

ARE DARK PATTERNS ANTICOMPETITIVE?

Gregory Day and Abbey Stemler

- INTRODUCTION 2
- I. PLATFORMS, ATTENTION, AND ONLINE MANIPULATION 7
 - A. *The Economic Value of Attention* 8
 - B. *The Attention Cycle* 10
 - C. *Dark Patterns and Online Manipulation* 14
- II. PRIVACY AND PRIVACY PROTECTION 16
 - A. *Privacy and Decisional Privacy* 17
 - B. *The Individual and Societal Costs of Online Manipulation* 19
 - C. *The Lack of Regulation of Online Manipulation* 22
- III. PRIVACY AND MANIPULATION IN MODERN ANTITRUST 24
 - A. *Digital Markets and Antitrust* 25
 - B. *Persuasion or Coercion in Digital Markets?* 27
 - 1. *Persuasion* 28
 - 2. *Coercion* 31
 - C. *Anticompetitive Online Manipulation* 34
 - 1. *Exclusionary Conduct* 34
 - 2. *Anticompetitive Effects* 36
- IV. IMPLICATIONS 39
 - A. *The Promise of the FTC Act and Decisional Privacy* 39
 - B. *Merger Policy* 41
 - C. *Innovation* 44
- CONCLUSION 45

ARE DARK PATTERNS ANTICOMPETITIVE?

Gregory Day* and Abbey Stemler*

Platform-based businesses (“platforms”) design websites, “apps,” and interfaces to addict and manipulate users. They do so by stimulating the release of dopamine in the brain, which creates addiction akin to gambling. When a person receives positive stimuli at random intervals, dopamine floods the brain which, after repetition, creates dependency. For instance, reports indicate that Instagram withholds notifying users of “likes” until later so as to increase their intake of dopamine. Other examples include Snapchat’s “streak” or Twitter’s app design, which opens with a blue screen and pulsating bird. Twitter’s interface, while appearing like it is loading, builds a positive feedback loop based on anticipation. These choices enable platforms to generate attention and capture data—the primary commodities of the digital economy.

With attention and data, platforms can exploit their users’ cognitive vulnerabilities in the form of “dark patterns,” which are subtle design choices meant to guide individuals towards behaviors sought by the platform, as well as other forms of digital manipulation. Digital manipulation is effective because it makes one’s actions—such as the sharing of photos, messages, geolocation, and contacts—appear like an exercise of free will. This threatens an underexplored aspect of privacy called “decisional privacy,” referring to one’s ability to make choices free of coercion. Technology firms can thus diminish privacy in the traditional sense (i.e., the unwanted collection and use of private information) and also in the context of decisional privacy.

This Article argues that digital manipulation should, in many instances, be anticompetitive. The problem is that antitrust has typically viewed efforts to coax or persuade consumers as forms of competition or even procompetitive behavior. We show that digital manipulation erodes users’ ability to act rationally, which empowers platforms to extract wealth and build market power without doing so on the merits. In fact, as antitrust enforcers and scholars begin to characterize conventional privacy as a benefit of competition, our research asserts that antitrust enforcement should go further in promoting decisional privacy. This would not only increase consumer welfare and generate competition in digital markets but also fill pressing gaps in consumer protection laws.

INTRODUCTION

The social media app Snapchat exploits elements of the human brain to capture attention. When an individual sends an image to another user over the platform, they start a “streak.” Streaks increase by one after each consecutive day of sharing images but terminate, and lose their signature fire emoji, when either user neglects to send an image during a twenty-four-hour period.¹ The issue is that streaks are addictive—literally.² Streaks trigger dopamine in the

* Assistant Professor, University of Georgia Terry College of Business; Courtesy Appointment University of Georgia School of Law.

* Assistant Professor, Indiana University Kelley School of Business; Faculty Associate, Klein Berkman Center for Internet & Society at Harvard University.

1. See generally Jennifer Powell-Lunder, *Caution: Your Tween May Be Stressing Over Snap Streaks*, PSYCH. TODAY (Mar. 26, 2017), <https://www.psychologytoday.com/us/blog/lets-talk-tween/201703/caution-your-tween-may-be-stressing-over-snap-streaks>.

2. Catherine Price, *Trapped—The Secret Ways Social Media Is Built to Be Addictive (and What You Can Do to Fight Back)*, SCI. FOCUS (Oct. 29, 2018), <https://www.sciencefocus.com/future-technology/trapped-the-secret-ways-social-media-is-built-to-be-addictive-and-what-you-can-do-to-fight-back>; see also Ashley Carman, *People Email Snapchat Because They Desperately Don’t Want to Lose Their Snapstreaks*, THE VERGE (July 24, 2019),

brain, which can effectively bond users to the platform.³ As one user expressed, “[t]he first thing I do right when I wake up is roll over to check my phone to see if people have snapchatted me When that hourglass emoji pops up, it’s go time, you get very nervous or anxious.”⁴ Since Snapchat introduced streaks, users have increased the amount of time spent on the platform by 40% and *daily active* usership has ballooned to 210 million people.⁵ Its valuation now exceeds \$3 billion.⁶

Snapchat illustrates one way in which platform-based businesses (platforms) manipulate users. Since attention is the chief commodity of the digital economy,⁷ firms design platforms⁸ and interfaces to embellish the addictive nature of dopamine: when a person receives positive stimuli at random intervals, dopamine floods the brain which, after repetition, creates dependency. Facebook’s cofounder Sean Parker described the process as, “We . . . give you a little dopamine hit.”⁹ With attention drawn, some platforms then exploit cognitive vulnerabilities to guide users towards targeted choices, known as “dark patterns.”¹⁰ For instance, an interface can present two options (“cancel” or “stay enrolled”) where the placement, color, and size of clickable boxes confuse users into selecting the platform’s preferred choice—i.e., the design navigates unwitting users towards remaining enrolled.¹¹ Additional

<https://www.theverge.com/2019/7/24/20707319/snapchat-snapstreaks-user-email-instagram-stories-whyd-you-push-that-button>; *infra* Part II.C (explaining the research on addictive technology).

