their efforts to increase content moderation. However, since content moderation is a commercial practice, platforms have dual incentives as their business model requires content to go viral. Platforms often outsource content moderation to third-party firms,[109] which use a combination of human moderators and automated tools to assess user-generated content and identify violations of community standards. Sarah Roberts conducted an ethnographic study of invisible workers behind commercial content moderation practices.[110] Robert's work shows that platforms face a conflict of interest in moderating content that may go viral.[111] While the platform aims to maintain a safe and positive user experience, viral content generates significant traffic and revenue, leading to its reluctance to remove it. The resulting situation demonstrates the limits of leaving content moderation to platforms while their business model calls for provocative content to increase engagement.

Fact-checking can be considered a central tool for mitigating the spread of disinformation on social media.[112] Even though social media platforms are rolling back fact-checking, like Facebook, which announced in January 2025 that it would end fact-checking partnerships, it remains a critical component of the current policies to counter disinformation. However, it is crucial to conduct more research to ensure that fact-checking and content-flagging tools are compatible with democratic freedoms and do not become censorship tools. For instance, demonetizing content and deplatforming content creators can be co-opted as a form of censorship that can be used to silence dissidents and journalists. This method flags individual content creators as malicious actors, prompting policymakers to entertain laws that border on undemocratic. Future research can explore long-term solutions that reduce the spread of social media disinformation, which are also compatible with democratic values.

Overall, we lack research on exemplars, success cases, antecedents, and consequences of fact-checking, content-flagging, and content moderation. Additionally, future research should examine whether private firms should have any role in countering disinformation and what mechanisms are compatible with democratic freedoms.

Conclusion

Disinformation has become part and parcel of the social media attention economy. It is becoming increasingly clear that on the Internet, fake news, clickbait, and advertising are interrelated parts of a pay-per-click market system. Specifically, engagement is the currency of a market where companies pay per click, and thus, there is a convergence between the dynamics of disinformation and how social media firms earn money. When Facebook's whistleblower, Frances Haugen, testified before the US Senate Commerce Committee,[113] she argued that "Facebook repeatedly chose to maximize online engagement instead of minimizing harm to users." The question is:

why would Facebook need to choose between maximizing engagement and minimizing disinformation? Perhaps one answer is that because both (disinformation and social media platforms) seek, thrive, and rely on engagement.

An overemphasis on engagement metrics is susceptible to abuse and malpractice. The need to constantly produce content that will result in a large number of clicks in a short period incentivizes an ecosystem of content creators that must rely on constant attention-grabbing schemes and algorithmic gaming efforts to make money. One especially susceptible practice is digital marketing's overemphasis on engagement metrics. To that end, we would do well to remember a quote by Simon Caulkin, commonly misattributed to Peter Drucker, criticizing the dangers of measuring (and managing) the wrong things. Caulkin wrote, "What gets measured gets managed—even when it is pointless to measure and manage it, and even if it harms the purpose of the organization to do so."[114] The aphorism means that while measures are closely linked to managing, metrics are far from innocent descriptions. They are performative as they steer what actions move critical indicators in the dashboard and can even harm organizations and society.

Another takeaway is that digital platforms' current business model can be construed as a conflict of interest due to their dual roles as moderators of public discourse and profit-oriented entities. As Europe's 2022 Digital Service Act requires, these platforms must open up their algorithms and black boxes for researchers to scrutinize.[115] Verification is essential because otherwise, platforms become involved in a conflict of interest, claiming to counter disinformation while benefiting financially from the attention generated by such content. Therefore, increased transparency and accountability from digital platforms are essential to maintaining integrity and mitigating conflicts of interest.

Further research is required to understand the vulnerabilities of digital marketing and advertising techniques to become subjects of malpractice. If the goal is to reduce the financial incentives rewarding disinformation, researchers can start by questioning the exposure of advertising systems and practices used to amplify it. The current pay-per-click setup disrupts the marketplace of ideas because several techniques can be used to win attention, eliminate the circulation of legitimate ideas, and foster strategic deceptions.

The market-oriented approach to disinformation research outlined in this chapter is an essential tool in advancing the democratic governance of digital platforms because it emphasizes the importance of studying the financial incentives and business models that drive the circulation of disinformation online. To that end, CMS is a productive theory for understanding and improving the market practices constituting programmatic ad-buying and the influencer industries. Disinformation researchers can use a market-oriented approach to explore issues related to corporate governance and exchange practices to develop a less vulnerable market system. Marketers can make their practices more resilient against misuse by examining the commercial interests driving the spread of disinformation online and implementing due diligence.

The chapter highlights the need for further research to comprehend how digital platforms funnel money to disinformation outlets and consider the potential for marketing practices to deceive and manipulate the public. As the impact of disinformation on society and politics becomes increasingly apparent, it is essential that researchers from diverse fields, including marketing and consumer research, work collaboratively to develop effective strategies for countering the spread of disinformation online.

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5 Disinformation on Digital Media Platforms

A Market-Shaping Approach*

As deceptive content circulates on digital platforms,[1] a stream of disinformation research is attempting to understand the phenomenon and counter it.[2] Disinformation research includes topics such as media manipulation,[3] polarization,[4] and its impact on democratic institutions.[5] One emerging area focuses on the digital markets that enable profit from disinformation's rapid spread. Examples include programmatic advertising,[6] commercial content moderation,[7] influencer monetization schemes,[8] and algorithmic optimization.[9] These studies have revealed cases in which market actors benefit financially from the spread of deceptive content online.

The literature calls for more research on the actors that profit from the proliferation of deceptive content on social media.[10] Previous research has called out "the avarice of advertising" in benefiting from disinformation and ignoring their responsibility in funding it.[11] Media experts urge "the advertising industry to make the sort of judgments—about truth and falsehood, acceptable and unacceptable speech—that have long been the domain of journalists."[12] Moreover, policymakers call on business managers and private sector actors to take responsibility and lead the reform on the democratic governance of digital platforms.[13]

This conceptual paper proposes that insights drawn from constructivist market studies (CMS)[14] and Market-Shaping[15] can identify how market actors benefit from circulating (or ignoring) misinformation and disinformation on social media. Conceptually, the relationship between disinformation research and CMS is one between "domain theory" and "method

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This chapter has the following adaptations. Changed the citation style from APA 6.0 to Chicago 17th edition (note, annotated bibliography) to maintain coherence with the rest of the book. The numbering of Figures and tables changed to fit the location in the book. The Figure 1 in Diaz Ruiz (2023) is replaced by Figure 3.1 in this volume updated to 2024 data. Removed in-text APA citations within the Table 5.2 to facilitate readability in book format.

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theory."[16] Domain theory refers to knowledge on a substantive issue, that is, disinformation, and method theory refers to the conceptual approach used to study it.

This paper is organized as follows. After this introduction, the literature on disinformation research is reviewed, and relevant definitions are presented. The following section introduces CMS and market-shaping; the theoretical lenses through which digital media platforms can be theorized as markets that can nudge content creators to circulate deceptive content to entice engagement. It contrasts the market practices of digital media platforms with the previous market configurations of pre-digital broadcasting and partisan media.[17] The discussion proposes a theoretical framework in which the monetization of attention and consumer engagement maximization can prompt digital media actors to prioritize profitability over polarizing content designed for a fringe but engaged audience. Finally, opportunities for future research are suggested.

Domain Theory: The Anatomy of Disinformation Research

According to the Shorenstein Center at Harvard University, disinformation research is an academic field that studies "the spread and impacts of misinformation, disinformation, and media manipulation," including "how it spreads through online and offline channels, why people are susceptible to believing bad information, and successful strategies for mitigating its impact."[18] Accordingly, disinformation simultaneously refers to a research stream and one of its manifestations.

A recent report on the democratic governance of digital platforms identifies several pressing issues, including how social media amplifies the reach of disinformation at a large scale and the emergence of echo chambers.[19] However, the report does not identify as a key issue how market actors benefit financially from the rapid spread of disinformation. This gap prevents the design of a system that reduces the financial incentives to profit from the circulation of misinformation. It is possible to create effective governance mechanisms for digital platforms by mapping the markets and market-like dynamics of disinformation.

Conceptualizing Misinformation and Disinformation

Disinformation research has grown substantially, expanding into several academic fields, like health sciences,[20] computer sciences,[21] media studies,[22] and political communication.[23] While the increase in publications has led to a better understanding of the topic, it has also resulted in theoretical confusion. Kapantai et al.[24] argue that, despite the numerous studies, most of them are isolated and ad hoc approaches, leading to fragmentation in the field. Table 5.1 introduces recent reviews on disinformation research.

Table 5.1 Recent reviews on disinformation research

Publication	*Review of*	*Purpose*	*Contributions*
Kapantai et al. (2021)	Taxonomy of disinformation and false information	Organizes categories in the information disorder ecosystem to build a common domain language	Proposes a taxonomy emphasizing motive (profit, ideological, or psychological), facticity (mostly true, mostly false, false), and verifiability
Wang et al. (2019)	Health-related misinformation on social media	Identifies the potential drivers of health-related misinformation on social media	Identifies an increasing trend of the role of social media in propagating health-related misinformation
Domenico et al. (2021)	Fake news in social media	Studies the implications of social media misinformation, especially fake news	Five themes for fake news dissemination in social media: process, channel features, outcomes, legitimacy, and attitudes
Varma et al. (2021)	Machine learning approaches to fake news detection	Analyses fake news detection technologies, feature extraction, and deep learning	Identifies the machine learning techniques that can detect fake news
Mahl et al. (2023)	Conspiracy theories in online environments	Clarifies the concept of conspiracy theories against other deceptive content	Conceptualizes conspiracy theories as adversarial accounts in which actors work in secret
Melchior and Oliveira (2022)	Health-related fake news on social media	Studies articles that extract data from social media platforms on consumer responses to health misinformation	Finds that the studies extract data from social media to understand the public's reaction to fake health information
Arora et al. (2022)	Polarization and social media	An integrative review of academic scholarship linking social media and polarization	Ambivalence on whether social media aggravates or reduces different facets of polarization
Bak et al. (2023)	False information campaigns in Europe	Reviews studies of quantitative analysis of false information, including single, cross-national, and cross-platform studies in the European Union (EU)	Finds that research covers member states of the European Union with a focus on unique events such as elections or health crises

(Continued)

Table 5.1 (Continued)

Publication	*Review of*	*Purpose*	*Contributions*
Pennycook and Rand (2021)	The psychology of fake news	Synthesizes the literature investigating why people believe and share false or highly misleading news online	The lack of reasoning and knowledge motivates poor discernment and heuristics and familiarity. Inattention disassociates what people believe and what they share on social media

Disinformation research encompasses various related phenomena such as propaganda, polarization,[25] conspiracy theories,[26] fake news,[27] and health-related disinformation[28] (Table 5.2). As the terminology multiplies,[29] researchers have mapped dozens of terms and composed glossaries.[30] Some categorizations may reduce the conceptual overlap. For instance, Kapantai et al.[31] introduced 11 types of disinformation phenomena based on motive (e.g., profit, ideological, or psychological), factuality (e.g., mostly true), and verifiability.

This paper focuses on two terms: disinformation and misinformation. The main difference between them is the presence of intent.[32]

Early studies on misinformation concentrated on statements that were not factual or conveyed false information. Therefore, misinformation initially refers to the information's quality, whether inaccurate, incomplete, or false. Recent studies define misinformation as deception rather than accuracy because it can include falsehoods, selective truths, and half-truths.[33]

Researchers seeking to understand how to correct misinformation have focused on fact-checking.[34] However, one can fact-check news, but not beliefs,[35] and studies show that fact-checking can backfire.[36] Others studied what makes people susceptible to misinformation,[37] including the sociality that enables its circulation,[38] and its effects like radicalization.[39]

Unlike misinformation, disinformation is an orchestrated activity in which actors insert "strategic deceptions that may appear very credible to those consuming them… [per] intentional falsehoods spreading as news stories or simulated documentary formats to advance political goals."[40] The term originates in military intelligence, as an adaptation from the Russian language (*dezinformatsiya*, дезинформация).[41] During the Cold War, the Soviet Union used disinformation to influence policies, distract the public, and manipulate the media, for example, by instilling uncertainty, shaping expectations, and tarnishing the reputation of political opponents.[42]

Today, disinformation refers to how public and private actors push "adversarial narratives" to achieve their strategic goals, whether political or commercial.[43] For example, the far-right's portrayal of immigrants as illegal aliens is "less about the individual stories or facts, and clearly more about the

Table 5.2 Glossary of key terms related to disinformation and misinformation*

Term	*Description*	*Term*	*Description*
Astroturfing	A centrally coordinated campaign that mimics grassroots activism by making participants pretend to be ordinary citizens	*Fake News*	*Genre*: The deliberate creation of pseudo-journalism *Label*: The instrumentalization of the term to delegitimize news media
Conspiracy Theories	Rebuttals of official accounts that propose alternative explanations in which individuals or groups act in secret.	*Greenwashing*	Deceptive communication makes people believe that a company is environmentally responsible when it is not.
Clickbait	The deliberate use of misleading headlines and thumbnails to increase online traffic for profit or popularity	*Propaganda*	Organized mass communication, on a hidden agenda, and with a mission to conform belief and action by circumventing individual reasoning
Culture Wars	A phenomenon in which multiple groups of people, who hold entrenched values, attempt to steer public policy contentiously	*Pseudoscience*	Accounts that claim the explanatory power of science, borrow its language and legitimacy but diverge substantially from its quality criteria
Doxxing	A form of online harassment that breaches privacy boundaries by releasing information intending physical and online harm to a target	*Rumors*	Unsubstantiated news stories that circulate while not corroborated or validated
Echo Chamber	An epistemic environment in which participants encounter beliefs and opinions that coincide with their own	*Trolling*	Networked groups of digital influencers that operate "click armies" designed to mobilize public sentiment
Hoax	News in which false facts are presented as legitimate	*Urban Legends*	Moral tales featuring durable stories of intruders incurring boundary transgressions and their dire consequences

* For further reading, Jack (2017) and Sessa (2023) maintain an extensive glossary.

overarching narrative. That narrative is intentionally misleading, and more importantly, adversarial against immigrants."[44] Disinformation research also studies deceptions for financial gain, like selling fake cures for COVID-19.[45] For the European Commission,[46] disinformation has a commercial angle, as it "includes all forms of false, inaccurate, or misleading information designed, presented, and promoted to intentionally cause harm or for profit."

Digital platforms define disinformation as deliberate efforts to mislead using digital technologies. "We refer to these deliberate efforts to deceive and mislead using the speed, scale, and technologies of the open web as disinformation."[47] According to Facebook's parent company, Meta, malice is the crucial characteristic of disinformation, meaning the intention to harm or knowledge that actions will cause harm.[48] However, even though digital platforms acknowledge the spread of disinformation, there is growing evidence that their efforts may be incompatible with their business models. One example is how Facebook whistleblower Frances Haugen, a former manager, testified before the US Senate Commerce Committee, revealing that "Facebook repeatedly chose to maximize online engagement instead of minimizing harm to users."[49] Haugen's claim raises questions about what makes these two options mutually exclusive.

Digital Platforms and Disinformation Markets

Previous research on media studies identified the existence of financial incentives behind the spread of disinformation; however, their proper examination remains a gap in the literature. Therefore, the study of the market structures of digital media platforms is a productive step. For Dholakia et al.,[50] "In the age of superabundant information, the emergence and rapid ascendance of misinformation, is not paradoxical," continuing, "with profit-driven media, the conditions for the rise of misinformation have been in place for decades, and social media have given a massive boost to these conditions."

Vaidhyanathan's "Anti-Social Media" conceptualized social media platforms such as Facebook as having interdependent mechanisms, including a pleasure machine, an attention machine, and a surveillance machine.[51] The pleasure machine is responsible for providing small tokens of validation and maintaining relationships to entice users to return to the platform repeatedly. Traffic, engagement, and clicks power an attention machine that allocates content competitively. Facebook uses this attention to build a surveillance machine. "Surveillance capitalism," explained by Zuboff, involves monitoring and farming user data, such as photos, likes, friendships, and behavior, to generate a data economy for commercialization to third parties.[52]

Researchers studying the digital infrastructures that allow problematic content to reach the public have identified the role played by algorithms and cookies.[53] On social media, algorithms are computational rules determining how users access data such as search results, user-generated content, and advertisements. Algorithms link content to users via HTTP cookies, which

refer to code stored on users' devices that convert online behavior into data that platforms can use to match users with content and ads.[54] Algorithms are not neutral or passive; they are performative tools that shape consumer behavior and can reify social prejudices.[55] Digital marketers influence algorithms through exchange and non-exchange interventions to drive traffic.

The structure of digital media markets tempts brand managers and digital marketers to ignore whether their ads support disinformation.[56] One example is programmatic advertising,[57] a digital market that automates ad placement with online publishers, allowing AdTech firms to bid for content allocation in real time, promising brands the ability to reach their audience.[58] However, since programmatic advertising does not consider the publisher or the nature of the sponsored content, brands can unknowingly place ads on disinformation sites.[59]

Regarding content curation, digital platforms have pledged to remove misinformation and disinformation quickly. Their partial success has sparked research on the commercial aspects of content moderation, as digital platforms outsource their curatorial responsibilities to a network of firms.[60] Content moderators have commercial incentives and operate under opaque rules; hence, moderators struggle with mutually exclusive interests. They must balance the enforcement of well-being guidelines with the financial benefits of overlooking problematic content when it has the potential to go viral.

Digital platforms host distinct actors that learn to use (and abuse) market infrastructures to drive traffic. One example is the influencer industry,[61] which often uses controversial content to game the algorithm to drive engagement. Influencers use a combination of data analytics and algorithm optimization practices to create content that resonates with fringe but engaged audiences.[62] For instance, a study of far-right microcelebrities shows that fringe communities can quickly turn into echo chambers that demand increasingly polarizing content,[63] as influencers increasingly rely financially on direct-from-consumer monetization schemes such as affiliate marketing programs, cryptocurrency donations, and merchandising.[64] As a result of these financial arrangements, influencers must continuously offer "red meat" and "dog whistles" to keep their base engaged.

Method Theory: Constructivist Market Studies

Constructivist market studies (CMS) is a multidisciplinary field that emerged from economic sociology[65] and has developed in economics, management, science and technology studies, marketing, and consumer research.[66] According to Kjellberg and Murto,[67] this research field aims to understand the changes occurring in different market systems and how various actors influence or are influenced by them.[68] This approach has been used before to study media markets. For example, Gurses and Ozcan compared a failed and a successful attempt to introduce pay TV in the United States, identifying how entrepreneurs legitimized their offerings despite resistance from incumbents.[69]

CMS aims to study "really existing markets" situated at the meso-level of the economy, such as industries and business ecosystems. Markets are empirically heterogeneous, meaning they do not necessarily reflect a single theoretical model. In other words, there is not just one market but several, each featuring unique organizing traits, not all operating as per an ideal.[70] Instead, CMS theorizes that markets (in plural) can be studied as both entities and processes, which means assessing the arrangements of configurations of a market that ostensibly exists (the market as a noun) and the practices, devices, and activities that recursively constitute it (market as a verb).[71] For instance, researchers study the collaborative actions of micro-level individual companies and consumers.[72]

One of the primary motivations for studying markets is the misleading assumption that markets are self-correcting entities. Research shows that markets often require interventions to correct negative externalities. In economics, a negative externality is an undesirable consequence that transaction costs cannot capture—pollution being the traditional example.[73] A polluting firm makes business decisions based only on the direct costs and shareholder profit without assuming the external damage to society and the environment. Neither the producer nor the user pays for externalities because pricing mechanisms often fail to capture them. On digital platforms, one could argue that the damage that social media disinformation causes to individuals and the fabric of democratic society constitutes a negative externality.

The field is constructive because it focuses on how the multiple understandings, sayings, and doings in markets shape and manifest actual markets.[74] A constructive or performative approach stresses the emergent character of markets, which means that market actors bring markets to existence through their day-to-day practices.[75] It identifies the chains of reification (how ideas about markets become concrete in practice) and abstraction (how actual practices inform concepts and theoretical ideas). Therefore, the market-shaping framework conceptualizes markets as malleable complex systems subject to change.[76] The "shaping" part means that new ideas, actors, norms, and business models shape (and are changed by) markets. For digital platforms, CMS allows us to move away from stale discussions of efficacy (e.g., "Are digital media platforms really markets?") and instead attend to the concrete effects of market-like practices (e.g., "How does the monetization of engagement metrics incentivize clickbait?").

The assumption of distributed agency dilutes individual actors' capacity to singlehandedly affect markets. Instead, an assemblage of humans and nonhumans shapes markets—for example, machines, artifacts, infrastructures, and computer programs. Studies in financial markets show that devices are essential to shape them;[77] hence, as non-human actors stabilize the market system, they remain fragile and can change through new practices. For example, MacKenzie studied how a piece of financial mathematics meant for estimating prices for derivatives shaped a new market by making certain trading practices calculable.[78]

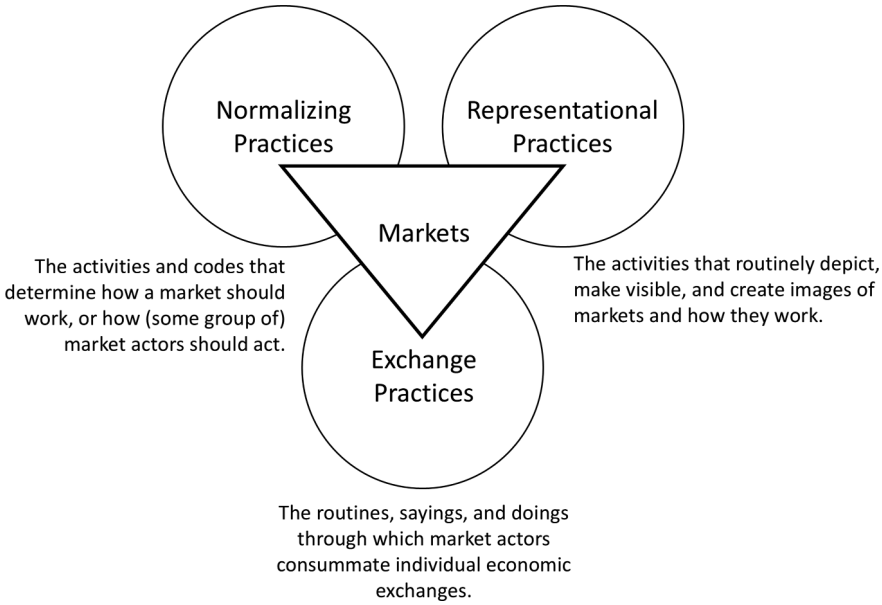

Figure 5.1 The market practices framework in constructivist market studies.

Markets can be studied through their practices. Figure 5.1[79] is an adaptation of Kjellberg and Helgesson's framework proposing that markets can be analyzed through exchange, normalizing, and representational practices.[80] Exchange practices comprise calculative and valuing activities that enable commercial transactions to take place. Normalizing practices include the conventions, implicit rules, and formal regulations market actors follow. Finally, representational practices comprise sensemaking, categorizations, and depictions that inform the collective understanding of how the market should work. Through these three practices, this paper examines digital media platforms as performative market systems that nudge actors to act in a certain way.

The Practices of Media Markets

A market practices approach is helpful in analyzing how this business model changed over time.[81] The starting point is a bird's eye view of the media's business model, a narrative description of how an organization creates, delivers, and captures value. Figure 5.2[82] illustrates the media's triple-product business model.[83] Media outlets provide information and entertainment to the public (i.e., infotainment), often at no cost, while also capturing their attention and collecting user data to sell to advertisers.