3. See Price, *supra* note 2.

4. Kallie K, *Don't Put Out the Fire—A Snapchat Streak Addiction*, MEDIUM (Dec. 13, 2018), <https://medium.com/@kksoftballgirl5/dont-put-out-the-fire-a-snapchat-streak-addiction-9bf7497f2e09>.

5. See Mansoor Iqbal, *Snap Inc. Revenue and Usage Statistics (2020)*, BUSINESS OF APPS (July 30, 2020), <https://www.businessofapps.com/data/snapchat-statistics/#2>.

6. Sergei Klebnikov, *How Snapchat Became the Best-Performing Tech Stock in 2019*, FORBES (Sept. 20, 2019), <https://www.forbes.com/sites/sergeiklebnikov/2019/09/20/how-snapchat-became-the-best-performing-tech-stock-in-2019/#bc58d4410d9c>.

7. See John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 156–57 (2015) (explaining the economic value of attention in modern markets).

8. Limits in terminology make the use of the word “platform” somewhat confusing. Platforms create platforms, which are the digital spaces built on a “participative infrastructure.” Sangeet Paul Choudary, *The Architecture of Digital Labour Platforms: Policy Recommendations on Platform Design for Worker Well-Being*, in 3 INT’L LABOUR ORG., FUTURE OF WORK RSCH. PAPER SERIES 1, 1–2 (2018). These digital spaces are what platforms use to mediate interactions and generate revenue.

9. Simon Parkin, *Has Dopamine Got Us Hooked on Tech?*, THE GUARDIAN (Mar. 4, 2018), <https://www.theguardian.com/technology/2018/mar/04/has-dopamine-got-us-hooked-on-tech-facebook-apps-addiction>.

10. Harry Brignull, *Dark Patterns: Inside the Interfaces Designed to Trick You*, THE VERGE (Aug. 29, 2013), <https://www.theverge.com/2013/8/29/4640308/dark-patterns-inside-the-interfaces-designed-to-trick-you> (“A dark pattern is a user interface carefully crafted to trick users into doing things they might not otherwise do”). “Online manipulation” as a broader concept is discussed *infra* notes 106–10; see also Jamie Luguri & Lior Jacob Strahilevitz, *Shining a Light on Dark Patterns* (U. Chi., Pub. L. Working Paper No. 719, 2019), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431205.

11. Courtney Linder, *These “Dark Patterns” Trick You into Spending More Money Online*, POPULAR MECHS. (Jan. 5, 2020), <https://www.popularmechanics.com/technology/design/a30211398/dark-patterns-online-shopping>; see *infra* Part II (discussing scientific research on manipulation).

examples of dark patterns include the roach motel,¹² confirmshaming,¹³ and privacy Zuckering.¹⁴

Dark patterns and other forms of online manipulation are effective because they make a user's behaviors feel organic—one's actions *appear* like an exercise of free will.¹⁵ This threatens an essential aspect of privacy called “decisional privacy,” which refers to the invasion of internal decision-making.¹⁶ When a platform erodes decisional privacy, the guise is that users have freely shared their contact lists, photos, metadata, geolocations, messages, and other personal information. Tech firms can thus diminish privacy in the traditional sense (i.e., the unwanted collection and use of private information) and also in the context of decisional privacy.

Notably, few if any firms have incurred antitrust liability in the United States exclusively for eroding privacy, despite the rise of concentrated digital markets—e.g., Facebook (74.17% of social media),¹⁷ Google (90.8% of online searches),¹⁸ and YouTube (73.75% of video sharing).¹⁹ The obstacle is that antitrust law fosters competition for the *economic* benefit of consumers, which has largely led courts to condition antitrust liability on artificially high prices.²⁰ Since low prices and “free” services have in many instances allowed platforms and similar tech firms to skirt review, vigorous debate has emerged about

12. A roach motel is a design that makes it easy for users to enroll but hard to exit. *Roach Motel*, DARK PATTERNS, <https://www.darkpatterns.org/types-of-dark-pattern/roach-motel> (last visited Aug. 18, 2020).

13. Confirmshaming involves designs where the platform makes a user feel guilty for not selecting an option—such as airlines that make users click on the option “No, I do not want to protect my trip” to reject travel insurance when booking a flight. *Confirmshaming*, DARK PATTERNS, <https://www.darkpatterns.org/types-of-dark-pattern/confirmshaming> (last visited Aug. 18, 2020).

14. For example, Facebook subtly gets Whatsapp users to allow Facebook, which owns Whatsapp, to access the users' friends and all other Facebook data—often without user awareness. Mohit, *Privacy Zuckering: Deceiving Your Privacy by Design*, MEDIUM (Apr. 10, 2017), <https://medium.com/@mohityadav0493/privacy-zuckering-deceiving-your-privacy-by-design-d41b6263b564> (explaining privacy Zuckering).

15. Lauren E. Willis, *Performance-Based Remedies: Ordering Firms to Eradicate Their Own Fraud*, 80 LAW & CONTEMP. PROBS. 7, 13 (2017) (“A recent example of a dark pattern is online payments system operator PayPal's alleged use of various features of webpage design to trick consumers into signing up for and using PayPal Credit when they thought they were using their existing free PayPal transaction accounts.”).

16. Helen L. Gilbert, *Minors' Constitutional Right to Informational Privacy*, 74 U. CHI. L. REV. 1375, 1375 (2007) (defining decisional privacy as “autonomy in making important decisions.”); Scott Skinner-Thompson, *Outing Privacy*, 110 NW. U. L. REV. 159, 161 (2015) (noting that decisional privacy is protected under the Constitution). Decisional privacy is also part of Daniel Solove's four-part taxonomy of privacy harms. Daniel J. Solove, *A Taxonomy of Privacy*, 154 U. PA. L. REV. 477, 489 (2006); *see also infra* Part II.

17. *Social Media Stats Worldwide*, STATCOUNTER, <http://gs.statcounter.com/social-media-stats> (last visited Aug. 19, 2020).

18. Jeff Desjardins, *How Google Retains More Than 90% of Market Share*, BUS. INSIDER (Apr. 23, 2018), <https://www.businessinsider.com/how-google-retains-more-than-90-of-market-share-2018-4>.

19. YouTube, DATANYZE, <https://www.datanyze.com/market-share/online-video/youtube-market-share> (last visited Aug. 19, 2020).

20. *See* Marina Lao, *Tortious Interference and the Federal Antitrust Law of Vertical Restraints*, 83 IOWA L. REV. 35, 39 (1997) (“[T]he exclusive purpose of antitrust law should be to promote allocative efficiency, and that political and social concerns only distort and confuse the analysis. Thus, the argument continues, the Sherman Act should punish only practices that restrict output, as only output restrictions are inefficient under price theory.” (emphasis omitted) (footnotes omitted)).

antitrust's role in digital markets.²¹ The failure to promote privacy as a function of consumer welfare has, it seems, enabled “big tech” to manipulate users without fear of recourse.

An equally important obstacle is that antitrust's precedent has generally described persuasion as a form of competition rather than anticompetitive behavior. The belief is that firms compete by advertising, designing products, and employing tactics meant to persuade consumers.²² Even if conduct is false or misleading, antitrust courts may refuse to intervene if no rivals were conventionally foreclosed.²³ In fact, when persuasion causes consumers to purchase more of a good, courts,²⁴ scholars,²⁵ and the leading treatise²⁶ have described this result as *procompetitive*.²⁷ So, based on current precedent, courts are unlikely to recognize digital manipulation as something that antitrust may remedy.

Our research responds to recent statements by the federal agencies asserting that digital markets might require new antitrust rules. According to Makan Delrahim, head of the Department of Justice's (DOJ) Antitrust Division, one cannot analogize product markets to digital markets, calling many comparisons “too simplistic to be useful.”²⁸ Delrahim argues that digital markets have altered what it means to exclude competition or impair consumer welfare, requiring courts and scholars to readdress what conduct violates antitrust law.²⁹

21. See Newman, *supra* note 7, at 160 (finding “multiple examples of courts creating de jure antitrust immunity by declining to apply antitrust scrutiny in zero-price contexts. These courts have done so on the grounds that the antitrust laws cannot apply in the absence of prices.”); Frank Pasquale, *When Antitrust Becomes Pro-Trust: The Digital Deformation of U.S. Competition Policy*, CPI ANTITRUST CHRON. 1, 1–2 (May 15, 2017), <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/05/CPI-Pasquale.pdf>.

22. Retail Digit. Network, LLC v. Appelsmith, 810 F.3d 638, 649 (9th Cir. 2016) (“Indeed, at least when the audience of commercial speech consists of adult consumers in possession of their faculties, the fact [t]hat the State finds expression too persuasive does not permit it to quiet the speech or to burden its messengers.” (alteration in original) (citation omitted)).

23. Schachar v. Am. Acad. of Ophthalmology, Inc., 870 F.2d 397, 400 (7th Cir. 1989) (“The Academy's declaration affected only the demand side of the market, and then only by appealing to consumers' (and third-party payors') better judgment. If such statements should be false or misleading or incomplete or just plain mistaken, the remedy is not antitrust litigation but more speech—the marketplace of ideas.”).

24. Gemini Concerts, Inc. v. Triple-A Baseball Club Assocs., 664 F. Supp. 24, 26 (D. Me. 1987) (“A collaboration that increases output and that ‘makes possible the very activity that is allegedly restrained’ is procompetitive and reasonable under the antitrust laws.” (quoting 7 P. Areeda, ¶ 1503(b), at 375; ¶ 1504, at 379)).

25. Herbert Hovenkamp, *Discounts and Exclusion*, 2006 UTAH L. REV. 841, 843 (2006) (“Nearly all are output increasing, and thus procompetitive.”); see also William S. Comanor, *Vertical Price-Fixing, Vertical Market Restrictions, and the New Antitrust Policy*, 98 HARV. L. REV. 983, 988 (1985) (describing the position of Bork and Chicago school as that output increases are procompetitive).

26. PHILLIP E. AREEDA ET AL., ANTITRUST LAW, ¶ 1503 at 375 (3d ed. 2007) (“An increase in output is pro-competitive.”).

27. See *infra* Part III.B.

28. Makan Delrahim, Assistant Att’y Gen., Dep’t of Just., Antitrust Div., Address at Harvard Law School: “Blind[ing] Me With Science”: Antitrust, Data, and Digital Markets 4 (Nov. 8, 2019), <https://www.justice.gov/opa/speech/file/1217071/download>.