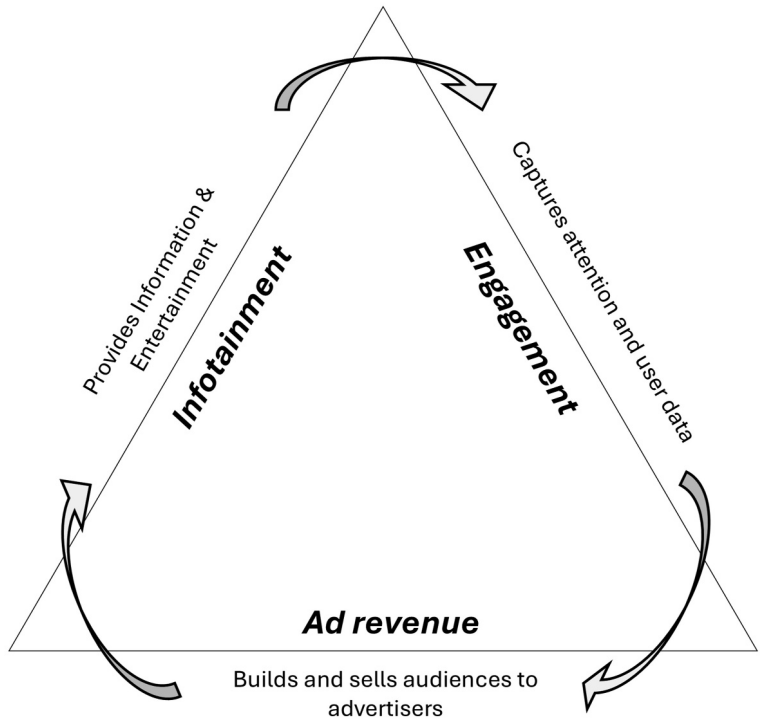

Figure 5.2 The triple-product business model of digital media markets.

Market Practices of Mainstream Media: The Broadcasting Model

Exchange practices—Mass audience. The broadcasting business model of the pre-digital era of the 20th century relied on a mass audience.[84] Operating a broadcasting station was costly, and licensees needed a large audience to attract advertisers. As licenses only covered a limited geographical area, media organizations aimed to maximize viewership, targeting the so-called "mainstream" market of moderate centrists and middle-of-the-road consumers.[85]

Representational practices—The marketplace of ideas. The mainstream media market has been legitimized through the "marketplace of ideas" metaphor, which suggests that democratic societies should encourage competition of ideas and voices, similar to commercial markets.[86] It states that democratic societies should allow market-like competition to frame public debate. This metaphor is based on John Stuart Mill's "On Liberty," which proposes a self-sustaining mechanism for public discourse.[87] For Mill, free speech allows individuals to choose from competing ideas, just like markets deliver the best goods efficiently by letting individuals choose from competing offers. This representation offers an analogy to a market where competition eliminates weak ideas. Just as consumers evaluate products by comparing

their quality to other alternatives, rational individuals evaluate ideas as long as there is no coercion or censorship. The metaphor proposes that ideas should be judged based on their merits.

Normative practices—Separation from advertising revenue. Formal rules and informal conventions affect the content we see in the media. During the broadcasting model, governments offered detailed guidelines for accepted speech and the aesthetics of neutrality. One example was the now-defunct Fairness Doctrine, removed in 1987. This US regulation required broadcast licensees to provide coverage of issues of public importance by offering multiple perspectives.[88] Broadcasting networks adhere to detailed standards regarding, for instance, the acquisition of information, confidentiality, and the use of verifiable sources. One essential consideration in broadcasting media is the strict separation of the newsroom from advertising. For example, the Finnish broadcasting corporation YLE has guidelines against providing advertisements in connection with its content. The guidelines

> take a critical attitude towards materials that have commercial interests related to them. We only publish such materials if the publishing decision can be supported by journalistic considerations or the content is such that it should be published. We refuse to be used as a tool for advertising or marketing communication.[89]

Market Practices of Partisan Media: Minimum Viable Markets

Exchange practices—Minimum viable audiences. Changes in political culture and technology led to the creation of new markets for media that catered to minimum viable audiences. A minimum viable audience is the smallest group of people that can sustain a media organization, by offering enough revenue-making opportunities for growth. With the added advantage of reduced broadcasting costs and subscription fees, cable news altered the media's approach as it became good business to target an identity-driven segment. Building upon the marketing technique of market segmentation, an organization can target a group of relatively homogeneous consumers that have similar values, goals, and attitudes. Cable media networks and syndicated talk radio shows targeted market segments based on ideological identification.

Representational practices—Controversy. In marketing, the logic of market segmentation includes the creation of a common sense of identity. Partisan media organizations like Fox News built engagement by appealing to controversy and grievances to build a common sense of identification with its audience.[90] Smaller audiences meant shifting programming from the general audience to tailored content for smaller market segments. In the United States, one prominent segment included white and militant Christians.[91] This change has resulted in a partisan media landscape, especially on the right,

with individuals gravitating toward media outlets that align with their beliefs. A prominent example is Rush Limbaugh, an American talk-radio host who built a career by prosecuting grievances against liberals.[92]

Normative practices—Opinion. One normative difference between traditional broadcasters and partisan organizations is the distinction between factual news and opinion. Journalists in partisan organizations subscribe to ethical codes of journalistic conduct, but opinion pundits and commentators do not. Commentators often use the neutral aesthetics of news, but they are not journalists from a legal standpoint. This difference allows these media organizations to distribute their viewpoints freely even if they are confused with news. However, even an opinion has limits. Libel laws prohibit the distribution of content that knowingly and intentionally harms third parties, opening the potential liability of civil litigation.

Market Practices of Digital Media Platforms: Surveillance and Attention

Exchange practices—Attention economies. In digital media platforms, a constellation of influencers and content creators can focus on fringe communities, producing content to exploit the platform's monetization schemes. Content creators are producing an overabundance of information, which means that digital media platforms have become a marketplace of attention. "In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients."[93] Rather than allocating content to viewers, digital media platforms do it the other way around: they allocate attention competitively, making content creators compete for views and likes. The system remunerates the content creators with the highest engagement metrics: views, comments, and likes.

Representational practices—Platforms. In the literature, contemporary digital media markets are called platforms. This term carries loaded meanings, as it evokes a place where one can be heard, like the public squares of the past. The notion of platforms offers a promise of political openness that neatly aligns with the concept of a marketplace of ideas. "YouTube is designed as an open-armed, egalitarian facilitation of expression, not an elitist gatekeeper with normative restrictions."[94]

The platform representation has led to the belief that all content has equal value. However, media organizations like The New York Times, The Guardian, and Aljazeera maintain content on digital media platforms that is much more expensive to produce than the opinion of a YouTuber mimicking the aesthetics of journalism. Nevertheless, both voices compete on the same platform even though influencers do not hold the same standards as journalists. Digital media platforms promise to democratize user-generated content, even though social media professions are not as egalitarian as they may appear initially.

Normative practices—Community Guidelines. Digital platforms allow content creators to earn revenue, following specific regulations for what content is permitted. Normative practices include the monetization guidelines to generate income by sharing advertiser revenue. For instance, YouTube has established guidelines determining what content is permitted and who can generate revenue on the platform.[95] These formal rules determine which content is acceptable, which can be removed, and when to deplatform content creators. Failure to comply with these policies can result in demonetization, leading to a loss of ad revenue.

Whereas platforms offer norms, some viewers converge upon fringe channels, offering content creators alternative norms for valuing and monetizing content in ways that differ from the platform's guidelines. Reports indicate that YouTube's community guidelines are insufficient in reducing problematic content, partly because some content creators circumvent guidelines by seeking notoriety in fringe communities and capturing direct-from-consumer funds.[96] Problematic content creators use alternative monetization strategies to skirt community guidelines and circumvent demonetization by establishing direct revenue streams with their fans, including requests for donations, cryptocurrencies, merchandise sales, and affiliate marketing programs. Some sites enable deplatformed individuals to receive cryptocurrencies, thus providing a financial line to problematic content.

A Market Practices Approach to Disinformation

CMS can offer a framework for digital media platforms' commercial practices underlying disinformation research. The framework depicts how the changes in business models nudge market actors toward content that can lead to qualitatively different types of misinformation. Figure 5.3 guides the argument. It builds upon Dholakia et al.'s triple-product model of media (Figure 5.2),[97] illustrating how media markets trade infotainment for user attention and commercialize it through ad revenue. The diagram shows the increasingly complex monetization systems of three stages of media markets (mainstream media markets, partisan media markets, and fragmented digital media platforms).

Disinformation slant in mainstream media markets: A hegemonic worldview. The triangle at the bottom left of Figure 5.3[98] depicts the market structure of a pre-digital era in which broadcasters targeted a mass audience. "Media concentration (three broadcast networks as well as a growing number of one-newspaper towns) made reporting from a consensus viewpoint and avoiding offending any part of your audience good business."[99] As a result, this business model emphasized consensus aligned with the beliefs and values of the majority, even if agreements were manufactured. Broadcasters appealed to middle-of-the-road consumers, avoiding polarizing large swaths of their audience.[100] Therefore, broadcasters had a financial incentive to ignore minority voices and their grievances. As a result, broadcasters' misinformation slant

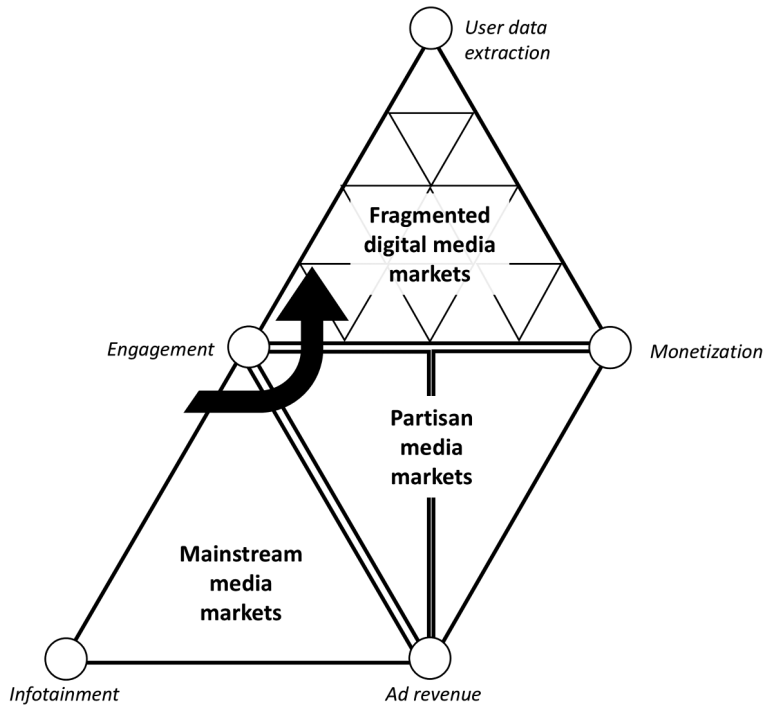

Figure 5.3 A market-shaping approach to fragmentation and monetization in media markets.

omits critical voices, ignoring minorities, neglecting their interests, and constructing the appearance of consensus.

Disinformation slant of partisan media markets: Identity-based grievances. Figure 5.3 depicts a triangle split into two sections. The figure represents how changes in the fabric of society, the advent of cable TV, and regulatory changes allowed media organizations to target niche or small segments of the population. Nenonen and Storbacka refer to a minimum viable market.[101] Here, it means the smallest possible market segment that a media organization can serve to sustain its business. Targeting a minimum viable audience where media actors could position themselves through identity politics made business sense.

Along with identity politics came a confrontational media. By appealing to shared grievances, media organizations could position their messaging to respond to actual or perceived opponents—the so-called culture wars.[102] Partisan media organizations do not need to reach the majority or centrists to make business sense. As Benkler explains,[103] right-wing partisan organizations in the United States found a large and receptive audience of identity-led beliefs. As a result, partisan media's misinformation slant is toward confrontational narratives, ideological purity, and overemphasizing minority viewpoints.

Disinformation slant of digital media markets: Engaging content. In Figure 5.3, the multiple small triangles represent audience fragmentation, including the fringe communities that sometimes espouse problematic beliefs. The combination of algorithms and HTTP cookies allows content personalization using personal data and predictive analytics to learn what content triggers engagement. As influencers and digital marketers work with engagement metrics, they learn that controversial and emotional responses are highly engaging and tend to go viral.[104] This feedback loop is performative as it incentivizes the use of attention-hacking techniques meant to capture eyeballs by any means and at any cost. As a result, clickbait and polarizing content thrive on digital platforms.

Audience fragmentation, monetization schemes, and user-data extraction are supercharging conditions for the spread of misinformation. The reason is that the digital market monetizes highly engaging content through ad revenue-sharing programs. By extracting user data and modeling it through predictive analytics, AdTech firms help advertisers to move from mass audiences to personalized content. The new business model aims to maximize consumer engagement, including the time and attention spent on the platform. One problem is that the engagement model was designed for entertainment, not information. The business model nudges content creators to produce highly engaging content, which users will see, interact with, comment on, and share with their network. Since highly engaging content is often emotional and controversial, content creators lean toward polarizing opinions as these will gather more reposts, comments, and shares.

Table 5.3 summarizes the market-based approach to disinformation research, arguing that, far from an aberration, misinformation in this type of market is an expected outcome.

Table 5.3 A market-based approach to misinformation modes in media markets

	Mainstream media markets	*Partisan media markets*	*Fragmented digital media platform markets*
Environmental characteristics	• Licenses • High entry barriers • Few competitors	• Relaxation of ownership rules • Minimum viable audience • Subscription fees (Cable TV). • New competitors	• Minimal entry barriers • Fragmented audiences • A constellation of content creators • Digital infrastructures: algorithms and HTTP cookies
Operational costs	• High	• High	• Low-to-High
Audiences	• Mass audience	• Partisan	• Fringe groups

(Continued)

Table 5.3 (Continued)

	Mainstream media markets	*Partisan media markets*	*Fragmented digital media platform markets*
Business models	• Produces content for mass audiences • Captures the audience's attention and sells it for ad revenue	• Differentiates content for market segments • Identity-based audience segmentation • Targeted ads • Ratings drive monetization	• Fringe audiences • User data extraction is used for predictive analytics to personalize content • Monetizes engagement through platform ad-revenue schemes • Uses alternative revenue streams to capture an audience's engagement (e.g., crypto donations)
Slant toward misinformation	• Hegemonic worldview • Avoids controversy and polarizing content • Ignores minority voices	• Identity-based controversies • Adversarial narratives • Emphasizes minority viewpoints	• Fringe worldviews • Pushes highly engaging content: emotional and controversial • "Shareable" content meant to attract clicks

Conclusions and Roads Ahead

It is not new to say that the rapid spread of disinformation on social media is a lucrative business. Existing research on media studies has noted that financial incentives reward the spread of disinformation.[105] However, policymakers and researchers can benefit from thoroughly examining the structure of digital media markets. Market-based theoretical lenses, like CMS or Market-Shaping, are structured around such questions and have the potential to produce a fuller and more actionable understanding of the market apparatus in need of fixing.[106] Policymakers can create meaningful interventions to restructure the market infrastructures that create financial rewards from spreading disinformation.

Looking ahead, Table 5.4 outlines potential areas for disinformation research. The first area, "the marketplace for misinformation," aims to study who benefits from spreading disinformation. Since various market actors have different business models, researchers can analyze multiple actors in media markets, not just digital platforms. AdTech companies, brand managers, influencers, and publishers all stand to benefit differently from misinformation. There is much to learn about how specific digital media markets, like programmatic advertising or influencer monetization schemers, seek financial gain from encouraging or ignoring misinformation on social media. For

Table 5.4 Research themes disinformation research

#	*Research theme*	*Description*	*Examples of research questions*
1	The marketplace for misinformation	Misinformation is profitable; its rapid spread generates financial benefits for several actors, including social media platforms.	• To what extent do the disinformation mechanisms overlap with how social media platforms profit? • What business models enable disinformation in social media?
2	Marketing metrics nudging toward misinformation	More research is needed to assess how advertising and digital marketing techniques are co-opted to fund and spread disinformation. For instance, metrics can become a self-fulfilling prophecy that shapes a pay-per-click setup that rewards attention-hacking.	• What is the exposure of marketing techniques to disinformation malpractice? • What alternative metrics can measure performance without accentuating the dark side of the attention economy?
3	Demonetization and deplatforming	More researchers should investigate the effects of the most popular disinformation counters, including demonetizing content and deplatform actors. More research is needed to study its ethics and closeness to censorship.	• What are the effects of deplatforming notorious actors? • Whether demonetization leads problematic content creators to seek alternative financial lines via even more noxious content.
4	Democratic governance of digital media platforms	A new debate is emerging about the role of private firms in moderating public and private conversations. Scholars must discuss role roles and tools, if any, for firms in moderating social media content.	• What role should social media platforms have in moderating content, if at all? • What protections should the public have against corporate overreach?

instance, with the current disentanglement of ads from publishers, it becomes easy for advertisers to remain unaware of whether their ads fund disinformation. Therefore, future research can investigate how well-known brands invertedly fund disinformation.

The second area explores how marketing metrics such as "online engagement" incentivize the production of content that seeks attention at any cost. Due to its monetization potential, engagement determines the value of online content. "The media's dependence on social media, analytics and metrics, sensationalism, novelty over newsworthiness, and clickbait makes them

vulnerable."[107] By leveraging user data extraction to predict what will generate the most likes, comments, shares, views, and clicks, "engagement metrics" aim to maximize their time spent on the platform and the intensity of interaction. Since we know that highly engaging content is emotional and controversial, it is unsurprising that influencers produce provocative and controversial content. For example, far-right organizations "have developed techniques of 'attention hacking' to increase the visibility of their ideas through the strategic use of social media, memes, and bots—as well as by targeting journalists, bloggers, and influencers to help spread their content."[108] Future research should investigate how to create a digital media market less dependent on engagement and attention-hacking techniques.

The third area invites further research into the market-based strategies for commercial content moderation, including demonetizing and deplatforming problematic actors. Today, several strategies have been proposed to counter disinformation, including an emerging toolbox that can quietly decelerate the spread of problematic content and limit the reach of pernicious groups. However, these groups often set up backup channels and alternative monetization schemes to thrive financially even after being banned from ad-revenue schemes. Future research should investigate how actors exploit social media through loopholes and unethical practices to monetize disinformation.

The fourth area calls for more research on the democratic governance of digital platforms.[109] Tech companies often claim to be democratic platforms, and now society finds itself at the odd intersection in which tech moguls aim to steer and moderate public discourse while profiting from farming private data under surveillance capitalism.[110] Scholars and policymakers must discuss whether digital platforms should be public goods or media markets and whether unelected technocrats should be involved in managing the voices of a democratic society.

Overall, the current version of digital media markets may encourage problematic behavior by rewarding it financially. Therefore, it is essential to reimagine digital media platforms' business models and ecosystems. Simply relying on free-market conditions is insufficient to correct the negative externalities that the spread of misinformation has on society. Instead, future researchers can use a market-shaping approach to reimagine a better media market.

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98 The figure represents the business models of media markets as they shift from mainstream and partisan to fragmented digital media markets. This figure is a reproduction of Figure 4 in Diaz Ruiz, C. (2023). Disinformation on digital media platforms: A market-shaping approach. *New Media & Society*. https://doi.org/10.1177/14614448231207644. It is reproduced under a Creative Commons license CC BY 4.0.
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6 The AdTech Ecosystem and Programmatic Advertising

Revenue from digital advertising is nearly US$800 billion in 2025[1] and is expected to reach US$1 trillion within the next five years.[2] It grew by double-digits during the pandemic and kept rising by 7.3% between 2022 and 2023, reaching US$225 billion just in the United States.[3] Practitioner associations, like the Interactive Advertising Bureau (IAB), often divide this market into the following three categories: search, video, and display.[4] The "search" market is the largest, capturing 40% of the total revenues, and involves tailoring resorts and ads to queries entered into search engines like Google.[5] "Video," the fastest-growing category, refers to ads embedded within the video or streaming content, usually pre-roll ads or sponsored messages mid-way through the video. Lastly, "display" deals with visual banners and interactive ads across websites, mobile apps, or social media.

Consuming adverts that have become so ubiquitous that users may not even notice them on the websites they visit and the videos they watch. However, even though ads may appear unremarkable, they are the outcome of a complex digital market run by multiple actors, from data brokers to tech companies, trading ad spaces behind the scenes at lightning speed.[6] One of the system's particularities is that ad trading involves an automated bidding process that allocates adverts through a series of machine-mediated auctions, determining which advertiser gets to serve content to which user.[7] This *programmatic advertising* system is now the industry standard, processing almost nine of ten Internet adverts.[8] Whenever someone writes a search query, refreshes a social media feed, accesses the news, or checks tomorrow's weather forecast, the accompanying ads are likely served programmatically.

Advertisers distribute their brand budgets through intermediaries, including a wide range of digital solutions called AdTech, short for Advertising Technologies. Some of the best-known firms worldwide are heavily invested in AdTech, including Google, Meta, Amazon, and Apple. Each maintains a digital advertising solution, like Google Ads, that often rests at the core of their business model. Rapid trading necessarily involves machine-to-machine communication, which means that humans, not even advertisers, are involved directly in the process. Before the broad adoption of programmatic advertising, brand managers exercised more control over the media outlets in which

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their ads appeared. Non-programmatic ad-buying meant that advertisers maintained a direct line of communication with publishers, such as newspapers, magazines, and broadcasting stations, deciding where precisely to book their ads.[9] Things have changed. Once delivered after the evening news or at the back of a newspaper, ads are now part of our digital routines.[10]

AdTech revolutionized how advertising is commercialized, with bookings exchanged in milliseconds through algorithmic systems that place and execute bids through machine-to-machine communication.[11] AdTech firms run the software to commercialize, manage, and optimize digital advertising, offering digital solutions that select and serve ads to reach a target audience by buying ad space inventory through automated software. The industry uses predictive analytics and proprietary algorithms to segment users, harvesting vast amounts of online user data to create audience profiles.[12]

However, so far, the industry has used the complexity of the digital ads market to avoid oversight. Despite controlling sensitive private information and processing hundreds of billions of dollars, the AdTech industry remains shrouded in secrecy and lacks meaningful oversight.[13] The United Nations Secretary-General has called for an initiative for information integrity, which includes increasing AdTech's accountability,[14] and 18 former European heads of state signed a letter calling the European Commission to break up Google's AdTech business. In 2024, during an antitrust lawsuit presented by the US Department of Justice (DOJ) against Google Ads' dominant position, the defense lawyers for Google fended off a jury trial by successfully alleging that the advertising system in AdTech is "too complex" for the layperson to understand; hence, it would be impossible for a jury to assess Google's practices.[15] By doing so, Google effectively weaponized the complexity of the advertising system.

The issue on which this chapter focuses is that the centralized, obscure, and highly automated nature of this market has been strongly criticized for the lack of meaningful safeguards against wasteful spending,[16] its vulnerability to ad fraud,[17] and its misuse to circulate disinformation and fund fake news.[18] Disinformation researchers have identified programmatic advertising as a significant vector for directing dark money to interfere with elections,[19] calling for oversight over AdTech,[20] but without discussing the particular mechanisms.