29. *Id.* at 1–2.

We argue that online manipulation should in many instances rise to the level of anticompetitive. Consumer welfare erodes when a platform excludes competition and coerces users into paying attention, spending money, generating data, or revealing personal information against their best interests; this unreasonably transfers wealth from consumers to the firm, which some scholars insist is what the antitrust laws were meant to redress.³⁰ To make this case, online manipulation is shown to impair decision-making by not only exploiting cognitive vulnerabilities but also causing physical alterations of the brain.³¹ This produces an array of effects, including anxiety, depression, antisocial behavior, risk-taking, and—salient for antitrust—the erosions of privacy and consumer welfare.³² The manner in which big tech builds market power by manipulating free will is not, as we argue, a legitimate form of competition.

Increased competition would also reduce digital manipulation. With competition, users could punish firms that employ manipulative designs. If consumers lacked a viable option, in competitive markets, firms would be expected to meet demand by innovating fewer manipulative goods. Further, a core function of competition is information: firms vie for consumers by spreading information about the ways their services are superior.³³ This should build recognition and increase demand about the value of decisional privacy and costs associated with digital manipulation, as evidenced by the emerging market for digital wellness services.³⁴ And as discussed later, Facebook has even entered this market—innovating and marketing its own digital wellness program—in a likely response to Snapchat’s addictive technologies.

Note that our argument remains true to antitrust’s spirit, as courts have already—albeit in different contexts—condemned coercive forms of innovation. We extend this precedent to show that antitrust should intervene when a monopolist has employed manipulation to build market power and capture wealth surpluses. Supporting our position, not only have the agencies recently asserted that privacy may reflect a benefit of competition,³⁵ but the

30. John B. Kirkwood & Robert H. Lande, *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*, 84 NOTRE DAME L. REV. 191, 192 (2008) (describing antitrust’s purpose). *But see* ROBERT H. BORK, *THE ANTITRUST PARADOX* 122 (1978).

31. *See infra* notes 138–166 and accompanying text.

32. *Id.*

33. Gregory Day & Abbey Stemler, *Infracompetitive Privacy*, 105 IOWA L. REV. 61, 63–64 (2019) (describing how competition generates information about products).

34. A cottage industry has recently emerged helping consumers and users to alleviate digital addiction. Jeremy Goldman, *6 Apps to Stop Your Smartphone Addiction*, INC. (Oct. 21, 2015), <https://www.inc.com/jeremy-goldman/6-apps-to-stop-your-smartphone-addiction.html>.

35. Speech, *Assistant Attorney General Makan Delrahim Delivers Remarks for the Antitrust New Frontiers Conference*, DEP’T OF JUSTICE (Jun. 11, 2019), <https://www.justice.gov/opa/speech/assistant-attorney-general-makan-delrahim-delivers-remarks-antitrust-new-frontiers> (“[D]iminished quality is also a type of harm to competition. As an example, privacy can be an important dimension of quality. By protecting

DOJ's Delrahim has remarked that tech giants abuse their data advantages over "the most intimate aspects of *human choice and behavior*," which "impact[s] consumer choice altogether."³⁶ Since digital markets demand that we reexamine what it means to exclude competition, our research applies case law regarding coercion to the challenges of digital markets.

This Article proceeds in four parts. Part I discusses the manner in which platforms and similar companies monetize attention as the primary currency of the digital economy. It then explores how interfaces are designed to hook users, allowing platforms to maintain attention and influence behavior. Part II delves into the nature of privacy, discussing the harms arising from eroded autonomy. It also explains why U.S. privacy laws have so far offered little relief against online manipulation. Part III discusses why antitrust enforcement has yet to condemn manipulation as an anticompetitive effect and why it *should*. The argument is that online manipulation can so overcome free will that anticompetitive effects generate. Part IV addresses policy implications.

I. PLATFORMS, ATTENTION, AND ONLINE MANIPULATION

With a combined market capitalization of \$5.9 trillion, companies relying on platform technology lie at the heart of the modern economy,³⁷ including Apple, Google, and Facebook.³⁸ Platforms facilitate the exchange of goods, services, and content by reducing transaction costs and information asymmetries.³⁹ To attract users, most platforms provide "free"⁴⁰ or low-price services.⁴¹ Although its revenue may come from a variety of sources—including

competition, we can have an impact on privacy and data protection. Moreover, two companies can compete to expand privacy protections for products or services . . .").

36. *Id.* (emphasis added); *US: DOJ Antitrust Chief Outlines Role of Data in Antitrust Review*, COMPETITION POL'Y INT'L (Nov. 10, 2019), <https://www.competitionpolicyinternational.com/us-doj-antitrust-chief-outlines-role-of-data-in-antitrust-review>.

37. Jeff Desjardins, *Tech's 20 Largest Companies Are Based in 2 Countries*, BUS. INSIDER (July 9, 2018), <https://www.businessinsider.com/techs-20-largest-companies-are-based-in-2-countries-2018-7>. The information technology (IT) sector is broadly defined to include firms that produce semiconductors, software and technology services, and hardware. Makada Henry-Nickie et al., *Trends in the Information Technology Sector*, BROOKINGS (Mar. 29, 2019), <https://www.brookings.edu/research/trends-in-the-information-technology-sector>. Naturally, not all firms within the IT sector rely on online manipulation to drive revenue (e.g., Intel, IBM, and Oracle). This Article, therefore, limits its arguments to those specific technology firms that create and maintain platforms as a key part of their business models.

38. Jonathan Ponciano, *The Largest Technology Companies in 2019: Apple Reigns as Smartphones Slip and Cloud Services Thrive*, FORBES (May 15, 2019), <https://www.forbes.com/sites/jonathanponciano/2019/05/15/worlds-largest-tech-companies-2019/#2db7e119734f>.

39. Choudary, *supra* note 8.

40. Use of the word "free" is considered misleading since even zero-price services tend to come at a cost in terms of attention or forms of consideration. For this reason, scholars tend to prefer the term "zero-price." See generally John M. Newman, *The Myth of Free*, 86 GEO. WASH. L. REV. 513, 524–26 (2018) (explaining the economics of "free").

41. Evgeny Morozov, *Cheap Cab Ride? You Must Have Missed Uber's True Cost*, THE GUARDIAN (Jan. 30, 2016), <https://www.theguardian.com/commentisfree/2016/jan/31/cheap-cab-ride-uber-true-cost-google-wealth-taxation>.

fees from peer-to-peer transactions (e.g., eBay and Uber), ad-targeting (e.g., Facebook and Snapchat), or subscriptions (e.g., Netflix and Tinder)—a platform’s success depends on its ability to draw and maintain attention.⁴²

This Part explores online manipulation in the competition for attention. To do so, it: (1) discusses the value of attention; and (2) analyzes the ways in which interfaces are designed to draw attention and create addiction via dopamine rushes and similar techniques; and (3) describes subtle methods of manipulating users, like dark patterns, once their attention has been captured.

A. *The Economic Value of Attention*

Attention plays a critical role in any platform’s profitability.⁴³ Although platforms employ myriads of strategies to create value from attention, the most obvious method involves advertising. The value of advertising increases in concert with the number of users engaged on the platform as well as time spent on it.⁴⁴ Take YouTube, for example, which derives advertising revenue from the 1 billion hours that users spend on the platform *each day*.⁴⁵ Or take Google, which accrues the majority of its revenue—\$40.3 billion in the third quarter of 2019 alone⁴⁶—from its subsidiary, AdSense.⁴⁷

Another strategy to monetize platform technology includes data analysis, as platforms can record each user’s interactions with other users, the platform itself, and outside stimuli. Note the hyper-detailed nature of this collection: firms may track what people claim to want (their search query), what they *actually* want (which link is selected or product is purchased), how impulsively

42. See Max Eddy, *How Companies Turn Your Data into Money*, PCMAG (Oct. 10, 2018), <https://www.pcmag.com/news/how-companies-turn-your-data-into-money> (“A publisher’s audience is their currency . . . No matter how they make money from content—be it through advertising, paid subscription or syndication, a publisher’s core asset is audience and audience data.”).

43. See generally TIM WU, *THE ATTENTION MERCHANTS* 19 (2016) (“The neuroscience of attention, despite having greatly advanced over the past few decades, remains too primitive to explain comprehensively the large-scale harvesting of attention.”). Initial capturing of attention by firms and industries tends to go from lurid and shocking to sustaining. As Tim Wu puts it, “The most successful [companies and industries] know how to bear downwind, to get moving, but also the delicate art of bearing back upwind to sustain the audience; a continual diet of the purely sensational wears audiences out, makes them seek some repose.” *Id.* at 100–01.

44. See John M. Newman, *Regulating Attention Markets* (July 22, 2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3423487 (“Attention has become one of the most valuable resources in modern economies. The convergence of digital computing and networking facilitated unprecedented growth in the amount of information vying for humans’ attention. As information has become increasingly abundant, attention has become increasingly scarce, and therefore more valuable. . . . Adults in the United States collectively devote well over 700 billion hours each year to advertising-supported media. That amount of attention has been valued at some \$5.9 trillion” (footnotes omitted)).

45. Stuart Dredge, *Morgan Stanley Suggests YouTube Valuation Is \$160bn*, MUSIC ALLY (May 22, 2018), <https://musically.com/2018/05/22/morgan-stanley-suggests-youtube-valuation-is-160bn>.

46. *Revenue of Google from 1st Quarter 2008 to 2nd Quarter 2020*, STATISTA, <https://www.statista.com/statistics/267606/quarterly-revenue-of-google/> (last visited Jan. 10, 2019).

47. David Mullen-Muhr, Editorial, *Big Data Is Dead, Long Live Big Data*, COIN GEEK (Dec. 25, 2019), <https://coingeek.com/big-data-is-dead-long-live-big-data>.

those decisions are made (how long one's cursor hovers over an option), where the decision is made (at home or remotely on one's smartphone), and what engages users the longest (whether users log off at patterned times).⁴⁸ Artificial intelligence can then detect subtle patterns of behavior, which platforms may exploit to generate more attention and business.