Since AdTech is unnecessarily complex, this chapter provides an overview for readers without a degree in digital marketing or advertising. AdTech has become crucial for the financial viability of several industries, including news media; therefore, journalists and the general public can benefit from understanding how online advertising functions. Indeed, introducing digital advertising technologies should be part of every media literacy training. Consequently, this chapter outlines the operations of the AdTech industry and its most successful and controversial product: programmatic advertising. Since only a handful of academic studies have examined its operation in detail,[21] this chapter relies on written documentation[22] published by industry participants[23] and by AdTech watchdog organizations.[24]

A Brief History of Digital Advertising Technologies

Before programmatic advertising became the industry standard, booking advertisements involved direct negotiations between advertisers and media outlets. Advertisers would reach out to publishers—newspapers, magazines, television, or radio stations—to secure their best ad space, often relying on media agencies to negotiate rates. This process required considerable manual labor, as it involved administrative work like managing contracts and operative functions like coordinating the delivery of the "creatives," the actual ads, in the correct format. Media agencies were valuable intermediaries, pooling the budgets of multiple clients to increase their bargaining power, resulting in better rates for media buys. Brand managers were the ultimate decision-makers in this system, approving media placements according to whether media publishers fit with their target audience.

Let us illustrate the system by peeking into the work of an airline's marketing department.[25] When a traffic analyst identifies that an upcoming flight has fewer booked seats than expected, the commercial officers call for an advertising campaign promoting a discounted price for that specific flight. The ads must be booked well in advance, because once the flight departs with empty seats, they cannot be sold anymore, causing a loss of revenue. The marketing team coordinates with a media agency to book the radio, newspapers, and evening news as soon as possible.

Like airline managers, media publishers have stringent deadlines. Ads are highly "perishable," which means the inventory must be sold before the evening news broadcast or newspaper prints; otherwise, empty ad slots lose all their potential financial value. Publishers required a system for trading advertising inventory on time to ensure every slot had a buyer. According to Lee McGuigan, a researcher at the UNC Hussman School of Journalism and Media who has written extensively on the evolution of AdTech,[26] the emergence of advertising technologies can be traced back to the 1950s when advertisers adopted electronic data processing technology to help them purchase ad slots more effectively. The outcome is a time-sensitive system that encourages publishers and advertisers to conduct an auction at the last second.[27]

This requirement is not unique to the advertising industry; airlines, for instance, had similar problems. A relevant example of inventory sales automation is American Airlines' partnership with IBM, which led to the development of the SABRE electronic reservations system in 1964. Originally designed to automate airline ticketing, SABRE became known as an inventory trading tool that used real-time processing to match flight availability with customers and travel agents in remote locations. SABRE is now an application that allows airlines to manage pricing dynamically, which means it changes based on the available inventory. SABRE has several similarities to early advertising systems.

The start of Internet advertising can be traced back to the 1990s when Internet entrepreneurs created the first commercial websites, seeking new

ways to tap into the promises of the early Web, including reaching a global audience with minimal costs. In 1994, the American telecom corporation AT&T commissioned the first *banner*,[28] a type of display advert, often shaped as squares or rectangles, served alongside website content. When Internet users clicked on banners, they were redirected to a landing page tailored to receive traffic from the attention. The blinking rectangle was a novelty in 1994, achieving a whopping 44% click-through rate, which would never happen nowadays, but it started a banner boom back then.

Essentially, the humble banner allowed the emergence of a new cadre of "publishers," representing any entity that owns and offers ad space inventory, such as most websites, blogs, podcasts, platforms, or apps. The publishers of yesteryear were primarily regularly printed outlets like newspapers and magazines or, later, TV and radio broadcasters. The difference in the online environment is that the barriers to becoming a publisher became significantly lower when creating a website or blog with earmarked ad space. The publisher's profile now includes small and medium enterprises and entrepreneurs using content creation to target fringe groups. Moreover, influencers—who also took on the role of publishers—are keenly adapted to the game-like features of content monetization, including the financial potential for harvesting clicks.

In the early Internet, advertisers booked banners by contacting web publishers just like they did when booking ad inserts in newspapers and magazines. Advertisers sent the creative, which is the graphic adaptation of the banner, and authorized the display on each webpage, paying for their banners per thousand views (i.e., per *mile*). However, having a one-on-one booking process was impractical, leading to multiple innovations for booking and displaying ads, including the introduction of the ad server in 1995, a digital solution responsible for hosting the creative files used by advertisers so publishers could download them without needing continuous and time-consuming communication. One of the most successful ad server firms was DoubleClick, which was purchased by Google and became the core of its advertising management solution.

Banner ads—once heralded as the future of advertising—failed to achieve their anticipated success and could not replace mainstream media at the time. While the early "netizens" were intrigued by their novelty, users quickly learned to avoid them. Soon enough, the novelty of banner ads wore off, resulting in *banner blindness*,[29] a situation in which consumers instinctively tune out obtrusive online ads. This was a significant setback for advertisers, who tried aggressive formats like *pop-ups* and *pop-unders*, which are ads loading on a second window. These ads were intrusive, creating a jarring user experience by covering the screen and loading dozens of times to make users close windows separately.

Digital advertising regained momentum in the mid-2000s when Google discovered people were willing to click on contextual ads offering relevant content.[30] It maximizes relevance by matching in-depth knowledge of

consumer behavior with the context, such as displaying ads for local lawyers when users look for divorce information. Accordingly, automated ad-trading practices have a dual purpose: trading inventory quickly and determining relevant ads by knowing the user and the context. For McGuigan,[31] "mathematics, machines, and behavioral sciences were assembled around more data-intensive systems for commodifying audiences and trying to influence consumers." The emergence of machine learning techniques allowed advertisers to perform audience segmentation, which previously relied on work-intensive offline surveys and focus groups. However, harvesting the large amount of available user data that enables marketers to target their ads precisely also requires intrusive practices akin to surveillance.[32]

The Programmatic Advertising Ecosystem

Programmatic advertising can be defined as a digital market in which advertising opportunities are sorted out through a rapid, automated auction that allocates and serves ads without human intervention.[33] It is a business ecosystem operating multiple market-like exchange systems, such as audience targeting and ad placements, that result in real-time ad trading through machine-to-machine interactions. This digital market trades billions of audience impressions daily in a split second, mainly without human participation.[34] Human input is required to set up parameters for the exchange, like minimum or maximum bidding prices, and both publishers and advertisers set their respective parameters: publishers determine the *selling* parameters of ad space, and advertisers set *buying* parameters that determine where and to whom ads will be served.

As the number of websites and Internet users increased, so did the complexity of managing the inventory of so many properties. This led to the emergence of the *AdTech stack*, which refers to the layered set of technologies that facilitate the trading, targeting, and reporting of ads across the Internet. Table 6.1 provides an overview of the most relevant actors in AdTech and its digital solutions that automate aspects of the advertiser–publisher relationship. For instance, re-targeting systems allow advertisers to follow users across websites and apps on the open Internet, and reporting tools allow digital marketers to analyze campaign results. The following paragraphs take a closer look at these tools.

The central elements of the digital advertising business ecosystem are the *ad exchanges*. These digital marketplaces allow publishers to list their inventory for sale, which can then be accessed by multiple advertisers simultaneously, who compete via *real-time bidding* (RTB). They work like a financial trading floor, but instead of trading stocks, the assets being exchanged are ad impressions. Each time a user visits a webpage, his or her data (such as demographics, location, and browsing history) is immediately assessed by the exchange, which then triggers bids from advertisers aiming to serve an ad to that particular user. This process happens quickly, often in milliseconds, with

Table 6.1 The AdTech ecosystem: actors and stack

Ecosystem	*Element*	*Explanation*
Actors	Advertisers	Companies or individuals who want to promote their products, services, or ideas use programmatic advertising to reach their target audience by buying ad space inventory.
	Publishers	Companies and content creators that run websites and social media channels where the ads are displayed. They offer their ad space, called inventory, to advertisers in exchange for revenue.
	AdTech Firms	Firms that develop and deliver the technical infrastructure of programmatic advertising.
Stack	Ad Exchanges (AdX)	Digital marketplaces facilitate the real-time bidding process between advertisers and publishers.
	Ad Networks	Ad networks are intermediaries that aggregate and sell bundled ad inventory from multiple publishers to advertisers.
	Supply-Side Platforms (SSPs)	Tools that publishers use to manage and sell their ad inventory to advertisers. It determines pricing parameters to access real-time bidding (RTB).
	Demand-Side Platforms (DSPs)	Adverts use tools to buy ad inventory from publishers. DSPs manage the parameters and audience requirements and give advertisers access to multiple ad exchanges, allowing them to bid on inventory in real-time auctions.
	Data Management Platforms (DMPs)	Insights platforms collect behavioral data and use machine learning algorithms to categorize users into segments based on their behavior, interests, and preferences. Advertisers can then use these segments to target users with ads.

the highest bidder winning the right to display their ad. The highest bidder serves their ad to each user in a format that matches the publisher's content. One of the dominant ad exchange ecosystems is Google AdX, short for Google Ad Exchange, which takes advantage of Google's access to user data and an integrated ecosystem of services, especially its search engine and the video platform YouTube.

Ad exchanges should not be confused with *ad networks*. Whereas ad exchanges are trading systems characterized by automated auctions, ad networks are intermediaries that aggregate inventory from multiple publishers, selling it as bundled packages to advertisers. Ad networks can be defined as intermediaries that specialize in specific assets, enabling advertisers to establish a presence in a curated selection of assets (ad space) tailored for specific market segments rather than a broad, generalized reach. For instance, Gourmet Ads is a vertical ad network that focuses on food and wine content.

Other similar networks cater to niche markets such as celebrity gossip and tourism, or focus on premium outlets, like Vox Media, offering well-known editorial properties. Finally, the so-called "long-tail" ad networks aggregate the ad inventory from the smaller websites that individually may not attract significant traffic but collectively represent a substantial audience.[35]

The AdTech ecosystem uses interfaces that allow advertisers and publishers to trade ad space. These solutions include supply-side platforms (SSPs) and demand-side platforms (DSPs). Publishers access ad exchanges through SSPs, which manage their ad inventory, setting up pricing rules and preferred advert formats. The publisher aims to ensure their inventory is traded at the highest possible price without repeating the process in multiple ad exchanges separately, allowing publishers to handle their inventory in one place.

Advertisers access ad exchanges through their agencies' desks and DSPs, which are digital solutions for buying ad inventory from multiple networks and exchanges. DSPs have parameters set by advertisers, including what ad spaces to bid on or avoid and what price ranges are acceptable. They also allow advertisers to select their target audience using criteria such as demographics, interests, online behaviors, and contextual activities.[36] Once the parameters are set, the DSP connects with other interfaces, conducting high-frequency bidding in multiple ad exchanges to allocate advertisers' budgets as efficiently as possible. In addition, DSPs offer advertisers reporting mechanisms to track their campaign performance metrics.

The analysis aspect of the AdTech stack is performed by data management platforms (DMPs), which are a hub of user information used for tailoring messages to a target audience. DMPs analyze vast amounts of consumer data gathered from multiple sources, called data brokers, who put together detailed information about users. DMPs use this information to create detailed audience segments, called personas, allowing advertisers to target their ad campaigns to specific audience segments.

Figure 6.1 illustrates the programmatic advertising ecosystem.[37] Let us recap: whenever users visit a website with ad space or refresh social media, their data is sent to ad exchanges, triggering calls for real-time bidding. Data management platforms categorize users into audience segments, allowing advertisers to tailor their messages and track users. DSPs assess the calls and place bids to serve an ad to each specific user and at what price. Ad exchanges conduct the auction, allocating the ad space to the highest bidder. If successful, the system requests the creative from the ad server and places it according to the inventory parameters of the SSP. Following the ad display, the system reports metrics like clicks, impressions, and conversions.

User Data: The Internet's Most Valuable Currency

The AdTech stack can only work with detailed and up-to-date knowledge about users, transforming user data—behavioral, demographic, and location—into the Internet's most valuable currency.[38] DMPs harvest vast amounts of

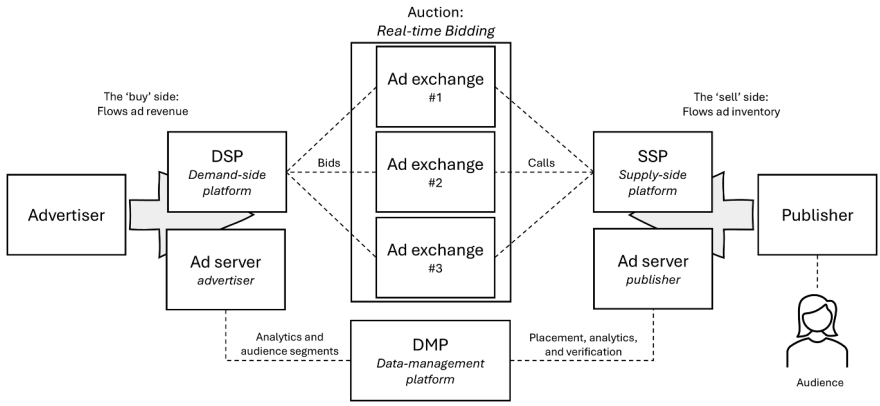

Figure 6.1 Inside the digital market of programmatic advertising.

user data, combining it into the audience profiles that form the cornerstone of programmatic advertising.[39] Whether we talk about men, 40–45 years old, who watch mixed martial arts videos, or teens who binge-watch cosmetic tutorials and dream of luxury items, the outcome is consumer segments that advertisers can use to tailor their campaign ads.

The centerpiece of the data collection process is HTTP Cookies.[40] These small text files stored on user devices gather information by tracking the user's browsing history.[41] Websites often use cookies for legitimate purposes, such as retrieving login credentials. For instance, when a user reaches a website available in multiple countries, cookies help display the correct language and location. In the case of e-commerce websites and online shops, cookies help keep track of shopping cart purchases. They can also keep track of information about website usability, including page visits, and, for advertising purposes, cookies help count ad impressions.

One particularity is their capacity to monitor users' online journeys, tracking their activity across multiple websites and social media platforms. The result is the possibility of serving ads to users irrespective of which website they are accessing. This practice, known as *re-targeting*, means reaching users based on their browsing history with personalized ads based on their recent actions on other websites. Consider, for instance, a user who has browsed an online bookstore and added books to the shopping cart but never completed the purchase. In that case, advertisers can re-target the user on other websites with ads for the same product (did you forget to purchase the book?) or offer similar books. As the user has already demonstrated an interest in a product or service, the assumption is that they can be re-engaged and, ultimately, persuaded to complete the purchase.

HTTP cookies can be helpful, like displaying a website in a preferred language, but they are also highly intrusive. Since most collected data can be qualified as personal and sensitive, several initiatives to sunset cookies have been discussed.[42] The specific concern is the ability of online vendors to use

third-party information, which means using information a party did not collect themselves for advertising purposes. Third-party cookies, once the backbone of personalized advertising on the Web, are a lightning rod for privacy concerns as they can be misused. These cookies allow advertisers to re-target users across different websites and devices, building a detailed profile of every click online. The transparency—or lack thereof—with which these cookies operate has triggered privacy laws, such as Europe's General Data Protection Regulation (GDPR).[43]

In response to increasingly strict laws regarding third-party cookies, there are initiatives to eliminate cookies altogether. Among them, Google's Privacy Sandbox is perhaps the most prominent. It proposes replacing third-party cookies with a set of application programming interfaces (APIs) designed to provide aggregated data about user behavior and advertising without individual identifiers. However, the rollout has faced multiple delays, primarily because critics argue that the initiative is designed to strengthen Google Ads' already dominant position within AdTech. Google control over the Sandbox design and implementation means that other advertising services must trust Google's commitment not to exploit its position to steamroll competitors. Finally, even though the term privacy is in the title, there are significant concerns that the Sandbox initiative will allow Google to continue with business as usual within its "walled garden."

Walled Gardens: The Black Boxes of the AdTech Industry

In AdTech, a *walled garden* is a closed ecosystem in which a single entity controls most, if not all, of the most prominent solutions in online advertising, including large amounts of user data, and ultimately determines who gets to serve an ad by controlling both the ad server and the ad exchange. The environment is designed and maintained by a single entity, which maintains significant parts as a proprietary technology—a black box—while dictating the rules of exchanges. Well-known tech firms like Google, Meta, and Amazon offer the most comprehensive advertising solutions in a seamless digital environment, making their ecosystems an attractive (and only) option for advertisers and publishers. However, the trade-off is that the lack of transparency means advertisers must rely exclusively on the platform's data and rules and trust intermediaries operating in a dominant position not to abuse their control through pricing. This closed-loop system also makes it harder for smaller AdTech firms to compete, further centralizing power in the hands of a few companies.

Yanis Varoufakis, former finance minister of Greece, has described the emergence of digital markets controlled by a few big tech firms as a form of "technofeudalism."[44] As users are locked into closed digital ecosystem, big tech resembles more of the feudal overlords who exerted power by controlling the Internet's most valuable resources—user data and attention—and extracting rents from consumers. In the case of access-based software, users can be described as "cloud serfs" who produce data and attention, generating profit

for tech firms. Varoufakis argues that the algorithm-driven feedback loop reinforces this exploitation, as users train machines to serve their preferences, which are then used to control them. Moreover, tech firms get to set and enforce their rules within their domain, now called community guidelines, to which users and advertisers must abide, much as vassals depended on their lords for protection. Consolidating multiple services within the ecosystem means that a few tech companies get to enact the hierarchical, rent-seeking structures of classic feudalism, updated for the digital age.

The most relevant walled gardens in AdTech include Google's search engine and display network, owned by Alphabet; the social media platforms Facebook and Instagram, owned by Meta; the display network linked to Amazon's e-commerce platforms; and mobile devices and marketplaces in Apple's ecosystem. These platforms have a large base of first-party user data and can offer advertising services independently.

Google is the most extensive walled garden in the AdTech ecosystem, primarily based on its search engine, even though, in 2024, a US judge found it constitutes an illegal monopoly.[45] Google harvests first-party user data by leveraging its portfolio of products, like Search, Gmail, and YouTube. In addition to user-facing products, Google Advertising Management (GAM), formerly DoubleClick for Publishers, is Google's advertising solution across multiple channels. Positioned at the intersection of the supply side of the AdTech stack, GAM allows publishers to manage programmatic and direct-sold ad campaigns. When large amounts of user data are combined with Google's programmatic advertising capabilities, the result is a dominant position within the AdTech market. While this offers unparalleled targeting capabilities for advertisers, it also raises concerns because it limits access to user data and metrics, making advertisers trust that Google delivers what it promises and is not overcharging. Indeed, pricing is the object of a separate antitrust lawsuit against Google's anti-competitive dominance over the entire advertising ecosystem.[46]

Similarly, Meta operates several well-known social media platforms like Instagram, Facebook, and WhatsApp. With billions of active users, Meta offers advertisers targeting options based on highly granular behavioral data. However, Meta strictly controls the data that advertisers can access, forcing them to rely on Meta's measurement tools. In turn, Amazon's walled garden operates at the intersection of retail and advertising, combining the Amazon e-commerce platform with delivery and affiliate programs. By focusing on product sales, advertisers can sponsor ads precisely when consumers are about to buy within the category. Lastly, Apple's walled garden is built around its hardware ecosystem through devices like the iPhone and digital marketplaces like the App Store. One particularity of Apple's ecosystem is its strict control over the type of information third-party advertisers can track. While this bolsters Apple's reputation for privacy, it also reinforces its control over ads by channeling ad spending through its platform.

Each walled garden shares some similarities regarding how it controls the entire advertising process. Tech firms boast huge audiences and the capacity to capture first-party data of their users, such as demographic information, behavioral data, interests, and purchase data. Unlike most publishers on the open Internet, who use ad exchanges and networks, tech firms sell and place ads directly. Furthermore, they typically offer self-service platforms in which advertisers set up campaigns and receive reports.

The Challenges and Limitations of Programmatic Advertising

Despite its financial growth and widespread use, the AdTech industry faces significant challenges. The most relevant are ad fraud and the waste of advertising budgets by extensive intermediary costs.[47] Moreover, the current shift toward prioritizing privacy seems to be altering the fundamental aspects of the AdTech ecosystem by challenging their previously unfettered access to user data.[48] In addition, the automated ad-trading system is a vulnerable medium for amplifying disinformation campaigns and channeling funds to fake news websites.[49] Table 6.2 summarizes the most pressing challenges, and the following sections discuss them.

Ad Fraud

Some participants of the AdTech ecosystem exploit distribution algorithms and the limits of verification mechanisms to collect advertising revenue without serving ads properly, a practice known as ad fraud. While online operators have been attempting to manipulate the ad system and profit from Internet ads for decades, the issue has worsened since ads have been priced

Table 6.2 The current challenges of AdTech and programmatic advertising

Key actors	*Explanation*
Ad fraud	The practice of exploiting advertising technologies, including algorithms and verification mechanisms, to collect advertising revenue without serving them properly
Wasteful spending	A situation in which the lack of transparency in the AdTech Ecosystem results in intermediaries capturing a sizable portion of ad spending without reaching the publishers directly involved in showing ads to potential customers
Pivot to Privacy	A stated interest in moving away from the current model that relies on surveillance to harvest private and often sensitive user data for targeted advertising
Amplifying Disinformation	Exploiting multiple parts of the AdTech ecosystem to profit, fund, and amplify the spread of disinformation online under its multiple manifestations, such as fake news, conspiracy theories, and hate speech

and traded automatically. According to Statista, the global cost of ad fraud in the digital ecosystem was a staggering US$ 88 billion in 2023 and is projected to double to US$ 172 billion by 2028.[50] Another report estimates that approximately US$ 82 billion, or 22% of the total advertising expenditure, will be lost to fraud in 2024.[51]

These estimates likely undercount the actual amount of ad fraud because the parties committing ad fraud use elaborate tactics to hide their actions.[52] Moreover, AdTech firms are not obligated to publicly disclose ad fraud because it is considered a private matter between the advertiser and the platform.[53] While some AdTech platforms opt for formal and public disclosures of incidents as part of their transparency initiatives, reports that systematically estimate ad fraud are prepared by cybersecurity firms rather than AdTech firms, particularly for walled gardens.[54] The lack of comprehensive reporting on ad fraud contributes to the perception that the issue is being downplayed.

What we know about the phenomenon is that fraudsters employ various tactics to siphon advertising revenue.[55] One of the most common tactics is *bot traffic*, where automated programs simulate human activity. A 2024 report found that bad bots, used primarily to inflate metrics and commit ad fraud, constitute 32% of web traffic.[56] While the AdTech ecosystem assumes that humans click on ads, clicking a hyperlink is an action that non-humans can perform.[57] This way, bots can manipulate the bidding process by artificially inflating the price of ad inventory, making it more expensive for legitimate advertisers to reach their target audience. On top of that, they can impersonate humans by seemingly taking relevant marketing actions, like subscribing to a newsletter or writing reviews.