Returning to YouTube, experts credit the platform's profitability (\$15 billion of revenue in 2019) on its algorithm, which curates playlists to keep users engaged.⁴⁹ Also, Netflix uses insights gleaned from the tracking of viewing habits to create its in-house content.⁵⁰ Uber studies mapping, driving tendencies, and user preferences to improve its ridesharing service as well as, based on this analysis, enter new markets such as the food delivery industry.⁵¹ In the case of Amazon, not only does Amazon target users with specific products, but it also analyzes data to identify popular items to mimic.⁵² Once the tech giant has copied a competitor's product, Amazon can list the copycat good above its rival's listing,⁵³ boosting Amazon's market dominance.⁵⁴

Platform companies can also sell or transfer data. The value of a person's data is about \$240 per year,⁵⁵ or more if one is divorcing, pregnant, or buying a new home.⁵⁶ Reports indicate, for example, that Instagram has developed keen insights into global fashion trends—information worth fortunes to retailers, media executives, and fashion designers—by analyzing the roughly 100 million

48. See SCOTT GALLOWAY, *THE FOUR: THE HIDDEN DNA OF AMAZON, APPLE, FACEBOOK, AND GOOGLE* 5 (2018); see also Kris Reid, *11 Search Statistics You Need to Know in 2020*, ARDOR SEO, <https://ardorseo.com/blog/how-many-google-searches-per-day/> (last visited Sept. 10, 2020).

49. See Joshua Dance, *Decoding the YouTube Algorithm, for Fun and Profit*, MEDIUM (Jan. 13, 2017), <https://medium.com/@joshdance/decoding-the-youtube-algorithm-for-fun-and-profit-5dba0de8561a> (explaining the history and development of YouTube's algorithms).

50. Enrique Dans, *How Analytics Has Given Netflix the Edge over Hollywood*, FORBES (May 27, 2018), <https://www.forbes.com/sites/enriquedans/2018/05/27/how-analytics-has-given-netflix-the-edge-over-hollywood/#2307c8766b23> (reviewing Netflix's study of data).

51. Kia Kokalitcheva, *Not Everyone Agrees on the Future of Uber Drivers When Self-Driving Cars Arrive*, FORTUNE (Oct. 14, 2016), <http://fortune.com/2016/10/14/uber-driver-future-self-driving-cars/> (“Uber right now has drivers doing R&D for a robotic self-driving car.”).

52. See Eugene Kim, *Amazon Has Been Promoting Its Own Products at the Bottom of Competitors' Listings*, CNBC (Mar. 18, 2019, 3:48 PM), <https://www.cnbc.com/2018/10/02/amazon-is-testing-a-new-feature-that-promotes-its-private-label-brands-inside-a-competitors-product-listing.html> (discussing Amazon's strategy of reordering search results to favor its own goods).

53. *Id.*

54. See Ingrid Lunden, *Amazon's Share of the US E-Commerce Market Is Now 49%, or 5% of All Retail Spending*, TECH CRUNCH (Jul. 13, 2018), <https://techcrunch.com/2018/07/13/amazons-share-of-the-us-e-commerce-market-is-now-49-or-5-of-all-retail-spend/>; see also George Anderson, *Amazon Was Wise to Head Antitrust Regulators Off at the Pass*, FORBES (Mar. 21, 2019), <https://www.forbes.com/sites/retailwire/2019/03/21/amazon-was-wise-to-head-antitrust-regulators-off-at-the-pass/#6a54ac342c27>.

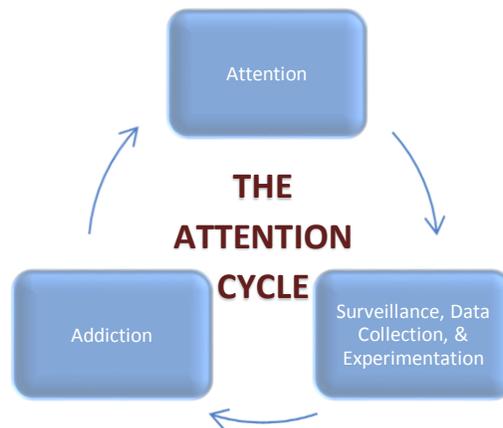
55. Wibson, *How Much Is >Your< Data Worth? At Least \$240 Per Year. Likely Much More.*, MEDIUM (Jan. 19, 2018), <https://medium.com/wibson/how-much-is-your-data-worth-at-least-240-per-year-likely-much-more-984e250c2ffa>.

56. Emily Steel et al., *How Much Is Your Personal Data Worth?*, FIN. TIMES (June 12, 2013), <https://ig.ft.com/how-much-is-your-personal-data-worth>.

photos shared over the platform.⁵⁷ Likewise, “smart” household appliances such as refrigerators and thermostats, known as the “Internet of Things,” generate data which the energy, health care, and food sectors value greatly.⁵⁸ So, whether through the tracking of fashion photographs or household behaviors, the monetization of data depends on how much time a user spends on the platform and the number of interactions on it.⁵⁹

B. *The Attention Cycle*

The key to attracting and maintaining attention is the self-sustaining “Attention Cycle,” designed to increase the amount of time spent on the platform.⁶⁰ Attention Cycles start with the captivation of attention.⁶¹



57. Emerging Technology from the arXiv, *Data-Mining 100 Million Instagram Photos Reveals Global Clothing Patterns*, MIT TECH. REV. (June 15, 2017), <https://www.technologyreview.com/s/608116/data-mining-100-million-instagram-photos-reveals-global-clothing-patterns>.

58. See Brian T. Horowitz, *8 IoT Trends to Watch in 2019*, PCMag (Jan. 21, 2019), <https://www.pcmag.com/feature/365945/8-iot-trends-to-watch-in-2019> (noting companies which value the deductions generated by IoT).

59. See David S. Evans, *Attention Platforms, the Value of Content, and Public Policy*, 54 REV. OF INDUS. ORG. 775, 776 (2019) (explaining the value of data).

60. See *infra* Figure 1; see generally Evans, *supra* note 59 (explaining the economics of platforms and attention).

61. See *infra* Figure 1. We recognize that the experimentation and influence on users to retain their attention may be a form of online manipulation. However, our larger argument is that attention, in whatever way it is obtained, is essential for all forms of online manipulation. Evans, *supra* note 59, at 20 (citing Guus Pijpers, *Brain Matters*, in INFORMATION OVERLOAD: A SYSTEM FOR BETTER MANAGING EVERYDAY DATA (2010)); E. BRUCE GOLDSTEIN, COGNITIVE PSYCHOLOGY: CONNECTING MIND, RESEARCH AND EVERYDAY EXPERIENCE (4th ed. 2015)) (describing privacy as the ability to focus on one “discrete stream of information” and “disregard almost everything [else]”).

To do so, some platforms offer “free”⁶² services such as Instagram’s photo filtering system.⁶³ Others provide a zero-price trial with access to content like Netflix’s offering of *Friends*, which alone was responsible for over 32.6 billion minutes of screen time in 2018.⁶⁴ With attention drawn, a platform can then influence behaviors, as explained in the next Section. The issue here is that strategies to increase attention may violate a user’s expectations of privacy, as platforms may: (1) surveil intimate aspects of life; (2) subject users to experimentation; and (3) manipulate physiological reactions to create addiction.

As for experimentation, the most basic level involves A/B testing, where a platform compares two versions of an interface.⁶⁵ By testing reactions to the original interface against a modified version, the platform can determine the most influential design.⁶⁶ Airbnb, for instance, used A/B testing to increase bookings through its search page.⁶⁷ Also, Facebook studied voting behaviors on unwitting users. It showed one group of users a link to their polling place, a clickable “I voted” button, and profile pictures of friends who had voted.⁶⁸ A second group saw the link and button but not the pictures.⁶⁹ Users who saw the pictures were 0.39% more likely to vote⁷⁰—a significant amount in light of close contests, such as the 2000 presidential election between George W. Bush and Al Gore.⁷¹

Experiments may even employ gamification strategies.⁷² This involves prizes, levels, or other tokens designed to keep users seeking the next goal.⁷³ As the *New York Times* reported, Uber informs drivers about the number of trips given, money made, rating, and time spent on the app in an effort to “drive

62. See Newman, *supra* note 40 (explaining the economic problems in the term “free”).

63. See *id.*

64. Jason Lynch, *The Office, Friends and Grey’s Anatomy Were Netflix’s Most Streamed Shows Last Year*, ADWEEK (May 7, 2019), <https://www.adweek.com/tv-video/the-office-friends-and-greys-anatomy-were-netflixs-most-streamed-shows-last-year>.

65. See *A/B Testing*, OPTIMIZELY, <https://www.optimizely.com/optimization-glossary/ab-testing/> (last visited Nov. 17, 2019).

66. *Id.*

67. Jan Overgoor, *Experiments at Airbnb*, MEDIUM (May 27, 2014), <https://medium.com/airbnb-engineering/experiments-at-airbnb-e2db3abf39e7>.

68. Robert M. Bond et al., *A 61-Million-Person Experiment in Social Influence and Political Mobilization*, 489 NATURE 295, 295 (2012); see also Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995, 1011–12 (2014).

69. Bond et al., *supra* note 68, at 295.

70. *Id.* at 295–96.

71. The election, by mainstream beliefs, was decided by a mere 537 votes. Michael Levy, *United States Presidential Election of 2000*, ENCYCLOPEDIA BRITANNICA (Oct. 31, 2019), <https://www.britannica.com/event/United-States-presidential-election-of-2000>.

72. See Thorin Klosowski, *The Psychology of Gamification: Can Apps Keep You Motivated?*, LIFEHACKER (Feb. 13, 2014), <https://lifehacker.com/the-psychology-of-gamification-can-apps-keep-you-motiv-1521754385>.

73. See Simone Stolzoff, *The Formula for Phone Addiction Might Double as a Cure*, WIRED (Feb. 1, 2018), <https://www.wired.com/story/phone-addiction-formula>.

compulsive game-playing.”⁷⁴ It noted further that, in designing these strategies, “Uber collects staggering amounts of data that allow it to discard game features that do not work and refine those that do.”⁷⁵

In fact, platform companies can experiment to identify strategies that best stimulate the release of neurochemicals essential to addiction.⁷⁶ Dopamine is a neurotransmitter that rewards the body when a positive event occurs *randomly*.⁷⁷ While debate persists about whether dopamine addiction is more akin to heroin⁷⁸ or gambling,⁷⁹ it nevertheless addicts users when they seek its repeated pleasures.⁸⁰ To this end, platforms can design a “variable reward schedule” to give users randomized experiences of affirmation.⁸¹ As the former Vice President of User Growth at Facebook, Chamath Palihapitiya, lamented, “I feel tremendous guilt The short-term, dopamine-driven feedback loops that we have created are destroying how society works.”⁸² Insiders have also referred to this tactic as “brain hacking.”⁸³

Illustrating this strategy, Twitter’s app opens with a blue screen meant to *appear* like it is loading, though the design is actually building anticipation for one’s tweets.⁸⁴ By facilitating a feedback loop, the release of dopamine causes

74. Noam Scheiber, *How Uber Uses Psychological Tricks to Push Its Drivers’ Buttons*, N.Y. TIMES (Apr. 2, 2017), <https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html>.