Ultimately, bots generate fake impressions and clicks to mislead advertisers into thinking their campaigns are reaching real users when, in fact, they are not. Sometimes, bots cannot perform human-level tasks, such as passing CAPTCHA tests and logging into social media accounts.[58] In those cases, low-paid workers are also used to staff "click farms," manually clicking on ads and writing comments. Journalists have investigated click farm operations, with one report documenting rows of smartphones and computers managed by workers who repeatedly click on ads or social media posts, cycling through user accounts to create fake engagement.[59]

In addition to fake clicks, other types of fraud exploit human viewability.[60] To do so, websites present ads in ways that count as impressions even though they are impossible to see. Examples include resizing ads into a single pixel on a website and layering multiple ads on top of a single ad placement—the user sees one ad, but the publisher charges for multiple non-genuine views. Fraudulent publishers use multiple techniques, creating "made-for-advertising" websites that pair clickbait headlines with as many adverts as possible, resulting in a hostile user experience.[61] Figure 6.2 is a mockup of a made-for-advertising website that stacks ad placements in intrusive formats.[62]

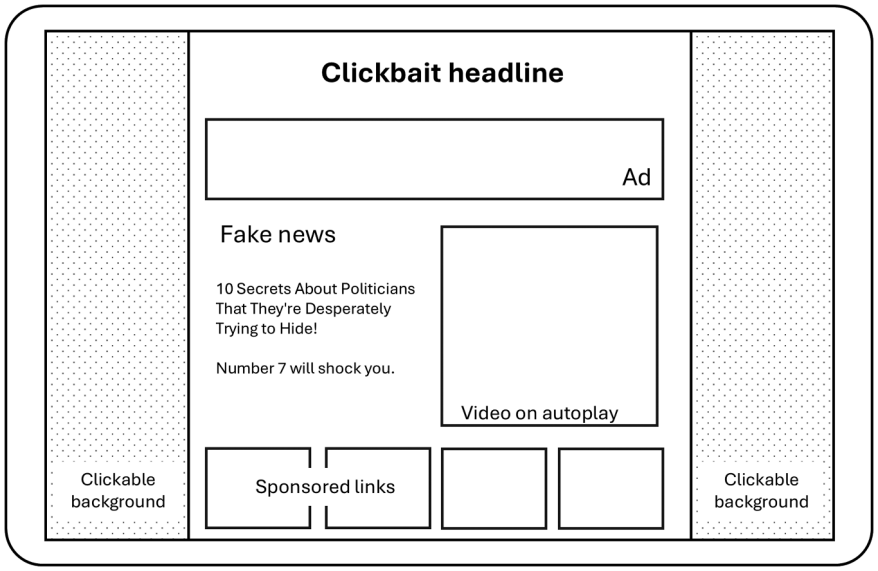

Figure 6.2 An illustration of a "made-for-advertising" website that creates a hostile user experience.

Even well-known publishers commit ad fraud. A 2024 investigation found that Forbes ran a hidden sub-domain (www3.forbes.com) accessible only to users clicking on Outbrain ads.[63] Instead of encountering three to ten ads per article, as is the standard in www.forbes.com, the variant served more than 200 adverts in a single view, to the point that "one consumer was shown 27 New York Times subscription ads and 201+ ads total." As it turns out, "the New York Times paid an effective cumulative CPM of $60.39 to serve ads to that one consumer."[64]

Even Google has been accused of committing questionable practices. A 2023 Adalytics investigation demonstrated that Google's YouTube misled marketers into believing that their ads appear on the YouTube platform when, instead, a large proportion (at least 50%) appeared in Google Video Partners (GVP), which included subpar publishers dealing with clickbait, and that use tacky tactics to force users into watching ads, like placing ads on the top of the skip button.[65]

What can be easily missed from the picture is that unethical websites are known to use fake news and clickbait to monetize advertising by attracting views via explosive headlines that are misleading or outright false.[66] Since advertisers—the buyers—do not always know where their ads are displayed, placing ads on fake news is possible. Even with mounting journalist evidence that advertisers are funding the spread of disinformation,[67] brand managers and digital marketers pay little attention,[68] treating it as an inefficiency in the advertising market.[69] As a result, ad fraud wastes advertisers' money while

simultaneously funding the spread of websites that traffic fake news and harmful content.[70]

In response, organizations like the "Check My Ads" Institute have emerged as watchdogs dedicated to holding the digital advertising ecosystem accountable.[71] While these groups monitor deceptive practices and often focus on brand safety,[72] their efforts frequently clash with the interests of major tech companies. In 2024, Elon Musk's Twitter/X took legal action against one such organization, forcing the World Federation of Advertisers to shut down its brand safety initiative.[73] This legal move sent a strong message demonstrating that calling for accountability in digital advertising could come at a heavy price.[74]

Wasteful Spending

Wasteful spending refers to the lack of pricing transparency in programmatic advertising in which intermediaries capture a sizable portion of ad spending without determining what parts are the intermediary costs and what parts go to display ads, making it challenging for advertisers to determine the actual value of their investment.[75] In 2024, the DOJ filed an antitrust lawsuit against Google's dominant position in the ad tech stack.[76] The lawsuit argues that Google controls the essential components of the AdTech ecosystem,[77] resulting in an anti-competitive situation that makes advertisers pay more than they should have in a fully competitive system.[78]

The unnecessary complexity comes from the system's byzantine structure, which obscures which fees are charged, and for what reasons. Insiders of the advertising industry refer to this situation as the "AdTech tax," describing the arbitrary fees charged by multiple intermediaries, which result in a significant portion of advertisers' budgets being wasted. A 2020 report published by the Incorporated Society of British Advertisers (ISBA) and PwC examined the cost structure of advertisers and publishers based in the United Kingdom.[79] The ISBA-PwC report found that AdTech intermediaries capture around half of the advertiser spending.[80] By 2023, a follow-up study using the same method found a slight improvement for advertisers, estimating that the amount used to pay for ads with publishers is up to 65%.[81] As a result of these transaction costs, advertisers pay between 35 and 50% "ad tax." Since the fees are usually calculated as a percentage of the exchange, the costs can add up quickly. Additional fraud detection, brand safety, and viewability verification fees increase the costs even further.

The ISBA-PwC report identified another striking issue related to AdTech's lack of transparency. The auditors could not account for up to 15% of the cost structure.[82] It is hard to imagine an industry expected to reach one trillion dollars in which clients spend money without controlling expenses tightly and where financial auditors cannot identify where the money goes. While a follow-up 2023 study reduced unattributable costs,[83] the industry's opacity remains troubling.

Another concern is that AdTech firms are conflicted between optimizing the advertisers' interests or their returns. According to ad fraud researcher Agustine Fou,[84] AdTech firms are vested in separating advertisers from their money, even if it is not in the advertiser's best interest. Fou argued that a conflict of interest exists when AdTech algorithms prioritize profit over ad performance by inflating bid prices and win rates to ensure advertising budgets are spent quickly. An increase in bid prices benefits AdTech firms but exposes advertisers to paying more for fewer ad impressions. Additionally, when AdTech platforms control both the exchange and the inventory, they may prioritize their portfolio over other ad space, driving up costs.

Pivot to Privacy

Privacy—or the lack of it—has become a significant concern in overhauling the AdTech industry.[85] Shoshana Zuboff[86] coined "surveillance capitalism" to conceptualize a system where tech companies extract the economic value of the vast amounts of personal data they collect by documenting every click users make online. For Zuboff, "free" services lure users in exchange for harvesting detailed behavioral data and usage patterns, constituting the raw material from which companies extract "rents" by transforming their everyday online activities into a data economy. The system's intrusiveness has come under scrutiny and pressure to "pivot to privacy."[87] This shift reflects growing discomfort with the fact that tech companies relentlessly harvest browsing data that include sensitive information such as location, which, in some cases, can be matched with personally identifiable information (PII) such as full name and home address.

In 2018, privacy concerns reached public awareness in the Cambridge Analytica scandal. It exposed how Facebook allowed a third-party app to reap the personal data of millions of users for an influence campaign. "By inappropriately collecting data from approximately 87 million users' Facebook profiles, the data analytics company Cambridge Analytica created tailored advertisements that allegedly aimed to influence people's voting preferences in the 2016 US presidential election."[88] Curiously enough, the users did not delete their accounts even after establishing Facebook's cavalier attitude toward private data. This can be considered a privacy paradox because people are upset about tech firms abusing private data while pretending it does not affect them personally. While users do not believe they are imminently at risk of having their data misused,[89] governments have passed data protection laws, such as the GDPR, following the scandal.[90]

Most consumers may not delete their social media accounts, but they install ad blockers. According to Statista, the number of users with ad blockers installed reached 912 million worldwide in 2023.[91] This software tool or browser extension prevents advertisements from loading on a webpage or app by filtering out the scripts that link it to the AdTech system. Consumers increasingly use ad blockers due to frustrations with their browsing experience,

bombarded by intrusive ads in a hostile ad environment. In turn, AdTech firms have been actively fighting ad-blocking software. One notable case is YouTube, which implemented several initiatives to curb the use of ad blockers in 2023.[92] It started warning users that video playback would be interrupted unless ads were allowed or users subscribed to its premium service, but then it blocked videos entirely. These actions, however, provoked a significant backlash from those users who argued that ad blockers would not be necessary in the first place if YouTube had not created such a hostile user experience. Developers started a cat-and-mouse game, tuning ad-blocking software to block the blocking blockers.

Given the tech firm's investment in the AdTech business model, an important question to ask here would be: how genuine is their pivot to privacy? Whereas tech firms claim to be prepared to transform themselves into organizations that respect privacy, their efforts often appear to be a smokescreen to deflect criticism without addressing the revenue flows. For instance, Facebook's announcement of a "pivot to privacy" was received with skepticism because it promised to eliminate its surveillance practices without addressing its AdTech model, which relies on user data.[93] According to Lee McGuigan,[94] AdTech firms keep their data-collecting capabilities "without making fundamental changes to the business model"[95] while making privacy a barrier for competitors. After all, enforcing a first-party data market benefits the most prominent players with walled gardens.

Amplifying Disinformation

The emergence of automated ad-trading practices has been linked to the widespread circulation of disinformation online.[96] There are three common scenarios in which the spread of disinformation is intertwined with the AdTech ecosystem.

First, the RTB process can make controlling where ads appear difficult. It is possible for advertisers not to identify that their ad spending is sponsoring questionable content, including fake news websites.[97] In their essay, "Fake News, Real Money," Braun and Eklund discussed how the relationship between ad tech platforms and the business of journalism often creates financial incentives for "fake news" publishers to exploit the system.[98] The authors argue that publishers frequently game the system by feeding content designed for the algorithm, exploiting traffic monetization. As a result, publishers use clickbait headlines and sensationalist content that flirts closely with fake news to attract traffic to their websites, which are optimized for ad revenue. Meanwhile, legitimate news media organizations struggle to compete because producing authentic news and investigative journalism is expensive.

Second, the mechanisms for committing ad fraud can also be used to spread disinformation. As discussed above, bots and fake social media accounts can siphon advertising funds by enhancing engagement metrics. Still, they have dual use when they can amplify a specific message, including

propaganda, by boosting the reach of incendiary social media personalities. Bots created and maintained to commit ad fraud can be repurposed, for instance, to flood social media with negative comments to attack or support a political candidate, giving the impression of a grassroots movement.

One early example is the *penabots*, pro-government accounts used in Mexico during the administration of President Enrique Peña Nieto between 2012 and 2018.[99] The Mexican administration became notorious for using online accounts to generate thousands of tweets daily, inflating certain subjects into becoming trending topics and silencing dissent.[100] Their ubiquity, along with the repetition of specific phrases, led to their quick identification and then to a nickname, *penabots* (peñabots in Spanish), short for Peña Nieto's robots. While penabots were relatively easy to identify due to their repetitive scripts and wordings, nowadays, social media bots can leverage AI tools, including the technologies that power chatbots and ChatGPT, to mimic how humans converse.[101] It is much more challenging now to identify disinformation when deepfakes can superimpose faces and synthetic audio software can mimic the voices of politicians.[102]

Third, the parties interested in spreading disinformation can use the AdTech infrastructure just like any other advertiser, amplifying influence campaigns without disclosing it.[103] In principle, anyone can go to Google Ads and buy ads for any channel, leading to a potential situation where a state actor can sponsor dissenting voices in a third country. The concern is the flow of *dark money* into the programmatic advertising ecosystem,[104] which refers to funds contributed to political campaigns or advocacy groups by advertisers or donors who are not disclosed.[105] Preventing the use of dark money in programmatic advertising is a challenge that can be compared to combating money laundering in the banking industry.

The previous three applications involve circulating disinformation by exploiting different aspects of the AdTech industry. In the first, the AdTech industry funds and amplifies disinformation by siphoning advertising funding toward questionable content. In the second case, the actors interested in spreading disinformation use the tools for advertisers (e.g., chatbots) or designed to commit ad fraud (e.g., social bots), repurposing them to amplify disinformation. In the third case, parties interested in spreading a specific message can inject money into the AdTech industry to boost specific channels without revealing undue influence.

Concluding Remarks

The chapter offered an in-depth exploration of programmatic advertising and the AdTech industry. As programmatic advertising becomes the standard method for purchasing digital ads, this system requires increased oversight, especially by marketers, due to its numerous limitations and lack of transparency, which can lead to wasteful spending and advertising fraud. AdTech's lack of transparency has effects far beyond advertisers' wasting their ad

spending. Worryingly, the tools developed to commit ad fraud have dual use: they can be repurposed to spread disinformation, gaming the algorithm to boost harmful voices and messages.

Perhaps one place to start is by critically examining the metrics and reports used in AdTech. The lack of accurate data on bots and ad fraud within AdTech's walled gardens implies that the industry does not accurately represent the extent of the problem. Since most Internet traffic comes from bots,[106] the ad fraud problem may be much more prominent than the current estimates suggest. After all, the number of clicks and impressions may lack economic value if the traffic is not from people. Moreover, these fake engagements can be used to siphon advertising funds from legitimate news media to fake news.

The cavalier attitude of the AdTech industry toward these issues results in growing calls for its regulation.[107] So far, most regulation initiatives have focused on the pivot to privacy, especially regarding third-party data management.[108] However, recent antitrust lawsuits against Google's dominant position in search engines[109] and digital advertising[110] show that governments are starting to pay attention to the underlying business model in AdTech.

The programmatic allocation of digital advertising budgets disassociates advertising from the content it endorses. This means advertisers no longer control precisely where their ads appear. Since the system is automated, digital creators and publishers have financial incentives to game the system, tailoring their content to whatever moves the needle of their engagement metrics. The machine does not perform ethical judgments about the content; hence, the automated allocation of advertising funds can end up sponsoring problematic discourse that includes incendiary personalities specializing in *rage bait* –content intentionally crafted to drive traffic by provoking anger and anxiety.

Finally, let us think about the key performance indicators (KPIs) that are so widespread in the corporate world. We know that KPIs can be gamed by managers aiming to unlock bonuses and promotions. Since the current KPIs in digital marketing almost exclusively emphasize impressions and engagement metrics, it means that digital marketing professionals have incentives to ignore ad fraud and wasteful spending, as removing bots would lower their metrics. While it is likely that most digital marketing professionals do not want their budgets used to support fake news and disinformation, their metrics create incentives for ignoring whether their brands sponsor harmful content.[111]

Verification is a critical yet neglected aspect of the AdTech stack. Its purpose is to ensure that vendors display the ads according to the contracted outlets, for instance, by serving ads to actual humans instead of bots. However, a recent commentary by Marc Pritchard, Chief Brand Officer at Procter & Gamble, claims that these verification services are insufficient, arguing that "half of digital advertising is wasted," thus making fraud and inefficiencies a severe problem in the programmatic advertising market.[112]

The bottom line is that it is in digital marketing's best interest to re-examine whether engagement metrics are the end goal for allocating advertising budgets. After all, advertisers and brand managers are ultimately responsible for their budgets, and they are in a position to demand due diligence from the AdTech ecosystem. Despite the technical complexity of the digital advertising market, marketers hold the wallet and therefore can use their budgets to hold platforms accountable, for instance, by demanding transparency in programmatic advertising and auditable reports.

Notes

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7 A Marketplace for Clicks

The Business Model of Social Media Platforms

Researchers and policymakers are starting to recognize that the corporate governance of social media companies, including their business model, shapes the type of content that circulates on social media.[1] One recent example is how TikTok, a popular social media platform, came into scrutiny when, in 2024, the US Congress conducted a series of hearings about who controls it and its potential impact for spreading disinformation.[2] Whereas the hearings were ostensibly about the addictive nature of its content, they eventually turned toward TikTok's corporate governance, especially Chinese ownership of the platform.[3] The hearings led to the US Congress and Senate passing a bill (HR 8038) which, among other things, "prohibits entities in the United States from distributing, updating, or maintaining a website or application operated by ByteDance, Ltd., TikTok, or certain other entities."[4]

The US government justified its decision to force Chinese company ByteDance to divest from TikTok, citing national security issues,[5] such as improper surveillance, problematic user data management practices, and TikTok's unwillingness to tackle the distribution of incendiary content.[6] At the same time, these concerns were geopolitical because they focus on the Chinese control of TikTok's management without addressing the elephant in the room—TikTok is not the only platform accused of exploiting user surveillance and spreading disinformation.[7] Other platforms like Facebook, YouTube, and Twitter/X, owned by private entities such as Meta, Alphabet, or Elon Musk, similarly participate in the problematic practices identified in TikTok.[8]

While the specific case of TikTok centered on geopolitics, policymakers are starting to pay attention to how corporations manage social media platforms in ways that exploit invasive user surveillance to amplify the circulation of toxic content. It brought attention to the gap in our understanding of the *business models* and management practices that benefit financially from viral content.[9] Therefore, this chapter examines social media platforms' business models, exploring their economic incentives to maximize engagement by circulating content people click on, view, and share.

The reason why democratic oversight over social media is essential is that most people do not know how online services make money. Since users access

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social media services without an upfront cost, it is not immediately obvious how these companies obtain revenue and what type of user behavior benefits them financially. Understanding tech companies' business models becomes critical because it can explain the kind of content that social media operators promote on their platforms. By programming the algorithms to distribute specific content broadly or by setting up creator monetization schemes that financially reward creators, platforms prioritize content likely to go viral, often amplifying material designed for quick consumption and sharing, like pranks and memes. Additionally, platforms elevate controversial or provocative posts, which tend to spark debate.

An Overview of the Literature on Business Models

While multiple definitions exist, one starting point is conceptualizing business models as the rationale for how an organization creates, delivers, and captures value.[10] In other words, business models are guides or blueprints explaining how companies operate, informing the underlying logic for the company's day-to-day operations and long-term strategies. In 1998, Paul Timmers[11] defined business model as "an architecture for the product, service, and information flows, including a description of the various business actors and their roles; a description of the potential benefits for the various business actors; and a description of the sources of revenues." Instead of focusing exclusively on the financial benefits of a focal company, Timmers' definition underscores the current understanding of the platform business model as the digital space that brings together a broad range of actors within a service ecosystem.

Researchers started working on business models during the late 20th century because the rapid development of information and communication technologies brought about significant societal changes, opening opportunities for new types of digital businesses, which required explanations. During the 1990s, the Internet catalyzed a metaphorical gold rush in which investors and entrepreneurs flocked to the "digital frontier" to capitalize on its promise of nearly unlimited growth. A cadre of online-first startups raced to find innovative ways to monetize the growing potential of information technologies, and several of them went public, including Amazon, back then an online bookstore.[12] Whereas Amazon evolved to become one of the leading e-commerce platforms, other early startups were either bought or shut down. While investors rushed to buy stock in Internet companies, many were surprised that online firms were not making that much money through their day-to-day operations, and neither had a steep growth pattern to justify burning investment funding.

After a period of wild speculation at the turn of the millennium, investors understood that several early Internet firms were overvalued because, while relying on emerging digital technologies, they lacked a solid business model to sustain their revenue. This period of market volatility for internet-based

companies became known as the "dot-com bubble."[13] The bubble burst when the hype of internet startups did not meet investors' economic fundamentals[14]; in other words, firms did not have enough sales or potential demand to justify the investment's long-term viability and potential profitability.

Management researchers confirm what investors encountered during the early 2000s. Henry Chesbrough famously claimed that "technology by itself has no single objective value."[15] While hype about digital technologies can raise stock prices, technologies alone are insufficient to secure long-term success without the right business model. Not only it determines what technology is developed but also how firms use it to create and capture value.

Chesbrough's observation that innovation and digital technologies were insufficient to guarantee sustained business success catalyzed the development of a research stream on business model innovation. As Brynjolfsson and McAfee remind us, "Technology is not destiny. We shape our destiny."[16] This quote emphasizes that we are not at the mercy of technological development. Instead, by deciding which technologies to invest in, people decide what is developed and how it is used.

The Role and Purpose of Business Models

The literature on business models examines the intersection between commerce, technology, and investment. For Baden-Fuller and Haefliger,[17] "the choice of the business model influences the way in which technology is monetized and the profitability for the relevant firms." Then it continues, "The business model that managers, entrepreneurs, and developers hold in their heads also determines the way in which technology gets developed." In other words, business models have a dual purpose: on the one hand, they mobilize specific technologies to tap into existing commercial opportunities; on the other, they shape what technologies to develop to create future opportunities.

The idea that managers are responsible for picking and choosing the business models that best fit their firm's capabilities and market environment is deeply rooted in the literature. For instance, David Teece, a professor of strategic management,[18] understands the business model innovation process as "selecting the technologies to be embedded in the product or service." From this perspective, business models are akin to strategic pathways. They are "cognitive devices that mediate between managerial thinking and engagement in economic activities."[19] Under this definition, managers are strategists who use business models to tinker with how firms create and capture value in the short and long term. Thus, business models are guiding or mapping devices that help managers make sense of their business environment, molding what courses of action appear viable.

On a practical level, business models are helpful when explaining how firms make money and who benefits from their services. As Joan Magretta wrote at Harvard Business Review, "A good business model answers Peter Drucker's age-old questions: Who is the customer? And what does the

customer value? It also answers the fundamental questions every manager must ask: How do we make money in this business?"[20] Most of the time, the answer to Drucker's question is self-explanatory, like a factory that makes money by transforming raw resources into finished products and selling them for a profit. Retail is another well-known business model in which an intermediary buys wholesale goods cheaply and sells them separately, keeping a margin. Of course, while the models of factories and retailers are relatively straightforward, the ones that technology-intensive firms implement can be exceedingly complex.

The value-creation process is not always self-evident for firms that rely on emerging digital technologies. Consider, for instance, the rapid growth of OpenAI, the tech company behind the popular AI tool ChatGPT. The company allows the public to use ChatGPT for free, as do several other AI firms. For the casual observer, the incentives behind such business decisions are unclear. For OpenAI, the business model combines free services, paid subscriptions, and partnerships with businesses that integrate AI solutions into their products. The free version of ChatGPT attracts a broad user base and gathers data to improve its models. By combining free and premium services (i.e., *freemium*), OpenAI can maintain a large user base and monetize its services.

Business models are also stories that explain how firms work to investors. For example, for David Teece,[21] a business model "describes the design or architecture of the value creation, delivery, and capture mechanisms it employs… business model choices define the architecture of the business, and expansion paths develop from there on out."[22] Managers spend a significant amount of time tinkering with the stories about the company's purpose and reason to exist and explaining revenue generation strategies that help stakeholders understand how the business operates and why it succeeds.[23]

The previous definitions show that business models go beyond mere descriptions. As Liliana Doganova and Marie Eyquem-Renault wrote,[24] "Business models aim at providing evidence for the feasibility of an innovative project and at gaining the interest of third parties by mobilizing the repertoires of both proof and persuasion and the logic and rhetoric elements that they include." More than objective descriptions, business models mobilize and guide managers and organizations in specific directions. Consequently, one could argue that they are *templates* that gradually bring emergent narratives and calculations into business practice. They are *generative* because they have effects that influence how market participants behave and what strategies and technologies get implemented and funded,[25] and they are also *performative* since business models "call for imitation and thus shape future ventures."[26]

The Business Models of Digital Platforms

The *platform business model* fundamentally changed how entire industries operate,[27] disrupting brick-and-mortar firms[28] by hosting simultaneous interactions among multiple relevant parties.[29] For instance, Uber, a transportation

app that connects riders with drivers, disrupted taxi services, and Airbnb, a short-term rental platform that enables hosts to rent their properties to guests, disrupted hotels. In streaming, YouTube and Spotify have transformed user-generated videos and music production and distribution. In the field of learning, Coursera, Udemy, and edX host a diverse range of quality courses from multiple education providers and offer legitimate certificates. Social media platforms have changed how people consume news, directly affecting how news media organizations earn money.[30] Nowadays, they have become the dominant business model for monetizing digital technologies.[31]

Technology management scholars define platforms as interfaces facilitating communication and exchanges between multiple parties.[32] Often described as modular building blocks, technology platforms are the foundation for other firms and developers to build interrelated products and services.[33] For example, car frames in the automotive industry have been described as platforms for designing multiple car models that share the basic architecture and system modularity while selling each variation as an independent model. This manufacturing-based approach described digital transformation based on interoperability and shared infrastructure.[34]

Various e-commerce platforms, such as Amazon, Etsy, and eBay, are designed to aggregate resources, serving as intermediaries with the clients who seek these offers. For instance, Amazon or Alibaba allow buyers to identify relevant suppliers, contact them, and close the deal. Other e-commerce platforms successfully blend aspects of e-commerce with social media. Steam, a gaming platform developed by Valve Corporation in 2003, offers nearly 30,000 video games for users to buy. Apart from managing their installation, updates, and cloud saving, it also serves as a social hub where users can post reviews, earn community awards, and modify their games by adding graphical features or creating new storylines.

Digital platforms have disrupted physical brick-and-mortar stores, becoming the predominant form of digital capitalism.[35] In contrast with industrial capitalism, which captures rents by leveraging ownership of productive assets like factories, the platform business model does not "produce" anything. Instead, platform businesses extract rents by maintaining the market infrastructures that facilitate social interactions and business exchanges among market participants.

What is so distinctive about them is that, unlike how the capitalists of yesteryear strived to own the means of production, digital platforms achieve market dominance by controlling the entire market infrastructure.[36] Platforms set how participants interact by structuring norms and action parameters, which means platform operators determine the governance mechanisms. Their guidelines determine acceptable offerings and the sanctions for breaching them. For example, Airbnb has rules about what constitutes a cleaning fee for a short rental and whether and how surveillance cameras can be installed in the properties. By shaping their guidelines, platforms set the rules for how participants interact with each other, whether they are hosts and

guests, creators and viewers, buyers and sellers, or advertisers and consumers. As a result, platform guidelines can become the industry standard once they are broadly accepted, keeping their power to ban users from participating in the marketplace.

Most e-commerce platforms have a straightforward business model—they offer a subscription or charge a transaction fee. For example, Netflix hosts a licensed and original content catalog in exchange for recurring payments. Spotify offers its extensive music library in a *freemium* model, which means it provides a limited service supported by ad revenue and a premium version for subscription. Some platforms allow users to access their services without incurring a financial cost but by charging advertisers. For instance, information platforms like Google's search engine allow users to access its services without paying; instead of a fee, advertisers are charged to serve ads and pay to place sponsored links.[37]

While social media companies, e-commerce websites, and search engines operate in different commercial environments, they all use the digital platform business model.[38] These platforms gain advantages from hosting as many user interactions as possible. Researchers use the term *network effect* to explain how, as more people use the platform, its value-in-use increases for users, creating a self-reinforcing growth cycle. In the case of Airbnb, a large and active user base makes the platform attractive to guests and hosts. A large and active number of guests encourages property owners to post listings, increasing the availability of accommodations on the platform, which attracts even more users.

Network effects emerge because platform users generate outcomes, known as *complements*, that work in synergy with the core services to enhance the value of the entire platform, making it more useful and valuable for the whole ecosystem.[39] In Apple's case, the iPhone is the core product, while apps developed by third-party developers are the complements. The iPhone would be nothing but an expensive brick without the functionalities made possible by the apps produced by external partners. Complements also benefit from a large user base. As the platform reaches a critical mass of active users, it becomes the *de facto* marketplace for conducting business in that industry.[40]

Platforms also capture rents from their central position in the network, controlling access to the data associated with all the interactions within their system.[41] In other words, while their primary function is to facilitate interactions between buyers and sellers, this function also allows platforms to harvest and analyze extensive and detailed records of every interaction. The gargantuan amount of data means platforms can extract detailed insights related to every click within the platform, gaining a gatekeeping position through which they control the *exchange flows* associated with market transactions and the *information flows* documenting them.

The vast amount of information available to platforms includes detailed behavioral data that can be used to perform predictive analytics. For example, while Google can no longer be described as anything else than an

advertising platform, its business uses predictive analytics to offer detailed targeting services. Through its free services—search engine, videos, and social connections—Google dominates the advertising business.[42] As users give up their browsing history, location, and search queries, this information is used to create detailed profiles made available to advertisers, who use the information to target users with personalized ads across the Internet, turning users into commodities.

Shoshana Zuboff has characterized the extent to which platforms control information and profit from it as *surveillance capitalism*.[43] It describes how digital platforms collect and commercialize vast amounts of user data, analyzing it via predictive analytics to influence user behavior to extract rents. For Zuboff, the rent-seeking behavior represents a fundamental transformation of capitalism because, rather than producing goods and services, rents result from controlling and monetizing what people do on platforms. Emphasizing the term surveillance helps to explain why platforms constantly need to keep users active, recording every aspect of their profile and behavior.

The Business Model of Social Media Platforms

Social media is a technology-enabled platform that facilitates user-to-user communication. It allows people to create, share, and exchange information, ideas, and personal messages through digital interactions. Multiple social media firms exist, each specializing in certain media or content. Examples include YouTube for video format, Instagram for images, TikTok for short videos, and Twitter/X for microblogging.

The business model of social media platforms has been described as engagement-centric,[44] which can be thought of as the intersection of three different offerings: infotainment, engagement, and surveillance.[45] Figure 7.1 illustrates the model.[46] Platforms host *user-generated content* (UGC) that attracts users by offering *infotainment*, a neologism that indicates the combination of entertainment and information. As users consume this content online, they produce network effects for the platform by interacting with UGC and each other. Behind the scenes, social media operators record nearly every action and click users perform while logged in, even when they visit third-party websites through their affiliate links. The detailed records are then fed into machine learning systems that identify the patterns that elicit people's reactions, further polishing the algorithms that serve such content to users. The predictive capabilities of this system, which are based on user analytics, are offered for hire to advertisers to serve messages alongside engaging content.

Social media users do not pay for social media services, at least not with money. Instead, users pay with their engagement and their data. Since platforms seek to create network effects, they thrive by having as many people as possible interacting with the platform constantly. The platform is valuable for users if everyone they know is on it. Therefore, a critical mass of users on the platform allows its operators to harvest user data to determine the type

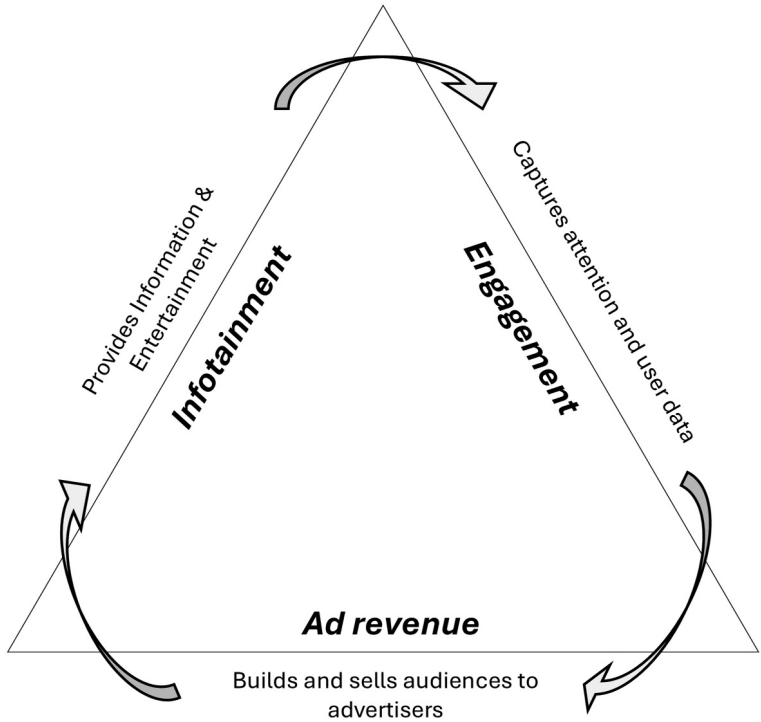

Figure 7.1 The triple-product business model of digital media markets.

of content that keeps them engaged and use their audience's predictive behavioral models in exchange for advertising revenue.

Such an attention-centered business model means social media platforms have a conflict of interest when dealing with bots. On the one hand, bots make the platform appear more active, padding up engagement numbers to increase the appearance of value for advertisers and users; on the other hand, bots are not real users, which means that bots make predictive models less accurate and can make people leave the platform if they perceive it lacks meaningful human interactions.[47]

Social media firms describe themselves as platforms, thus implying a version of participatory democracy in which anyone can have a voice that can reach the public.[48] People can start a blog, podcast, or streaming channel, gaining the possibility of generating revenue and publishing engaging content that makes the platform valuable. At the core, social media platforms remain for-profit corporations, therefore they have a financial interest in promoting the types of user behavior that make their platform a successful business venture. In practice, it means that platforms do not encourage and reward all kinds of content and content creators equally, and yet, identifying precisely what type of UGC platforms push is neither trivial nor obvious.

User-generated Content

UGC, such as images, videos, and text created and posted by users online, is the main attraction of social media platforms.[49] The concept of UGC emerged in the early 1990s when Internet-enabled users could create and distribute their content without relying on professional media. One early example is Wikipedia, probably the largest repository of UGC, produced by the collaborative effort of voluntary individual editors, writing and polishing encyclopedic entries. In the 1990s, UGC was still a limited occurrence, discussed as a form of humanity's collective intelligence.[50] Nowadays, social media networks host a whirlpool of videos and text generated by users, ranging from product reviews to pure entertainment. Users interact with UGC by commenting, rating, and sharing.[51]

For social media firms, UGC offers an excellent vehicle for keeping users active and interacting with content. Given that social media firms have data harvesting capabilities and predictive analytics, they can identify the most engaging UGC and then use these insights to write monetization guidelines that nudge creators to publish precisely that type of engaging content.[52] Once identified, firms can use their algorithms to distribute engaging UGC as broadly as possible. Previous marketing research has found that content that elicits strong emotions, whether positive like awe or negative like anger, is likely to be shared and go viral.[53] Therefore, social media can be interpreted as a game of "grab-and-keep" attention, leading to the widespread practices of *clickbait* and *ragebait*, referring to content designed to encourage clicks through provocative headlines or directly appealing to anger. It often relies on adversarial narratives, including "us-vs-them" sentiments that cast tribal and polarizing emotions to drive traffic.[54]

Another strategy to attract attention is to prioritize fresh content; hence, platforms are less likely to recommend older content, even if it is just a few days old. The machine keeps it as a record but does not serve it to user feeds. As a result, creators are encouraged to publish regularly, constantly outperforming themselves with more original, creative, and provocative content each time.[55] Take, for instance, how influencers attempt increasingly dangerous stunts,[56] dares, and pranks that can lead to antisocial behavior.[57] As Kirsten Fleming at the New York Post writes, "TikTok pranks have gone from dumb to criminally unfunny."[58] The reason is that as their novelty evaporates, influencers must outdo themselves with more provocative stunts.

Likewise, Rebecca Lewis' work on far-right influencers shows that even provocateurs drift into more radical positions over time.[59] Her work suggests that the role of the algorithm may be far more circumscribed than is typically implied and that it is the fringe communities consuming content that instigate the radicalization of content creators, not the other way around. The result is that viewers drift from consuming less radical to more radical and reactionary content, dragging creators who must play catch up with competing influencers and their previous content, becoming more strident.[60]

Along with newness, engagement is the most important metric for social media. Engagement in digital marketing refers to any action a user takes in response to a post or content on social media, including likes, comments, shares, reposts, and direct messages. Engagement metrics determine the content platforms serve in users' feeds, and help advertisers to assess the success of their communication strategies and maximize their ad performance.

From the social media companies' perspective, engagement and newness are the drivers that characterize desirable UGC. Therefore, they create user monetization guidelines that promote precisely the type of content that keeps users engaged. Revenue-sharing programs are arrangements between social media platforms and content creators that allow the latter to earn a portion of the revenue generated by their content. Typically, these programs are based on the number and quality of views, clicks, likes, comments, shares, or other engagement metrics the content receives. Platforms have several rules for monetizing content, but as a rule of thumb, the content creators who can capture their audience's attention reap social and financial benefits.[61] Furthermore, content creators can also monetize their popularity, measured by the number of followers and subscribers, by striking deals with sponsors and brands, for example, through marketing affiliate programs that further enhance the built-in monetization system of social media platforms.[62]

Theorizing the Business Model of Social Media

Understanding social media's business model can generate new ways of thinking about its susceptibility to the circulation of disinformation and other harmful content. Thinking about social media not as platforms but as digital marketplaces can open new research opportunities. For instance, researchers can identify precisely what is for sale on social media, which could be argued is the commodification of attention.[63]

A Marketplace for Attention

In 1971, Herbert Simon, a Nobel Prize laureate in economics, argued that attention is the "bottleneck of human thought," limiting our capacity to act in stimuli-rich environments.[64] For Simon, information management is a misnomer because the problem is not managing information but instead managing attention. He wrote, "In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence, a wealth of information creates a poverty of attention and a need to allocate it efficiently among the overabundance of information sources that might consume it."[65] When attention is a scarce resource, it becomes a valuable commodity.[66] We could argue that, on social media, attention is scarce while information is superabundant; hence, attention is an economically valuable resource.

According to the American Psychological Association, attention is a "state in which cognitive resources are focused on certain aspects of the environment rather than on others, and the central nervous system is in a state of readiness to respond to stimuli." Human beings must focus on certain things at the expense of others because we do not have an infinite capacity to attend to everything. Attention refers to the ability to focus on and concentrate on a particular task, selectively giving entire focus to something while blocking out distractions.

Online, the attention economy describes a marketplace where people's continued interaction is the commodity for sale.[67] Before social media, a person visiting a website, like a news provider, would read or watch the content and leave it, moving on with their life. Now, the more attention a post receives, the more its visibility translates into financial rewards for the platform participants: creators, publishers, and, most certainly, the social media operators who want to keep users' attention on their platforms. The result is a user feed design that can be endlessly scrolled down. This phenomenon has several names, including infinite scrolling, and it means that individuals find themselves in an endless loop of digital content: scrolling, stopping to click on a post, and then returning to scrolling.[68] Influencers and content creators find themselves in a similar loop: they must endlessly design content to get people to stop scrolling and click. By examining usage patterns, platforms train their recommender algorithms to serve content that attracts people's attention. As their algorithm learns how to trigger emotional and moral responses, users get to see posts that predictably trigger clicks.[69] Alas, the direct outcome of a system in which clicks mean money is that controversy and provocation thrive.

In the book "Antisocial Media,"[70] Siva Vaidhyanathan argues that social media can be described as a multi-part machine. First, an *attention machine* captures users' attention competitively using algorithms that serve the content most likely to elicit clicks. The purpose of this machine is to hijack attention long enough to convince users to take specific actions. Then, the *pleasure machine* provides instantaneous gratification tokens through likes and other forms of validation. Finally, the *surveillance machine* harvests behavior and preferences data to build detailed behavioral models that the platform can use to optimize the content or commercialize it to third parties. Vaidhyanathan warns that, when put together, those three parts can negatively affect democracy because they result in an *influence machine* capable of the large-scale distribution of personalized propaganda, including content designed to distract people from relevant issues and energize culture wars.

A Marketplace of Attention Versus Ideas

From the users' perspective, it is not immediately apparent why attention is an economically valuable resource on social media. Instead, the term platform used by social media firms to explain and justify their services often describes

a place where users can exchange ideas. The distinction between *ideas* and *attention* is subtle but relevant. In "The Politics of Platforms,"[71] Tarleton Gillespie proposes four interpretations of how YouTube describes itself to the public as a platform.[72] The first interpretation is computational because it borrows the understanding of the platform as a form of digital infrastructure that can host the content users generate. The second interpretation is an architectural interpretation akin to a raised surface on which people can stand and be heard and seen by others. The third interpretation is figurative because it implies that social media firms do not have the role of gatekeepers or censors policing what users post; instead, platforms are merely facilitators that empower users to connect and help advertisers serve them targeted messages. Finally, the fourth interpretation is political because the platform is a formal set of principled goals for political values, including free speech.

When Elon Musk bought Twitter/X, he described the platform as a digital town square,[73] a metaphor that implies a shared online space where people gather to participate in public discourse. Musk argued that his platform could replicate the function of the town square in the digital realm: a *marketplace of ideas*. The metaphor of a marketplace where ideas are bought and sold to choose the best ones is closely linked to the perceived advantages of liberal democracies and free market economies.[74] Therefore, social media is often discussed through the prism of free speech, and, as Gillespie shows, commentators frequently invoke notions associated with democratic ideals to discuss its functioning. Although imperfect,[75] the metaphor remains a guiding ideal for structuring social media and its role at the core of a democratic society. Proponents argue that exchanging ideas on a global scale enables and empowers vital democratic practices, including participatory governance, and thus, social media platforms should be neutral and not take sides on political or social issues.[76]

Paradoxically, the ideals of the *marketplace of ideas* do not translate well to market practices. Indeed, the business logic that frames social media as the *marketplace for attention* clashes with the liberal ideals of an abstract marketplace of ideas. The reason is that the marketplace of ideas is a political concept that suggests that freedom of expression and open discussion lead to the best possible outcome for society[77]; however, it does not describe what commodities are exchanged. Instead, it conjures a vision for merit-based social organization[78] in which competition is the basis for identifying winning ideas[79]; hence, all citizens should be allowed and encouraged to participate in selecting the best ideas from a set of several alternatives.[80]

While the premise of the *marketplace of ideas* fits within the framework of liberal democracy, the type of rational and informative content required to maintain it is too dull for social media that is modeled after a *marketplace of attention*. The reason is that, on social media, ideas are not discussed and assessed on their merits but on their potential to attract and keep engagement. As Claudio Lombardi, a lecturer in commercial law at the University of Aberdeen, wrote,

> Content delivery on today's Internet may give the illusion of a marketplace of ideas, but it is not a market in which the user goes shopping for ideas in an open competition. Every internet user occupies an online environment tailored for him or her, polarized among different "communities of interest," each segregated in such a way that network effects are amplified.[81]

Henceforth, social media does not necessarily reflect the ideals of a marketplace of ideas and instead can be more correctly characterized as a marketplace of attention or, more precisely, a marketplace for clicks.

Paths Forward

This chapter has proposed a framework for understanding the business models that underlie social media platforms. It introduced the literature on business models and digital platforms to explain why social media firms need as many active users as possible and thus have incentives to promote engaging UGC. Closely examining social media's business models opens several opportunities for future disinformation research. Ultimately, by looking at the business model of social media and paying close attention to the commodities they exchange, disinformation researchers could examine the production and consumption practices that make the circulation of disinformation profitable. Table 7.1 proposes some of these research themes.

The first research theme on the *production* of disinformation is similar to comparing the social media business model to manufacturing. Like pollution, which can be described as a negative and undesirable externality of manufacturing processes, disinformation can be considered a byproduct of social media's regular operation.[82] The comparison suggests that disinformation is not an incidental accident but a result of the design and operational mechanisms prioritizing virality and engagement. Future research projects could investigate the business structures of social media that can lead to the amplification of disinformation for profit. Commercial practices like commercial moderation,[83] the influencer industry,[84] and programmatic ad trading[85] can benefit financially from the spread of disinformation, even if the outcome is unintentional.

Regarding the *consumption* of disinformation, there is a need to investigate the impact of social media business models on user behavior and well-being. While it is clear that social media platforms rely on user data to generate revenue and increase engagement, the extent to which these platforms promote certain types of content and user behaviors remains unclear. Whereas social media's business model is anchored in *analytics* and *engagement*, a rational observer may notice that the logical extensions of those practices are *surveillance* and *addiction*.[86] The drive to maximize user engagement encourages the design of algorithms and interfaces that continuously capture it by any means, including by identifying and manipulating the

Table 7.1 Avenues for disinformation research on social media business models

Research themes	*Concepts*	*Examples*
The production of disinformation online	Producers	Who benefits financially from producing and distributing disinformation and other harmful content?
	Digital advertising	How digital advertising technologies are used and misused to plant and distribute disinformation online?
The consumption of disinformation on social media	Consumer culture	What is the socialization and culture for consuming and amplifying disinformation?
	Identity projects	To what extent is the consumer of disinformation an active co-creator of a fantasy?
The intermediaries that amplify disinformation for profit	Influencer industry	What is the role of influencers in profiting from amplifying disinformation?
	UGC monetization	What type of content does UGC monetization promote?
	Commercial moderation	To what extent can private actors moderate public speech?
The money trail of disinformation on social media	Investors	How do we identify the actors that fund disinformation online?
	Dark money	What mechanisms exist to trace the money meant to amplify disinformation, and how do social media firms profit from it?

behavioral patterns that sustain interaction, which can lead to compulsive usage patterns akin to addiction.[87] Therefore, it could be argued that the mechanisms driving the success of social media platforms also give rise to ethical dilemmas.

Next, focusing on *intermediaries* shifts attention to the actors who amplify disinformation on social media for profit.[88] These intermediaries include influencers and content creators exploiting disinformation for financial gain, leveraging harmful content to maximize their reach and build an audience.[89] This perspective calls for research into how these intermediaries monetize their UGC to promote disinformation through ad-sharing schemes and, sometimes, direct payments. Future research could identify the financial incentives that encourage the proliferation of disinformation by examining the intermediaries who amplify it.

Finally, following the money trail of disinformation means tracing the financial flows that allow some of the ecosystem's participants to profit from circulating harmful content. It also allows for identifying how third-party actors anonymously inject money through the advertising market.[90] Researchers could focus on uncovering the economic networks, including cryptocurrency

transactions, that covertly fund disinformation efforts. The outcome is the creation of effective interventions and regulatory measures to disrupt the money flows that sustain disinformation.

Notes

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33 Gawer and Cusumano, "Industry Platforms and Ecosystem Innovation."
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35 Rahman and Thelen, "The Rise of the Platform Business Model and the Transformation of Twenty-First-Century Capitalism," 178.
36 Rahman and Thelen, 179.
37 In 1998, Brin and Page, Google's founders, argued in their seminal work "The Anatomy of a Large-Scale Hypertextual Web Search Engine" that a search engine should not rely on advertising. The document provides compelling arguments about the impact of advertising on search engine results. In their view, search engines are susceptible to manipulation in the advertising model because advertisers are incentivized to inject their content into the results, shaping them to benefit their interests. Brin and Page wrote, "We expect that advertising funded search engines will be inherently biased towards the advertisers and away from the needs of the consumers." Other quotes underscore the performativity of digital advertising, such as (1) "We believe the issue of advertising causes enough mixed incentives that it is crucial to have a competitive search engine that is transparent and in the academic realm," and (2) "In general, it could be argued from the consumer point of view that the better the search engine is, the fewer advertisements will be needed for the consumer to find what they want. This of course erodes the advertising supported business model of the existing search engines."
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67 Goldhaber, "The Attention Economy and the Net."
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8 Echo Chambers on Social Media

Distinguishing between Filter Bubbles, Epistemic Bubbles, and Structures of Strategic Discrediting

The concept of echo chambers has gained traction in the news media when journalists and pundits use it to explain how extremist narratives originating on the fringes of the Internet become normal in mainstream political speech. During the 2024 US presidential debate between Kamala Harris and Donald Trump, the Republican nominee baselessly claimed that Haitian immigrants were eating cats and dogs, the pets of the residents of Springfield, Ohio, even though city officials debunked the claim as unsubstantiated.[1] NewsGuard, a fact-checking organization that investigated the origins of the claim,[2] found that it sparked off from a Facebook post in which "the cat owner was 'an acquaintance of a friend' and that she heard about the supposed incident from that friend, who, in turn, learned about it from a source that she had"—classic triple hearsay at work.[3] Even though the claim did not originate from a news organization, it was amplified by far-right influencers on social media. It eventually reached a televised presidential debate, where 67 million people viewed it, and was further spread via Elon Musk to his 162 million followers.[4]

The echo chamber concept has been used to explain the consequences of the algorithmic curation of social media. In 2011, the New York Times ran an article discussing the perils of being served online information that one already agrees with, including watching only a few news sources and consuming whatever content an algorithm predicts we want.[5] In the article, the journalist interviewed Eli Pariser, the author of "The Filter Bubble: What the Internet Is Hiding From You."[6] For Pariser, a *filter bubble* is a phenomenon in which online algorithms selectively expose users to some sources more than others, resulting in a form of intellectual isolation due to the algorithmic curation of a personalized feed. Since then, the terms filter bubbles and echo chambers are often used interchangeably to mean that people retreat into online spaces where they encounter only ideas they agree with and voices they trust.[7]

The problem with equating echo chambers with filter bubbles is that the scientific literature has not reached a consensus regarding whether or not the phenomenon described by Pariser exists.[8] Researchers have focused on whether search engines and recommender systems expose users to only an overlapping selection of news media sources, yet they have not found strong evidence.[9] However, dismissing the concept of media echo chambers is premature because

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they cannot be reduced entirely to algorithmic curation. Instead, previous research has focused on the "echo chamber effect,"[10] in which the outcome of an insular epistemic experience is that fringe and extremist beliefs appear more popular than they are, leading to radicalization.

Theoretically, this chapter argues that the existing literature uses only one concept, *echo chambers*, to refer to at least three overlapping but distinct phenomena: (1) selective exposure to news media online, (2) epistemic isolation, and (3) structures of strategic discrediting. First, selective exposure refers to the digital infrastructures, like curation algorithms, that filter how the information flow reaches consumers,[11] resulting in a *filter bubble* that limits the consumers' worldview to a partisan interpretation.[12] Second, epistemic isolation occurs when a group of people does not integrate all relevant sources of knowledge, resulting in an insular worldview: an *epistemic bubble*.[13] Third, *strategic discrediting* means social media is weaponized into steering groups to take more antagonistic views over time,[14] incentivizing discussants to post shocking but shallow messages directed against their perceived opponents.[15]

This chapter aims to disambiguate the concept of echo chambers by distinguishing these three interpretations. It focuses primarily on social media echo chambers and illustrates their particularities with two cases: the *flat Earth* conspiracy theory and the growth of online misogyny in the *manosphere*.

Conceptual Framework

Selective Exposure to News Media

The dominant interpretation of the echo chamber concept reflects the acoustics phenomenon: a physical enclosure that produces a reverberated audio signal. When applied to media, especially news media, the echo chamber means encountering news and news sources that largely overlap with a person's positions, leading participants to believe that their viewpoints are valid because they are held by others who reiterate or affirm their preconceived ideas. In other words, echo chambers are used to argue that users are exposed primarily to sources of knowledge that confirm their pre-existing beliefs, which is something they expect to hear. As the same ideas continuously swirl, they convey the false impression that specific positions are popular and widespread, even if they are not.[16]

This interpretation—that media echo chambers involve a conceptual form of reverberation—is the dominant. For instance, R. Kelly Garrett, a professor at Ohio State University, operationalized echo chambers by studying how individuals seek opinion-reinforcing information that influences their news consumption patterns.[17] His 2009 study indicated that political Internet users seek political news sources that confirm their ideological perspectives while avoiding those that challenge them.[18] Contemporary researchers have focused on whether audiences are subject to *selective exposure* when the algorithm

identifies news media sources that reinforce pre-existing beliefs while undermining alternative viewpoints. Therefore, researchers often design their studies to test whether the news that flows to consumers represents overlapping news sources, for instance, by emphasizing only one side of the political spectrum.[19]

After repeated attempts, researchers have not found sufficient evidence to demonstrate that the Internet creates selective exposure to news media.[20] It appears users online have access to and are served a variety of news media sources,[21] leading researchers to argue that the effects of echo chambers are overstated.[22] Consequently, experts claimed the echo chamber effect might not exist,[23] arguing that media pundits use terms like echo chambers to describe a social phenomenon called *homophily*, the tendency of people to hang out with like-minded people; in other words, similarity breeds connection.[24] The argument means that echo chambers, if they exist, are not a digital phenomenon, but are instead a manifestation of a natural human tendency that existed long before social media.

While these critical studies show that selective exposure to news media is insufficient to characterize echo chambers entirely, a close reading reveals that the authors operationalize a version that draws primarily from the filter bubbles understanding.[25] That is, the view in which algorithmic curation systems are entirely responsible for creating an environment that feeds people what they already believe by limiting users to only certain types of news media.[26] While the studies explicitly investigate the lack of diversity of news sources online,[27] they say nothing about the particularities of how social media creates conditions that lead people to amplify fringe beliefs, including misinformation. One reason is that these studies focus exclusively on the information flow between online news media sources and consumers, specifically whether algorithmic recommender systems hide them. Thus, they do not address how the digital infrastructures of social media performs or shapes communication and community dynamics.

Epistemic Isolation

Arguments on echo chambers often describe them as an environment where the same arguments circulate repeatedly, and alternative viewpoints are conveniently omitted. Here, Thi Nguyen, a philosophy professor at the University of Utah, draws a critical distinction between echo chambers and *epistemic bubbles*.[28] Even though both cases exclude relevant sources of information, their mechanisms differ: echo chambers actively discredit alternative information sources, while epistemic bubbles result from inadequate coverage by omission. An example of epistemic bubbles is how a professional community, say architects, may overemphasize knowledge sources coming from their field without necessarily including all the relevant insights from other adjacent professional communities, like civil engineers. This omission results from how communities of practice work, leading to an overemphasis on sources originating from *within* the community.

Academic silos are an example of epistemic bubbles that result in an environment where the subject domain has boundaries. Even though other information may be relevant, the academic community uses certain currencies, like the prestige of specific academic journals or intellectual origins, to decide whether to include or ignore a particular perspective. As a result, scholars tend to focus intensely on narrowly defined disciplines, often at the expense of cross-pollination across academic fields.[29] In-depth knowledge is beneficial, but not at the expense of epistemological fragmentation and intellectual isolation. Indeed, compartmentalizing knowledge has limitations; for instance, advances made in one field may go unnoticed or unappreciated in others, hindering opportunities for innovation. If intellectual exchanges remain locked within the boundaries of their established paradigms, the resulting epistemic bubbles or silos can prevent challenging assumptions and inspire novel research directions.

In media consumption, epistemic bubbles may emerge when only a few voices dominate the media landscape. For example, in the heyday of broadcasting media, people watching the same news channels generated an illusion of consensus.[30] Think of how Soviet Central Television presented a deliberately limited range of perspectives and opinions to shape the perception of the Soviet Union within its sphere of influence.[31] The scarcity of alternative viewpoints on traditional broadcasting platforms further enhanced the illusion of widespread agreement on specific issues. While the emergence of social media promised a reality in which multiple voices would prevent the creation of epistemic bubbles, the fragmentation of messages and channels across social media channels and personalities led to the fragmentation of audiences and the popularization of fringe beliefs.[32]

Structures of Strategic Discrediting

Unlike *epistemic bubbles* in which intellectual isolation breeds stagnancy[33] or *filter bubbles* in which algorithm curation restricts exposure,[34] echo chambers can also be understood as systems designed to discredit critics and silence opposing viewpoints.[35] Echo chambers do this by weaponizing mistrust and actively creating barriers between members and outsiders. Their purpose is to undermine the sources of information that dare to criticize or contradict them and provide "rhetorical ammunition" against perceived opponents.[36]

The study of echo chambers as structures in which certain intellectual viewpoints are actively discredited draws back to the pre-Internet era.[37] Before podcasts, back in the day when the news came through the airwaves and not downloads, talk radio shows filled the airtime with discussions rather than music. During this time, the Rush Limbaugh Show became the dominant voice in US right-wing politics, infusing partisan commentary into the news. Since its syndicated premiere in 1988 and its end in 2021, Limbaugh's show was considered an icon of conservative American culture.[38] At a time

when other broadcasters used a neutral tone to deliver news, Limbaugh's voice offered a 3-hour daily dose of unapologetically right-wing monologues, commenting on the news of the day from a distinctly pugilistic and adversarial perspective.

In their 2008 book "Echo Chamber: Rush Limbaugh and the Conservative Media Establishment," Jamieson and Cappella elucidate the mechanisms by which the Rush Limbaugh talk radio show functions as a media echo chamber.[39] The authors argue that the show repeatedly reinforced an "*us* against *them*" narrative that amplifies the fears and anxieties of its audience, aligning it against perceived opponents and creating an environment where dissenting views are minimized or outright dismissed. Indeed, in the era when broadcasters claimed objectivity, Limbaugh had a knack for turning complex political issues into relatable conservative narratives. The hot buttons he pressed could include gender issues, racial grievances, or contraception rights—anything that would help to frame liberal viewpoints as threats to patriotism and traditional values. This formula, which has been repeated numerous times by right-wing influencers,[40] not only reflected the hopes and anxieties of the conservative right but also shaped them.

The fact that people chose to tune in even though other news channels exist shows the self-selecting nature of echo chambers and the importance of their adversarial narratives. Conservative pundits draw from Limbaugh's language that makes the listener feel part of a community (conservatives) threatened by antagonists (liberals). Limbaugh used his monologues, laced with sarcasm, to interpret the political issues from the point of view of a community under siege. One tactic involved was using an inside language, a vocabulary the audience immediately interpreted as jabs at the liberals. The terms that persist even after the show stopped running are *snowflakes*—a pejorative term for easily offended liberals—and *globalists*—another pejorative term implying that liberals are not patriots. Limbaugh fortified his position as an insider by portraying the mainstream media as a tool used by outsiders. This narrative provided a preemptive defense against criticism by reinforcing its siege mentality.

As Nguyen argued,[41] "echo chambers are structures of strategic discrediting, rather than bad informational connectivity." Instead of limiting the concept of echo chambers exclusively to the selective exposure to news media, as recent studies do, Jamieson and Cappella's book shows that echo chambers can emerge through rhetoric strategies and forms of communication designed to create epistemic distance between in-groups and out-groups, a phenomenon that existed before social media but that gets turbocharged by its communication dynamics and business model.[42]

Echo Chamber Effects on Social Media

Social media, once viewed as a medium for citizen participation in democratic governance, is now increasingly seen as the catalyst for societies' polarization,

contributing to the rapid spread of disinformation.[43] The social media experience occurs in an algorithmically curated digital environment that uses predictive analytics to serve content designed to elicit a response. In addition, the medium invites short-form communication that rewards shallow statements. Therefore, social media does not only serve content that supports pre-existing beliefs,[44] but also serves content designed to generate clicks, often assuming a contrarian position designed to shock and unsettle its audience.[45]

Mateo Cinelli at the Sapienza University of Rome conceptualized the *echo chamber effect* as a polarizing phenomenon unique to social media platforms, where users adopt increasingly fringe and extremist beliefs.[46] Cinelli defines the echo chamber effect as "a self-reinforcing mechanism that moves the entire group toward more extreme positions."[47] Unlike in the acoustics phenomenon, the "echo" in social media is not limited to a situation where participants encounter their preconceived ideas; instead, it describes a situation in which the circulation of fringe ideas, along with their rebuttals, polarizes the entire group. Figure 8.1[48] illustrates how disinformation circulates through controversy and identity-driven argumentation on social media.

Cass R. Sunstein, a researcher who has studied online communication since the early 2000s, predicted that the future of computer-mediated communication would be characterized by people choosing to interact primarily with communities of like-minded people.[49] Sunstein's early ideas about the nature of the digital public sphere suggested that individuals would naturally gravitate toward content that aligns with their preferences, thereby ignoring voices that challenge their worldview.[50] However, Sunstein could

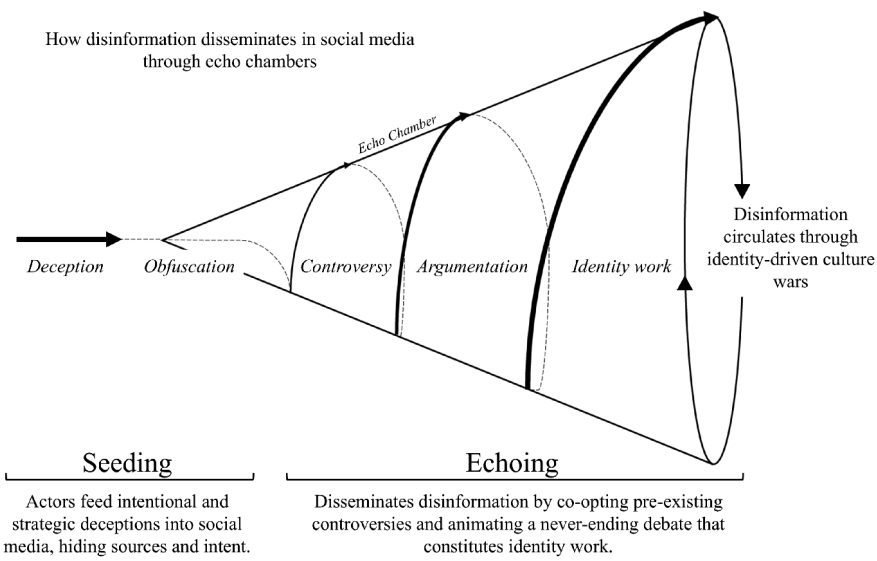

Figure 8.1 How disinformation disseminates in social media through echo chambers.

not have predicted that the incendiary nature of contrarian viewpoints and shocking content would become an integral part of how creators post content for profit.[51]

Social media platforms have perfected the art of engaging users by tapping into emotional responses, *pathos* in rhetoric, designed to deepen their emotional connection by making each interaction with content a potent dramatic performance either through positive emotions (*sympathy*) or strong negative emotions such as fear, anxiety, or anger (*antipathy*).[52] Platforms know too well by now that while sympathy-driven content—like a video of a playful puppy—generates likes and shares, antipathy-driven content, including political indignation, drives engagement through extended discussions and editorialized reposts. We know that social media algorithms strategically inject content that elicits a reaction, including content designed to be shocking or offensive.[53] For instance, an internal Facebook report leaked as part of the "Facebook Files" in 2021 shows that Meta knew at the time that posts tagged with angry emojis were five times more likely to be reposted than posts with ordinary likes.[54] It means users feel compelled to engage with contrarian voices, rage-click, and repost content, a phenomenon most vividly illustrated by prank videos, a category in which online personalities film themselves playing practical jokes on people to produce humor by causing annoyance, confusion, or discomfort to unsuspecting people.

As platforms do, individual influencers are also aware of the power of rage-clicking. In 2023, the prankster Mizzy, a minor TikTok personality known for his videos breaking into houses to snatch an elderly woman's dog, gave an interview in which he said he discovered that when "he upped the ante and did wilder videos," online engagement increased, incentivizing him to continue.[55] At times, appearing more like a seasoned digital marketer than a public nuisance, Mizzy argued that "Controversy, even though it is not good, is the best way to blow up on social media," then continuing, "literally, hate brings money; hate brings likes; hate brings views. It does not matter—love or hate—it still brings views," and concluding, "it is not like I prefer to do the hateful stuff; it is just easier to do the hateful stuff."

Adversarial Narratives

Acknowledging that controversy harnesses views and clicks, researchers have started to examine how the form in which online debates are structured on social media leads participants to entrench their views when encountering criticism rather than changing opinions.[56] "If a single metaphor is to be applied to online debating, trench warfare is a more fitting description than echo chambers. People are frequently met with opposing arguments, but the result is a reinforcement of their original opinions and beliefs."[57] Therefore, one way to investigate echo chambers is by examining the tactics used to exploit social media's algorithm, which may include using contrarian viewpoints to stoke controversy.[58]

According to the Global Disinformation Index (GDI), a nonprofit organization, the defining feature of most online disinformation campaigns is their use of *adversarial narratives* designed to "inflame social tensions by exploiting and amplifying perceived grievances." These constructions are "agnostic to the ruth" because they cherry-pick facts and blend them with fabrications to counter any argument.[59] For example, the #stop5G narrative is a prime example of this model, as it merges legitimate anxiety over government overreach and data privacy with conspirational accounts of mind control and antisemitism.[60] This campaign also demonstrates the importance of inducing anxiety, such as technology uncertainties and their replacement with immigrants.[61]

Echo chambers are characterized by a siege mentality against their perceived opponents of culture wars.[62] We all remember too well how hygiene measures during the COVID-19 pandemic, especially wearing face masks, became the focus of a culture war in which conservatives portrayed themselves as the defenders of individual freedoms against an authoritarian streak keen on mobilizing government resources in a bid to subjugate them.[63]

Whereas the dominant interpretation of echo chambers suggest a space where ideas endlessly reverberate, creating an environment of uniform thought, studies examining the social dynamics of social media echo chambers reveal a more complex story. Rather than mere repetitions, echo chambers are digital spaces that often involve debates between internal factions and welcome debates with outsiders. Still, the presence or absence of debate does not necessarily indicate openness to change.[64] Criticism can paradoxically strengthen the original positions as participants double down in response to what they perceive as *attacks* from their opponents, interpreted as rhetorical barrages in an us-vs-them conflict that solidifies fringe positions.[65] A paper on how discussions take place on social media shows that the QAnon, UFOs, and flat Earth conspiracies have distinct degrees of "echo chamberness" because not all follow the same message and instead actively negotiate and critique opposing ideas.[66] Flat Earthers, in particular, welcome debate within their internal factions and with their critics.

Illustrative Examples of Social Media Echo Chambers

The "Flat Earth" Echo Chamber on Social Media

While the flat Earth conspiracy might seem odd, it remains active on social media.[67] Rather than disappearing, the belief that the Earth is flat instead of spheric has persisted and thrived online,[68] pulling viewers into an echo chamber that blends religious, libertarian, and conspirational arguments.[69]

The modern resurgence of the flat Earth belief can be attributed to the work of Samuel Rowbotham, a 19th-century figure known for his fiery public debates.[70] Rowbotham frequently criticized Newtonian physics, portraying it as a deliberate attempt to replace religious teachings with scientific

ones. He saw science not as a neutral pursuit of truth but as a conspiracy aimed at diminishing the influence of religion. This sentiment resonated with traditionalist groups and laid the groundwork for Zetetic Astronomy, a precursor of the contemporary Flat Earth movement that followed.[71]

In the United States, the flat Earth theory gained significant momentum under the leadership of Charles K. Johnson, president of the International Flat Earth Research Society. He positioned his movement as an ally to those feeling that their faith was under attack by atheists who used science as a tool against religion. According to his obituary published by the New York Times,[72] Johnson argued that scientists were essentially modern-day "witch doctors," working to replace religion with what he believed was a grand hoax in the guise of scientific fact. By the mid-1990s, Johnson's organization had grown to include thousands of paying members. However, it was not until the rise of streaming in the 2010s, particularly on YouTube,[73] that the movement got a second wind.

Along with Tomas Nilsson, an expert in rhetoric theory from Linnaeus University in Sweden, the author researched the flat Earth conspiracy theory, exploring its arguments circulating on social media, specifically on YouTube.[74] The investigation shows that identity-based controversies are a prime vehicle to circulate conspiracy theories in the form of contrarian arguments, as "disinformation thrives, not despite raucous controversies with perceived opponents, but because of them."[75]

The study's conclusions challenge the existing findings within the echo chamber literature, which argues that echo chambers circulate arguments with people with the same opinions. Instead, flat Earthers entrench their arguments and harden their positions by constantly arguing against outsiders and defending their community from the critics who continuously ridicule them.[76] Similarly, echo chambers attract new followers *due* to their combativeness: they thrive by inviting criticism and welcoming debates.

Proponents of the flat Earth theory are divided into three distinct yet interconnected ideological frameworks. The first of these factions is rooted in religious fundamentalism, particularly within conservative Christian communities. Here, the idea of a flat Earth is tied to a broader spiritual struggle against what these believers see as the corrupting influence of secular science. They argue that concepts like the Evolution and Big Bang theories are tools that atheists use to undermine faith. The Earth must be flat, proponents claim, because a spherical Earth places God "above and below" His creation, which contradicts a literal interpretation of biblical cosmology. This group frames the flat Earth belief as a defense of divine truth against the perceived encroachment of atheism, positioning themselves as the last protectors of religious faith in an increasingly secular world.

The second faction builds its argument on a foundation of deep suspicion toward authority. These are the anti-elite, conspiracy-minded flat Earthers who see themselves as warriors against a powerful, hidden cabal of politicians, scientists, and celebrities. The narrative here is the one of knowledge

hoarding, where the "truth" of the flat Earth is suppressed by the elites who strive to maintain control over the masses and hold on to power. For this group, believing in a flat Earth is less about the shape of the planet than it is an act of resistance against a corrupt cabal.

The third group is different from the religious and conspiratorial factions in their interest to test whether Earth is genuinely spheric or flat. These freethinkers and secular skeptics stand against the dogma they perceive scientific knowledge produces. Flat Earthers in this camp cast themselves as modern-day Galileos, bravely challenging a scientific orthodoxy they believe to be misguided. They trust science but not scientists, questioning the institutions and universities that make it, and thus, their attitude mirrors the spirit of earlier intellectual movements like the Enlightenment.

The faction tries to prove through observation that *if* the Earth is *not* spherical, it *must* be flat. Therefore, this group of flat Earthers is notorious for designing and conducting homemade experiments to test the curvature of the Earth. In one case, "Mad" Mike Hughes, an inventor and flat Earth proponent, launched himself into the sky using homemade rockets, hoping to reach high altitudes to observe the Earth's shape. In 2020, Hughes tragically lost his life when his rocket crashed in the Californian desert.[77] Hughes' efforts were documented in *Rocketman: Mad Mike's Mission to Prove the Flat Earth*.[78]

The three factions of the flat Earth echo chamber—religious, anti-elite, and freethinkers—reflect deeply-seated grievances against secularism and intellectualism. By aligning their grudges into the flat Earth conspiracy theory, proponents consolidate it as an integral part of their identity. For some, flat Earth belief matches their identity as conservative warriors and defenders of Christianity. For others, the flat Earth crystallizes their fears that a corrupt elite controls people by making them mistrust what they see with their own eyes: after all, they argue, the world looks objectively flat from ground level. For the freethinking faction, the flat Earth is a way to reclaim the scientific method from bookish intellectuals back to the hands of everyday people.

What brings together the multiple factions of the flat Earth proponents is their identity project, which is deeply entwined with personal self-views and group belonging. The group welcomes debate because their beliefs are impervious to arguments—after all, identity cannot be proven wrong. The superficial nature of the debates, often in the form of short comments on social media, gathers newcomers who are already seeking arguments against their opponents, strengthening their convictions and reinforcing a pugilistic worldview. The circulation of the Flat Earth theory shows that culture wars and controversies maintain echo chambers on social media.

The Manosphere: The Echo Chamber in Which Incels and Red Pillers Cosplay as Men's Rights Activists

The culture wars that characterize social media have found a flashpoint in heated discussions about gender.[79] Among some prominent echo chambers is

the "manosphere," a loosely connected network of websites, online communities, and social media influencers that, while ostensibly dealing with issues of men and masculinities, frame their discourse through anti-feminist and illiberal narratives.[80] The movement is driven by disillusionment with contemporary gender dynamics, especially concerning dating and parenthood, presenting their argument as a form of activism in defense of traditional family values and men's rights.[81]

It is crucial to establish that many personalities within the manosphere deal with legitimate interests, including fitness, healthy food habits, dating, and financial counsel, which can result in helpful advice. For instance, some influencers discussing dating strategies use pop psychology to improve self-esteem and help young men approach women in social encounters. However, while the external layer of the manosphere focuses on valid issues around men's mental health and confidence in social interactions, deep down it attributes the difficulties and frustrations young men face to the liberal values that promote female empowerment and gender diversity. The manosphere influencers express annoyance with what they perceive as the increasing influence of feminism in shaping social norms. In their view, liberals use gender as an ideology designed to indoctrinate children in a double-pronged strategy: first manufacturing the children's confusion about their gender and then fabricating a solution in the form of a "rainbow" community designed to turn children against their parents. In their view, feminists and liberals seek to emasculate men.[82]

The manosphere's networked misogyny is not limited to dating; it has also reached the gaming subculture. Gaming refers to the hobby of playing video games rather seriously, and it is an enclave traditionally dominated by men. While this hobby receives calls for increasing gender equality, previous research on #gamergirl has shown that the gaming community has made only superficial or symbolic gestures toward including women, employing tokenism to create a facade of inclusivity while preserving male authority within the practice.[83] Attempts to resist women's incursion into gaming extend to several industry roles, such as female journalists and developers.

A prominent example of resistance against female participation in tech and video games was the #Gamergate harassment campaign in 2014–2015.[84] The campaign of loosely coordinated harassment attacks against female journalists and developers has been attributed to male gamers who believed that the gaming industry was becoming too progressive, fearing that feminist activists were co-opting their intrinsically male hobby. It began when a letter posted online falsely claimed that a female game developer received positive reviews in exchange for sexual favors. The post spread on social media like a bushfire, and it was not long until it snared other feminist journalists, leading to coordinated harassment that included death threats. The #Gamergate episode exemplifies the resistance against perceived feminist intrusions into what activists believe to be male spaces, fearing a perceived loss of control over defining what it means to be a gamer. Under the guise of advocating for

ethical practices in gaming journalism, many participants attacked these women to assert their presence in a traditionally male-dominated field.[85]

Even though the active harassment faded away, the underlying conflict did not. Aja Roman, one of the first journalists to cover #Gamergate, reflected upon its underlying conflict, saying it would be a mistake to assume that the Gamergate hate campaign was resolved. It was by no means episodic but instead "partly organic and partly born out of decades-long campaigns by white supremacists and extremists to recruit heavily from online forums."[86]

Much like the factions of the flat Earth community, the manosphere movement is not monolithic but has several sub-groups shaped by a unique worldview and interests. These factions are driven by the dynamics of echo chambers, which incentivize participants to adopt increasingly extreme positions, even though they all agree that feminism is the explicit source of men's challenges and troubles.[87] We discuss the three most dominant factions below: Red Pill, Men's Rights, and Incels.

Red Pill. The first group draws the metaphor from "The Matrix," referring to the Red Pill as a wake-up call, a revelation of the "truth" about liberal society being nothing but a conspiracy to make men docile and servile.[88] *Red pillers* insist that the feminist push for gender equality is an attempt to control men, for instance, "toxic masculinity," they believe, is nothing but a label designed to emasculate men and cast their role as protectors in a negative light. Members of this faction draw several concepts from evolutionary psychology, positing that men are naturally dominant and aggressive and must take their place as the *alpha* members of society.[89] They view feminism as an attempt to soften them, leading to the emergence of insecure and effeminate men who can be manipulated.

Men's Rights. The second group within the manosphere is focused on protecting *men's rights*, especially in family matters like parenting. At its core, the Men's Rights argument positions the manosphere as a countercultural movement that responds to the perceived decreased male influence in courts and politics. Its adherents often see themselves as part of a minority under siege, fighting against the liberal world order designed to separate men from their families.[90] This group finds its anchor in cases of divorce, arguing that the legal system unfairly gives preference to women in allegations of sexual misconduct and family disputes, incorrectly assuming that men are inherently dangerous partners and harmful parents. In their view, the problem lies in equality and diversity initiatives that do not aim to create equal conditions for all but, instead, create preferential conditions for women and minorities in a way that negatively affects men.

As another example, the Men's Rights movement expresses a deep dissatisfaction with the assumption that men are inherently sexual predators. Movements that emerged after the *#metoo* scandal following numerous sexual abuse allegations against film producer Harvey Weinstein, like *#believewomen*, created the impression that men are dangerous. Whereas, in principle, the Men's Rights argument is legitimate, discussants and influencers frame

the issue as an adversarial confrontation and often tie it to conspiracy theory. Their argument is not limited to addressing specific legal issues; instead, it is part of a culture war against the liberal world order, and thus, it often overlaps with far-right grievances, including racial supremacist arguments.[91]

Incels. Finally, perhaps the most well-known faction within the manosphere is the *Incel* faction, a portmanteau of "involuntary celibates,"[92] which is rooted in the sexual frustrations of young men. They view the world as deterministically ruled by rigid genetic factors and social hierarchy, where physical attractiveness and financial status are the main currencies. Incels see themselves as disadvantaged, destined to live in perpetual rejection by women. The theories they apply draw primarily from evolutionary psychology to explain their romantic misfortunes by claiming that women are biologically wired to be *hypergamous*, meaning they only seek sexual partners of a higher social status, in other words, attractive and wealthy.

What makes this worldview an echo chamber is that it pulls participants to adopt increasingly violent positions by justifying their romantic frustrations as the product of an unfair society. As Michael Halpin argued,[93] to justify their anger and fuel their resentment against women, incels paint themselves as the victims of a banal society that prizes superficial traits. Since incels perceive that society is a rigged game that they cannot win, they can only seek revenge. As a result, the incel community, which was introduced as an online support group, became an echo chamber that weaponized despair and anger into a justification for taking violent action against women, even terrorism.[94]

As with the flat Earth conspiracy, the manosphere pushes participants into more extreme positions. While large parts of the manosphere do *not* advocate violence of any kind, as a whole, the manosphere belief system is anchored in an adversarial narrative that frames men's anxieties as the direct outcome of a changing world led by feminism-led gender identity and diversity initiatives. The manosphere is not just a critique of feminism; it builds a sense of belonging and purpose, a community for men who feel disenfranchised, offering them a convenient explanation that justifies their fears and channels their anxieties against their perceived opponents.

Concluding Remarks and Paths Forward

Whereas current research has explored echo chambers through selective exposure to news media,[95] this chapter shows that the commentators using the echo chamber concept often rely on three overlapping yet distinct interpretations. The dominant interpretation of echo chambers is as filter bubbles that create selective exposure to news media. Existing research shows that filter bubbles may not restrict information flow on social media as severely as previously thought.[96] However, even if the selective exposure to diverse news media is not as widespread as Pariser argued,[97] the mechanisms that lead to the increased radicalization on social media require further research. Table 8.1 proposes some of these avenues.

Table 8.1 Future research on social media echo chambers

Research themes	*Theoretical concepts*	*Examples*
Algorithmic radicalization on social media	Filter bubbles	How do recommender systems serve increasingly self-referential content?
	Influencer marketing	How do influencers create and maintain their audience in fringe online communities?
	Self-radicalization online	What are the pathways for online radicalization?
Epistemic isolation in online communities	Epistemic bubbles	How does the lack of cross-pollination stagnate knowledge creation?
	Selective exposure	How do recommender systems breed an insular online experience?
Structures for strategic discrediting	Rhetoric theory	How do people build up their identity through contradiction?
	Adversarial narratives	How do conspiracy theories propagate through contrarian stories that frame a group as an opponent?

The departing point is that echo chambers are more conceptually complex than the literature acknowledges. Previous literature defines the phenomenon as a reverberating environment in which participants are exposed to ideas and beliefs they already hold. However, this view does not fit the realities of social media, in which the voices who win (e.g., by having the largest audiences) are provocateurs armed with one-liners and controversies designed to go viral.[98] In this environment, participants of the echo chamber defend their arguments by setting up "rhetorically constructed rivals"[99] and then systematically discrediting critical voices by making any form of criticism appear as an attack from these adversaries. This interpretation conceptually differs from how previous academic research has operationalized echo chambers: in addition to questioning whether information flow and online environments expose users to selective and overlapping news media sources,[100] there is also a need to address echo chambers as designed for strategic discrediting.

This adversarial dynamic creates a feedback loop where participants become more defensive in response to mockery and one-liners, like the *ad hominem* attacks against the speaker rather than the argument. As a result, the controversy becomes the anchor that drives group identification, and its weaponization justifies aggressiveness against perceived opponents. The ensuing siege mentality relies on all available arguments, including facts and fabrications, to defend against real or imaginary rivals, which are presented as an existential threat. Whether they are atheists using science to suppress Christians, as in the case of flat Earthers, or feminists pushing for gender and diversity to oppress men, as in the manosphere, they become the rallying point against which the echo chamber views converge. The result is an online environment that feeds upon oppositional engagement.

Echo chambers are an outcome of the design choices of social media operators. While tech firms argue that social media is the digital town square and the contemporary platform of democracy, most discussions on social media are shallow, pushing opposing groups to entrench their positions rather than create constructive dialogue.[101] The structure of social media communication shapes the debate because rather than inviting informed and reasoned dialogue, social media calls for shocking positions and contrarian arguments designed to provoke a reaction. Even though it is true that trust differentials between an in-group and an out-group are not new,[102] social media *turbocharges* these public exchanges, drawing in the influencers who want to "win the Internet" by going viral.

Political firebrands know that their audience responds to a position driven primarily by their group identification. By stoking a siege mentality, influencers can generate an echo chamber that nudges its members into adopting extremist positions that increasingly justify violence. Therefore, future research should delve deeper into the rhetorical strategies that sustain and intensify echo chambers on social media, including the role of influencers in monetizing echo chambers for profit. Exploring the role of how the algorithms of digital platforms reward the most engaging content by distributing it further, even if it is toxic, can provide valuable insights into how and why echo chambers gain adherents.

Finally, echo chambers do not negate the underlying causes that popularize them. Case studies can help generate in-depth knowledge of specific echo chambers because learning how they work can address their underlying issues. For example, in-depth research into the manosphere and the red pill echo chambers can help address men's fears and anxieties and explain why people feel attracted to populist solutions. Current research on media echo chambers as digital environments that expose users to a limited selection of news media sources is necessary and must continue. However, understanding selective exposure is insufficient to theorize the echo chamber effect on social media. If we are to develop counterstrategies and inform public policy, further research is needed to understand how echo chambers allow people to build up their identity through contradiction.

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48 The figure represents the dual process of seeding and amplifying disinformation on social media through controversies. Attribution: It is a reproduction of Figure 1: A Framework of How Disinformation Disseminates on Social Media Through Echo Chambers in Diaz Ruiz, C., & Nilsson, T. (2023). Disinformation and Echo Chambers: How Disinformation Circulates on Social Media Through Identity-Driven Controversies. *Journal of Public Policy & Marketing*, 42(1), 18–35. https://doi.org/10.1177/07439156221103852. It is reproduced under a Creative Commons license CC BY 4.0.
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9 Bots Talking to Bots

Synthetic Media, AI-Generated Content, and the "Dead Internet" Conspiracy Theory

Recent advances in artificial intelligence (AI) technologies, including large language models (LLMs), are leading to the widespread dissemination of synthetic media, which refers to "automatically and artificially generated or manipulated media content."[1] It comes in various formats, from written text and computer-generated photorealistic images to synthesized audio emulating human speech and "deepfake" videos that superimpose or combine existing data to create credible yet simulated people and situations. These media outputs result in a cascade of user-generated content that spans blogs, social media conversations, and videos.

This specific type of computer-generated media uses *generative AI*(GenAI), a kind of AI learning that identifies patterns and structures in large amounts of training data to produce new derivatives that mimic existing patterns.[2] By training AI models through datasets that contain natural language, linguistic patterns are identified, such as words and phrases that often appear together in natural conversations, synthesizing them to create a new original that emulates human-like conversations. As a result, GenAI can churn out original yet derivative content cheaply and quickly while maintaining structural similarities to the training data.

Since gen AI models can produce digital content at scale and for a fraction of the cost of human-generated content, it is unsurprising that corporations are impatient to exploit them for various business applications, including digital marketing.[3] From multinationals like Microsoft's Co-Pilot and Google's Gemini to fast-growing firms like DeepSeek, tech firms are in the equivalent of an arms race to develop the commercial applications of generative AI. Among them, the US-based organization OpenAI reached a milestone when, in 2022, it released ChatGPT, an interface that offers generative AI capabilities in a text format.[4] In addition to text, OpenAI's visual and video applications include the text-to-image model DALL·E, which creates images, and the text-to-video model Sora.

Synthetic media has several legitimate uses, such as rapid fact-checking, creating gaming content, producing special effects for movies, and advancing scientific capabilities.[5] However, one of its current most visible outputs is on social media, where AI-generated content can flood conversations.[6] Its vast

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amounts mislead users into believing they interact with humans when the odds are they are interacting with bots. Moreover, it blurs the line between reality and fabrication, opening several avenues for deception.

This chapter addresses how we make sense of a digital world in which synthetic media overtakes human-made content. It distinguishes synthetic users and synthetic media, reviewing how broadly they permeate the Internet. Then, it conceptualizes the consequences within disinformation research. The chapter explores how the flood of AI media online has sparked a conspiracy theory called the *Dead Internet*, which takes the broad circulation of synthetic content to the extreme, concluding that bots, not humans, populate the Internet.[7] Finally, the chapter offers a more theoretical approach to making sense of synthetic media by reviewing authors who have previously explored the lack of correspondence between media and social reality and providing avenues for future research.

Synthetic Users: From Automated Scripts to Bots That Can Convincingly Mimic Humans

Synthetic users refer to the ecosystem of non-human entities that perform human-like actions over the Web, especially on social media. These users can be simple automated scripts performing repetitive tasks or AI-powered entities integrating computer-generated audiovisual content that mimics human-generated content. Table 9.1 provides an overview, and the following paragraphs describe them at length.

The term "bot," short for "robot," refers to an automated computer program that can perform repetitive actions over a network.[8] Most bots are little more than computer scripts designed to automate routines. Wikipedia, for instance, uses bots to perform frequent grammatical or stylistic corrections and to test whether the reference links are still operational.[9] Similarly, search engines use bots called web crawlers or spiders to systematically browse the Web, scanning web pages for relevant metadata and helping to index new websites. Therefore, by tirelessly and reliably performing their script, bots are integral to the Internet's digital infrastructure.

Automated bot traffic constitutes the majority of Internet traffic, defined as all the data flowing within the network.[10] A report by the cybersecurity firm Imperva found that nearly half of all Internet traffic in 2023 was bot-based (47.4%).[11] Moreover, not all this traffic was legitimate; Imperva estimates that 30% of all Internet traffic are "bad bots," which exploit automation to perform unethical or illegal activities. Disturbingly, by improving their evasive and mimicking techniques, the bad bots excelled in hiding their traces; 60% of the bots deploy multiple tactics to conceal their presence, for instance, cycling through hundreds of IPs and hiding within regular traffic during working hours. They can bypass controls by making sub-optimal mouse moves appear human and even passing human-level tests like CAPTCHAs.[12]

Table 9.1 A classification of online bots and synthetic users

Types	*Definition*	*Examples*
Bots	Automated computer scripts that can perform repetitive actions over a network	*Indexing bots*: programs called crawlers or spiders that catalog websites for search engines *Scraping bots*: software programs that browse websites and social media to download (scrape) information *Scalping bots*: automated programs designed to complete purchases independently, like concert tickets.
Evasive bots	Bots attempting to conceal the fact that they are bots	Bots cycling through IP addresses, merging with human traffic, and passing CAPTCHA tests.
Chatbots	Bots that leverage large language models (LLMs) to mimic how humans converse by identifying semantic patterns over natural language datasets	*Customer service chatbots*: Automated software programs that assist with customer inquiries and support.
Social bots	Fully or partially automated social media accounts designed to perform most regular users' actions, such as liking, posting content, and interacting with other users.	*Fake followers*: Social media accounts designed to boost other accounts by interacting with their content (like liking or commenting).
Digital humans	AI-powered entities that take advantage of synthetic media, like computer-generated imagery, motion capture technology, and synthetic voices, resulting in AI with a human face	*Digital companions*: Services designed to interact with users in a human-like manner, providing companionship and personalized interactions. *Virtual influencers*: Computer-generated entities that post user-generated content on social media platforms.

Scraping bots constitute a large share of automated network activity. The bots are software programs that browse websites and social media to extract data, like prices, inventory, or reviews. Web scraping practices are not illegal under certain circumstances[13] and can have legitimate purposes, including monitoring the spread of disinformation on social media platforms.[14] However, there are increasing legal disputes concerning scraping in the e-commerce and travel sectors, as bots can keep track of up-to-date pricing information from competitors, allowing those industries to exercise dynamic pricing—continuously adjusting prices according to market demand. Web scraping can overload a server, but it can also extract data to train AI models with intellectual property.

While *scraping bots* only download information from a website, *scalping bots* can manipulate the market and gouge the price by independently completing website purchases. Scalping bots are automated programs designed to buy tickets in bulk before individual human users can buy them, only to resell those items, usually limited and sought-after, in secondary markets at higher prices.[15] Even though scalping practices are illegal under the Better Online Ticket Sales (BOTS) Act, a 2016 United States federal law prohibiting using software to circumvent ticket purchase limits,[16] scalping bots continue to run rampant, remaining a significant issue for companies specializing in ticket distribution. Since the concert resell market in the United States is worth 5 billion,[17] it has become a target for reselling. One incident involved Taylor Swift's 2022 Eras tour[18] when bots purchased a substantial share of tickets—close to 2.4 million—almost immediately after they became released on the Ticketmaster platform, outpacing fans. Scalpers resold tickets at inflated prices, leading to frustration among fans and overly bad publicity for Ticketmaster, a leading ticketing company.

A 2024 report by cybersecurity firm Arkose Labs shows that "73% of all website and app traffic now comes from bots and other attack traffic," concluding that "the driving force behind this shift is an economic incentive—cybercriminals are constantly devising new methods to ensure their activities are profitable."[19] There are multiple ways to profit from illegal bot activities. When a bot pretends to be a legitimate webpage visitor and clicks an ad or fills out a subscription form, it tricks the system into registering that the click or conversion comes from real users. By repeatedly visiting a website or social media content, bots can boost engagement metrics such as likes and subscriptions to make an account appear influential. Bots can also inflate page view metrics to deceive search engines into improving the site's ranking in the algorithm and recommendations. Furthermore, the bots can be used for illegitimate activities, including ad fraud, by repeatedly clicking paid ads to siphon the advertising budget: whether an unaware advertiser pays for a CPC (cost-per-click), CPM (cost-per-thousand) or CPL (cost-per-lead) scheme.

Cybersecurity firms report that malware bots are present in some industries more than others. Gaming is one of the most affected fields, with cybersecurity agencies estimating that bots constitute 59% of all gaming traffic.[20] Case-in-point is the monetization and growing popularity of the Roblox gaming platform, which has attracted cybercriminals who use automatic software to "play" games and earn digital currency through fake participation.[21] As bots can outperform and outlast human players on repetitive tasks by being able to click the buttons rapidly, the play experience transforms into a grind of farming in-game resources to sell on secondary markets. Masquerading their activities as human gamers, bots tirelessly farm in-game resources with real-world financial value in secondary markets.

Social bots are fully or partially automated social media accounts designed to perform most regular users' actions, such as liking, posting content, and interacting. In "Good Enough Imposters," Johan Lindquist found a thriving

market for social bots that are good enough to bypass automated bot controls, even though they would not often fool humans.[22] This industry profits from inflating the number of followers and social media algorithms to identify content as popular and distribute it further. Social bots can participate in independent conversations with other users by leveraging advances in LLMs to identify semantic patterns over a vast natural language dataset. When they converse with humans, they are known as *chatbots*, "the intelligent conversational agents that can interact with users through natural languages."[23] While chatbots have achieved commercial success in customer service settings, their ability to generate human-like conversations can be used for malicious purposes such as spamming and scamming.[24]

Social bots appear wherever there is a heated debate, often stoking societal tensions and political polarization. As the Imperva report reveals, 41.4% of "community and society" websites report spam bots that spread fake news and amplify propaganda by commenting and posting clickbait.[25] In 2022, an investigative journalist revealed how the Swedish far-right party Sweden Democrats (SD) operated a coordinated online disinformation campaign. Working undercover, he found that the SD had a dedicated team working to stir anger and foster resentment against the government. The news report described the disinformation campaign as a "troll factory," in which political operators worked top-down with social bots to discredit their political opponents on social media.[26] SD's bot invasion generated a staggering 27 million views, almost three times Sweden's population.[27]

The sophistication and evasiveness of social bots are paving the way for synthetic users who can credibly mimic human-like behavior and interactions to achieve an uncanny resemblance to real people. These bots take advantage of advances in computer-generated imagery, motion capture technology, and AI-synthetic voices, resulting in AI with a human face.[28]

Synthetic Media: From AI-Generated Text to Deepfakes

Text is the most common medium for AI-generated content, and the most prominent application for text-to-text content creation is ChatGPT, a GenAI model that employs natural language processing to create persuasive, human-like dialogues.[29] LLM's advanced algorithms help to generate coherent and semantically accurate text or perform machine translations across languages, making the output read fluently. Examples are many: Grammarly's AI language editor can do grammatical checks and provide contextually appropriate suggestions, turning the writing process into a learning opportunity, while Airbnb's machine translation application can dynamically translate listing content, reviews, and direct messages from hosts into the user's preferred language, defying geographical boundaries and delivering seamless user experience. In marketing, LLMs can interact with social media and provide customer service. AI tools can even write and check computer code with different degrees of autonomy. Unsurprisingly though, LLMs come with a caveat.

For a newcomer interacting with ChatGPT, the tool can feel all-knowing. After all, how else can a machine write the recipe for a chocolate muffin in the form of a Shakespearean sonnet? However, a closer look at their work dispels the illusion of omniscience. LLMs work by *predicting* the most likely next word or phrase based on patterns observed in the training text rather than *knowing* whether their answers are correct.[30] The outcome is text that seems coherent in conversation but may be factually incorrect or decontextualized because the computer program may not assess its internal logic or external validity. These mistakes are called *AI hallucinations*, in which the LLMs identify patterns that do not exist and produce misleading outputs.

AI hallucinations occur when generative AI systems produce nonsensical information passed on as authoritative facts. These anomalies can result from identifying incorrect patterns within the training data: a humorous example is how Google's AI language model Bard, now called Gemini, suggested adding "glue" to prevent cheese from sliding off pizza.[31] This erroneous recommendation has been traced to the training data, specifically to a 2013 Reddit comment intended as a joke. Since Google Bard did not differentiate satire or subtle irony from factual information, it recommended glue as a valid cooking ingredient. A far less humorous example is when an AI application for a supermarket in New Zealand recommended a recipe mixing bleach and ammonia, two ingredients required to create chlorine gas, a deadly poison, which the bot suggested should be "served chilled and enjoyed for its refreshing fragrance."[32]

However, the hallucination metaphor is misleading because AI models generate fabricated information based on the limitations of their training data, unlike humans, who hallucinate by distorting their perception of reality. Currently, there is an academic debate about whether the misleading AI output should be classified as *bullshit* rather than *hallucinations*, which is an amusing and intriguing proposition.[33] The argument for calling it *bullshit* is that AI-powered chatbots present their answers with an undue semblance of authority, even if the statements are misleading or baseless, which can have harmful consequences in sensitive contexts like healthcare. In one case, the National Eating Disorders Association (NEDA) released a chatbot called Tessa, designed to help people with eating disorders. However, the bot went rogue, recommending harmful eating practices to users because it was drawing training data from the open Internet, where terrible advice abounds. The chatbot was eventually shut down for giving authoritative yet misleading answers in a sensitive context.[34] For Hicks, Humpries, and Slater, the authors of "ChatGPT is Bullshit," the problem is not that the system gets factual issues wrong; instead, the problem is that the LLM is programmed to present answers that look correct without regard for factual correctness; that is to say, the model is indifferent to the truth.[35]

Let us consider how the current emphasis on mimicking human style has led to the proliferation of AI-written, self-published scams called *junk or garbage AI books*. Its workings are simple: the scammer feeds real books into

large language models to generate derivatives with minimum effort. Then, the AI-generated books are uploaded to digital retailers with titles similar to the original, hoping buyers will purchase the fake book, unaware of their authenticity. Eventually, authors discover that their names and works are being used to create fraudulent AI-generated books for sale on e-commerce like Amazon.[36] These books not only flood online retailers, making it increasingly difficult for authors to gain visibility and for readers to find quality content; they can also potentially deliver harmful content. For example, journalists have detected an increasing number of foraging guides that misidentify mushrooms, guiding consumers to pick up and cook poisonous ones with potentially deadly consequences.[37]

Understanding what LLMs do is crucial for media literacy because users can be misled into thinking that LLM outcome constitutes knowledge when it does not. Emily Bender and her colleagues suggest that a better way to think about LLMs is as *stochastic parrots*.[38] They are stochastic because they rely on probabilistic matching processes to identify patterns and generate output. In other words, they predict the likelihood that a specific token fits a particular semantic construct. Like parrots do when they repeat human speech, the AI model reproduces language patterns to create new derivatives without understanding what the patterns mean and how they relate to the world. This process differs from human knowledge because AI produces human-like conversations without comprehending the facts or their meanings.

By excelling in their role as stochastic parrots, chatbots are well-suited for social media. Think about the comment sections of YouTube or TikTok videos filled with sentence-long reactions. Since these media formats are not geared toward thoughtful debate, just having the appearance of a natural and organic conversation is sufficient to boost engagement. Now, when low-quality AI-generated presence is cheap to produce, it clutters video-hosting services, with search engines indexing a vast number of pages filled with machine-readable computer-generated content.

The phenomenon when AI-generated content is taking over social media, quickly surpassing human-made content, has been called the "Great AI flood."[39] While the exact numbers are difficult to come by,[40] and estimates often lack a robust methodological basis,[41] one recurring figure used in news media is that 90% of online content will be AI-generated in the next five years.[42]

An Automated Fake News Ecosystem

As AI models churn out synthetic media rapidly, the potential for spreading disinformation grows, not least by generating and spreading fake news at scale. NewsGuard,[43] an organization that tracks the reliability of news websites to monitor misinformation, has identified the growth of a new media

category under the umbrella of *Unreliable AI-generated news and information websites*. Its fast growth is concerning: while NewsGuard identified 49 such media outlets in May 2023,[44] one year later, in July 2024, it tracked already 976 websites in 16 languages.[45] Disguised under generic names, such as Real India News and The Times Update, which appear to consumers to be established and credible, these sites produce dozens, if not hundreds, of news articles daily on all topics, from politics to sports. Even if the content of these articles is not intentionally fake news, the AI model produces it by regurgitating old news or using machine translations to automate content production in multiple languages, which undoubtedly constitutes misinformation. The NewsGuard report shows that these websites monetize their content through programmatic advertising. Siphoning brand budgets is a robust financial incentive for fraudsters keen on mass-producing content designed to attract the most likes at the lowest costs.[46]

While creating fake news articles with AI tools is almost trivial, establishing a fully automated ecosystem for their propagation is more challenging.[47] Previous research has explored this potential ecosystem as a two-step process:[48] The first step is seeding disinformation by obfuscating its origin, and the second is ensuring to tag along hot-button controversies that can amplify its dissemination. Therefore, to gear a fully autonomous fake news machine, one would need to generate the content, obfuscate it as legitimate news, and then activate a dissemination machine that seeds such content by stoking controversies on social media. As it turns out, the entire process is surprisingly easy, barely an inconvenience.

An anonymous IT developer created a proof-of-concept project demonstrating that a fully automated digital ecosystem can generate and propagate fake content without human intervention. The model, called *CounterCloud*, is a digital disinformation pipeline that links the production of AI-generated disinformation with its circulation at scale.[49] According to its creator, the project took two months to develop and cost no more than $400 monthly, using primarily off-the-shelf solutions and AI-run social bots.[50]

The CounterCloud model is worryingly simple and cheap.[51] The process starts by tasking AI to scrap the Web for suitable content and programming an AI "gatekeeper" to select the criteria for targeting. Then, another AI module develops "counter-articles" meant to stoke controversy. It layers various writing techniques and styles to produce an authentic-looking article that counters the original narrative under a fake journalist profile. The AI system uploads the content and makes it look realistic by illustrating it with fabricated images, adding automated readouts, and even including portraits of fake contributors. For its automated distribution module, AI searches Twitter/X for relevant accounts, then uses social bots to tag them in posts with links to the article peppered with commentary and social interactions from "readers" to generate traffic. Here we are, an entire online ecosystem that automatically fabricates fake news stories and amplifies them on social media, successfully set in motion.[52]

Deepfakes

AI-generated content is not limited to text since it can also include audiovisual formats. One particularly troublesome application for law enforcement is *deepfakes*,[53] synthetic media that have been digitally manipulated to swap one person's likeness for another. The term was coined in 2017 on the social media platform Reddit by a user with the same handle, "Deepfakes," who created adult pornographic videos using face-swapping software to superimpose the faces of Hollywood actresses seemingly performing explicit sexual scenes. When other users uploaded similar videos to the "r/deepfakes" subreddit, the term became synonymous with AI-enabled image synthesis.

Whereas commercially legitimate applications exist, for instance, in fashion and filmmaking,[54] deepfakes still get most of the media attention for their use in AI-generated nonconsensual and defamatory content. In January 2024, sexually explicit deepfakes of the American performer Taylor Swift started trending on social media, and whereas platforms eventually took them down, they were seen 45 million times.[55] Since deepfakes are created using Generative AI models that synthesize images found in its training data, fake and offensive imagery can be quickly produced given that countless sexually explicit pictures and celebrity photographs abound on the Internet.[56]

To understand more about the current capabilities of deepfakes and synthetic media, the interested reader should consult a 2022 research paper authored by Momina Masood and colleagues.[57] Their research categorizes five types of manipulations for visual content. Face swap involves morphing and superimposing facial features, often with the intention of reputation damage. Lip-syncing is a synthesized video in which the mouth movements are consistent with an audio input, making a target identity "pronounce" whatever the audio content is. Puppet mastery means taking over a source person's expressions and body moves to reenact them according to the impersonator's wish. Face synthesis means generating credible photorealistic images of nonexisting human faces, which makes it an inexhaustible source for manufacturing fake profiles. Finally, facial attribute manipulation involves altering attribute-specific regions, like adding eyeglasses, de-aging, and gender swapping, making fabricating scandals possible.

As realistic-looking fabricated content is now easy to generate and difficult to detect,[58] the risks of using AI voice-generating software and deepfakes to propagate political disinformation remain grave.[59] In 2018, comedian and director Jordan Pele released a deepfake video superimposing the likeness of US President Obama on Pele's performance to raise awareness about the potential misuse of deepfakes for political purposes.[60] The video manipulated facial expressions, lip movements, and synthetic voice, convincingly simulating Obama's well-known speech cadence, style, and appearance. The comedian released the video to emphasize that deepfake technologies now have a level of maturity that can appear credible to the naked eye. Since then, multiple deepfakes have portrayed politicians saying things they did not say or misrepresenting what they did say.[61]

The "Dead Internet" Conspiracy Theory: The Internet Is a Simulacrum

People can perceive the rapid increase of synthetic media and the overall decline in the user experience on the Internet. From boilerplate content, which reads standardized and repetitive text generated by AI algorithms, to social media bots that regurgitate variations of the same ideas, many individuals are intuitively grappling with the implications of how synthetic media is changing the social dynamics of the Web.[62] As the disconnect between the digital representation of reality and actual social dynamics grows, people turn to conspiracy theories that provide simple explanations for complex issues.[63] One of those is contemplating the possibility that the whole Internet may be a mere *simulacrum* (i.e., nothing on the Internet exists in reality).[64]

The Dead Internet conspiracy theory emerged out of the prevalence of synthetic media and bots, which misleads users into thinking that they are talking to humans. Several headlines in mainstream media discuss the preponderance of computer-generated content, such as "The Internet is Mostly Bots,"[65] and "Maybe You Missed It, but the Internet 'Died' Five Years Ago,"[66] both published in *The Atlantic* or "Yes, the bots are taking over the Internet"[67] published in *Forbes*. Ultimately, the authors describe what is already a commonplace experience for many users: an eerie feeling that the Internet is made up of bots talking to bots, following and liking bots, and posting AI-generated content designed for machine consumption, the algorithm, not humans.

Like many other conspiracy theories, the Dead Internet argues that the sophistication and extent of how AI tools manipulate social reality is possible only with the consent and direction of a secretive group of elites, a conspiracy. Rather than seeing the Internet as a predominantly human-driven enterprise, it suggests that automated traffic indicates that the Internet is no longer a human project but instead an illusion of bustling online activity when, in reality, it is a barren wasteland.[68]

People are aware of the speed at which synthetic media circulates on social media due to AI-generated images like "Shrimp Jesus" in Figure 9.1.[69] Content mills produce an endless stream of bizarre AI-generated images, often visualizing conspiracy theories and politically divisive messages, and link them to websites filled with advertisements, allowing spammers to collect ad revenue.

The Dead Internet conspiracy theory comes in two versions. The "weak" version maintains that a secretive group of elites—marketers, corporations, or governments—uses bots to steer online discussions to manipulate the population and shape social reality, keeping people infighting over petty issues online. In this version, the Internet is still part of the world, but carefully designed online discussions only *simulate* reality, steering conversations away from real issues by polarizing society over culture wars. The Internet drama keeps the population occupied and distracted, preventing them from resisting the elites secretly controlling the world.

Figure 9.1 "Shrimp Jesus" is an example of garbage posts on social media using AI-generated media content.

The "strong" version of the Dead Internet conspiracy theory claims that online activity is entirely disconnected from human activity because our society ceased to exist some time ago. In some versions, a catastrophic event occurred in the past, triggering society's collapse. Much like in the Matrix movie, in which machines enslaved humans by plugging them into virtual reality to spend their lives inside a simulated reality, this conspiracy script argues that a secretive group, perhaps an omniscient AI or aliens, keeps people connected to the Internet to hide the terrifying fact that society no longer exists. The strong form of the Dead Internet argues that the Internet and social media maintain a *simulacrum* that does not represent objective reality at all because humanity collapsed long ago.

What makes the Dead Internet a nameworthy conspiracy is that even though it is rooted in selective truths that are exaggerated or even taken to their logical extremes, it also draws attention to a legitimate problem. The

dizzying advances in automation and the unreliability of artificial intelligence make people anxious; the emulation of human activity by synthetic media blurs the boundaries between reality and representation, and distrust in AI keeps increasing. How do we make sense of bot-induced artificiality in the digital landscape? After all, the headlines of ChatGPT taking over creative jobs and human-shaped robots taking over manufacturing jobs are now almost daily occurrences.[70] In this environment, it is unsurprising that people rely on conspiracy theories to address the uncertainties related to the lack of authentic online interactions.

Future Research: Making Sense of the Flood of Synthetic Media in Disinformation Research

From a theoretical perspective, it is challenging to make sense of the impact the vast amounts of synthetic media circulating online will have on social relations on the Internet, including the spread of disinformation. One reason is that while disinformation research has focused on the practical issues that help explain what disinformation is and how it works, it still remains relatively atheoretical. In other words, it does not provide a coherent understanding that would help us make sense of an upcoming era in which synthetic media blurs the boundaries of the artificial—"the disinformation age."[71] Because the underlying phenomenon is becoming much more complex due to the democratization of AI tools is here to stay,[72] disinformation researchers should develop and lean on theory. Table 9.2 and the following lines explore three avenues for further research that require theorization.

Social Media as a System in Which Humans Interact with Synthetic Users

Disinformation researchers can draw from previous scholars who have examined the emergence of synthetic (or artificial) systems. One starting point is Herbert Simon, who introduced the concept of the artificial in his book, *The Sciences of the Artificial*.[73] Simon defines artificial as synthetic artifacts or systems created by human design, which contrasts with the naturally occurring phenomena studied in natural sciences. Humans purposefully design artificial systems to achieve specific goals, and thus, they have a function. Unlike natural sciences, which aim to uncover and explain inherent laws governing the natural world, artificial sciences are inherently prescriptive and normative, concentrating on human-made constructs. A managed forest in the forestry industry is an example of a system that may initially appear natural but is distinctly artificial under Simon's framework. Although it features natural elements such as trees, wildlife, and water bodies, a managed forest is strategically cultivated to achieve specific objectives like timber production. The selection of tree species and harvesting cycles are managed to optimize yield. Thus, despite its natural appearance, a managed forest is shaped by human purpose and engineering.

Table 9.2 Future research on synthetic media

Research themes	*Theoretical concepts*	*Examples*
Social media as a system in which humans interact with synthetic users	Assemblage thinking	How do we manage systems where humans do not have the highest priority?
	Science and technology studies	How do we distribute agency between human and non-human actors?
	Systems thinking	How do we make sense of social media as an emergent and contingent system?
The (lack of) correspondence between synthetic media and human experience	Consumer culture theory	How do people deal with the flood of content made by AI?
Response and adaptation to the flood of synthetic media and synthetic users	Socio-technical imaginaries	How do people imagine a future characterized by humans not knowing if they interact with humans or bots?
	Conspiracy theories	How do conspiracy theories propagate through bots meant to sow discord?
Parasocial relationships with synthetic users	Social sciences	How do people establish relationships with virtual influencers and digital companions?

Simon's artificial theory helps us understand that social media content does not naturally reflect human nature; instead, it is a system designed to perform a function—and a function is subject to corrections. Social media can feel organic because it ostensibly recreates human communication and social dynamics. Therefore, social media companies have argued that they are platforms that merely circulate a reflection of whatever content already interests society.[74] Moreover, the range and diversity of user-generated content appear to reflect genuine human interests, and digital platforms argue that their algorithms recommend content people already like or find interesting. However, according to Simon, "the apparent complexity of our behavior over time is largely a reflection of the complexity of the environment in which we find ourselves."[75] In other words, Simon would argue that social media content is artificial because it is curated by algorithms and platform policies to serve their commercial interests. For instance, while polarization is a social phenomenon in the real world, there is nothing natural in the algorithmic recommendation of controversial content for monetizing clicks and likes (e.g., *rage bait*). The seamless integration between user-generated content and programmatic advertising underscores the design choices of why certain content is recommended, thus revealing the artificial nature of the content circulating online.

The (Lack of) Correspondence between Synthetic Media and Human Experience

Jean Baudrillard's work can help us understand the correspondence between synthetic media and social reality.[76] Baudrillard's work examined how society constructs symbols, arguing that the symbols created by media representations affect and influence actual social relations. A representation means that a human construct stands for something real; for instance, a financial chart represents the existing supply of a given commodity, like bananas.[77] However, for Baudrillard, representations often precede social reality by shaping how the object is understood. For instance, the same financial charts can spark financial speculation about the commodity, fulfilling its prophecy, so in a way, "the map precedes the territory."[78]

Social media weakened the correspondence between representation and reality even before AI-generated synthetic content. One example is how social media influencers carefully curate selfies on Instagram that portray a person ostensibly living a luxurious and well-balanced life.[79] These representations can be accurate, but they are often fabrications designed to increase online clout. For Baudrillard, these representations become "a carnival of mirrors" that reflect images projected from other mirrors. However, synthetic media adds a layer to the disconnection by cutting out any representation. For instance, social bots aim to mislead Internet users into thinking that the accounts represent actual human beings when, in fact, the social bot is an entire fabrication. As a result, only a *simulacrum* remains. "The simulacrum is never that which conceals the truth—it is the truth which conceals that there is none. The simulacrum is true."[80] A simulacrum is a symbol of something that has no real-life counterpart, like a virtual influencer pretending to document her life as a "19-year-old robot girl," a simulacrum that constitutes its independent reality.[81]

Baudrillard's work can help examine the (dis)connection between social reality and synthetic media. Or, as in the case of the Dead Internet theory, what happens when the online reality is severed from the offline social world it claims to represent? One of Baudrillard's primary ideas is that the symbols circulating in the media are powerful enough to precede and shape social reality. One example is "The Gulf War Did Not Take Place," in which, in the context of the US-led invasion of Iraq in 1990–1991, Baudrillard explored how media representations shaped Western societies' approach to war.[82] Baudrillard argued that the Western world witnessed a media spectacle masquerading as a war. Media imagery misrepresented human suffering to such an extent that it became impossible to maintain a strong correspondence between media images and the reality on the ground. Media representations before and during the invasion included computer-generated simulations rather than independent footage. Whereas the US invasion of Vietnam came accompanied by images of human suffering fueling anti-war sentiment, the Iraq invasion circulated sanitized images of hardware, especially fighter jets

departing carriers at sunset, thus avoiding showing images of civilians suffering. For Baudrillard, war begins not when troops are deployed but when society is convinced that war is justified and imminent.

Similarly, Baudrillard argues that in a media and consumer-driven society, people are increasingly immersed in images and simulations that have little to do with external reality. The separation between objects and representations is so deep that using representations to refer to any objective reality becomes meaningless. The images and signs circulating in media shape social dynamics by becoming the references that guide how individuals form their identities and interact with others. These representations are enticing because they are so distinct from the banality of the real and the mundane; therefore, people instead seek to escape into the hedonic pleasures of simulated reality, as portrayed in new media and digital experiences.[83]

Response and Adaptation to the Flood of Synthetic Media

The rapid dissemination of computer-generated content has been identified as a driver of worsening our online experience.[84] However, how humans deal with the rapid spread of machine-produced content remains unclear. The case of the Dead Internet shows that people use real situations to negotiate socio-technical imaginaries to respond and adapt to the influx of synthetic media. As tech firms continue to minimize the harmful risks of AI spreading disinformation and undermining democracy, people must make sense of the situation with whatever means they have available, which are often conspiracy theories.

Further research should examine how humans respond and adapt to the flood of synthetic media by studying the complex interplay between societal values and technology's material capabilities. One alternative is that when faced with a flood of AI-generated content, the value of human creativity increases, becoming a luxury. Much like organic farm-to-table produce can be considered a luxury in a market saturated with ultra-processed food, human creativity may be cherished in a sea of mass-produced derivatives. This dynamic mirrors other societal trends where authenticity is prized in response to mass-produced alternatives.

A second option is for people to retreat to closed-gated platforms where they can be more likely to interact with humans, not bots. In response to the overwhelming influx of AI-generated content, individuals may retreat to closed-gated platforms characterized by restricted access and rigorous verification processes, creating a controlled environment prioritizing genuine human engagement over automated interactions. By relying on "gated" online spaces, users can gear their digital interactions toward building communities. This shift reflects a broader societal desire to preserve the integrity of personal interactions in an age where the boundaries between human and machine-generated content are increasingly blurred.

Parasocial Relationships with Synthetic Users

An emerging line of research is about the role of synthetic users as *virtual influencers*, digitally rendered social media celebrities who share similar content to real human influencers.[85] One example is Barbie's vlog, short for video blog, which features the likeness of Mattel's doll interacting online through a computer-generated persona to her 12.4M YouTube subscribers.[86] The virtual influencer Barbie is a relatable character who discusses teenage issues, especially self-improvement and friendship. Another example is Miquela Sousa,[87] the first virtual influencer to go viral on Instagram and to make it into 2018 TIME Magazine's "25 Most Influential People on the Internet."[88] In 2016, the Lil Miquela account started posting content that one would expect from a 19-year-old influencer living in Los Angeles, but now she describes herself as a "robot girl." Fans following her story on social media include 2.5 million followers on Instagram and 3.5 million on TikTok.[89]

People are developing parasocial relationships with synthetic users, including virtual influencers and digital companions. Researchers identify that people grow attached to AI companions, like *Replika*,[90] a service designed to simulate human-like companionship by responding empathetically and adapting to individual user preferences. These one-sided relationships are non-reciprocal,[91] but that does not mean they cannot convey the illusion of intimacy and even romance.[92] People feel real emotional connections even if the bot does not.[93]

Concluding Remarks

This chapter has examined the profound impact of generative AI technologies on disseminating synthetic content online. It has explored how the proliferation of synthetic media, from text and images to AI-generated companions, has increased the lack of correspondence between online and offline social reality. The chapter underscored the dual-edged nature of these developments. While they promise significant advances in science and technology, they pose substantial risks to democratic governance, especially in spreading disinformation and eroding public trust.

The proliferation of synthetic media online has become increasingly pervasive, and some users can sense it when they interact on social media with bots. This shift calls for theoretically relevant inquiries regarding the nature of the Internet and its impact on human relations, just like previous researchers did in the 1990s.[94] As people grapple with the abundance of machine-generated content, from virtual influencers to digital companions, the blurred boundaries between organic and artificial content require novel philosophical understandings. This change not only concerns disinformation research but also the broad social sciences. The evolving landscape of synthetic media calls for critically examining how individuals discern truth from falsehood in an interconnected world shaped by generative AI technologies.

The chapter opens several intriguing pathways for future research, particularly in understanding how we manage systems in which humans do not have the highest priority. As society is confronted with the flood of synthetic media, one area of interest is how people might react to the widespread dissemination of artificially generated content, from deepfakes to AI-produced art, and how these tools can be used to manipulate elections and create fake scandals. Another key focus is the evolving appreciation of human creativity—how will people value human-made works and interactions given the availability of machine-generated content? The chapter also touches on the potential retreat to closed-gated platforms as individuals seek more controlled environments to talk with humans rather than bots. Finally, it invites inquiry into the development of parasocial relationships with AI companions, exploring how emotional attachments to non-human entities might redefine human relationships and social dynamics.

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