75. *Id.*

76. See Claudia Dreifus, *Why We Can’t Look Away from Our Screens*, N.Y. TIMES (Mar. 6, 2017), <https://www.nytimes.com/2017/03/06/science/technology-addiction-irresistible-by-adam-alter.html> (“The people who create video games wouldn’t say they are looking to create addicts. They just want you to spend as much time as possible with their products.”); see also David Brooks, *How Evil Is Tech?*, N.Y. TIMES (Nov. 20, 2017), <https://www.nytimes.com/2017/11/20/opinion/how-evil-is-tech.html> (“The second critique of the tech industry is that it is causing this addiction on purpose, to make money. Tech companies understand what causes dopamine surges in the brain and they lace their products with ‘hijacking techniques’ that lure us in and create ‘compulsion loops.’”).

77. Phil Newton, *What Is Dopamine?*, PSYCH. TODAY (Apr. 26, 2009), <https://www.psychologytoday.com/us/blog/mouse-man/200904/what-is-dopamine>.

78. See Seth Ferranti, *How Screen Addiction Is Damaging Kids’ Brains*, VICE (Aug. 6, 2016), https://www.vice.com/en_us/article/5gqb5d/how-screen-addiction-is-ruining-the-brains-of-children (“I’ve worked with hundreds of heroin addicts and crystal meth addicts, and what I can say is that it’s easier to treat a heroin addict than a true screen addict”).

79. See Nitasha Tiku, *The WIRED Guide to Internet Addiction*, WIRED (Apr. 18, 2018), <https://www.wired.com/story/wired-guide-to-internet-addiction>.

80. See Dreifus, *supra* note 76 (“We’re biologically prone to getting hooked on these sorts of experiences.”).

81. See Trevor Haynes, *Dopamine, Smartphones & You: A Battle for Your Time*, SCI. IN THE NEWS BLOG (May 1, 2018), <http://sitn.hms.harvard.edu/flash/2018/dopamine-smartphones-battle-time>.

82. See Haynes, *supra* note 81.

83. See Anderson Cooper, *What Is “Brain Hacking”? Tech Insiders on Why You Should Care*, 60 MINUTES (Apr. 9, 2017), <http://cbsnews.com/news/brain-hacking-tech-insiders-60-minutes>.

84. Avery Hartmans, *These Are the Sneaky Ways Apps Like Instagram, Facebook, Tinder Lure You in and Get You “Addicted”*, BUS. INSIDER (Feb. 17, 2018), <https://www.businessinsider.com/how-app-developers-keep-us-addicted-to-our-smartphones-2018-1> (“[E]ach time you open the Twitter app, the screen is blue for a moment. Then the white Twitter bird pulsates and eventually, the bird widens to reveal your feed. While most people, if they notice this at all, may chalk this up to a slow connection, a lot of traffic to the app, or an old,

users to return to the app more frequently.⁸⁵ Similar mechanisms are used by Facebook and Instagram—found in the “Like” feature and “pull-to-refresh” device⁸⁶—as well as casinos which design slot machines to unveil gambling results.⁸⁷ One report exposed Instagram’s strategy of *withholding* likes so that users enjoy dopamine rushes at more elongated, random intervals.⁸⁸ In fact, Instagram tailors variable reward schedules to specific users, notifying one of likes when its algorithms predict the greatest influence on that user’s attention.⁸⁹ Other addictive devices include the infinite scroll (where an app’s feed is a never-ending random interaction), autoplay (where Netflix or YouTube automatically transitions users into subsequent videos), and short-term goals (Snapchat’s streak).⁹⁰

Especially alarming is that children are prime targets—“[t]he fact that video games are designed to be addictive is an open secret in the gaming industry.”⁹¹ A ubiquitous feature of video games such as *Fortnite*, *Call of Duty*, or *Borderlands* is the loot box, which entails a mysterious prize or reward, including weapons, skins (character costumes), or actual money.⁹² Gamers earn loot boxes at randomized times with little hint of their contents,⁹³ producing the same compulsion loops as found in digital platforms.⁹⁴ As one gamer remarked about his former gambling addiction, “[L]oot boxes started it all over again. It has exactly the same dopamine trigger and the same programming of a slot machine. The cool colors and sound effect please the addicted.”⁹⁵ So by randomizing

slow phone, that’s not the case. This happens every time you open Twitter, no matter where you are or how fast your device is. That delay, those few seconds where you’re not sure what you’re going to see, is enticing. You may be rewarded with new Tweets, or you may see things you already read yesterday. You don’t know what you’re getting, and it keeps you coming back for more.”)

85. Julian Morgans, *The Secret Ways Social Media Is Built for Addiction*, VICE (May 17, 2017), https://www.vice.com/en_nz/article/vv5jkb/the-secret-ways-social-media-is-built-for-addiction.

86. See Price, *supra* note 2.

87. *Id.*

88. Haynes, *supra* note 81 (describing Instagram’s feature as a “variable-ratio reward schedule”).

89. Cooper, *supra* note 83.

90. Tiku, *supra* note 79.

91. Ferris Jabr, *Can You Really Be Addicted to Video Games?*, N.Y. TIMES (Oct. 23, 2019), <https://www.nytimes.com/2019/10/22/magazine/can-you-really-be-addicted-to-video-games.html> (“With the help of hired scientists, game developers have employed many psychological techniques to make their products as unquittable as possible. . . . Perhaps the most explicit manifestation of manipulative game design is the rising popularity of loot boxes . . .”).

92. See Alex Wiltshire, *Behind the Addictive Psychology and Seductive Art of Loot Boxes*, PC GAMER (Sept. 28, 2017), <https://www.pcgamer.com/behind-the-addictive-psychology-and-seductive-art-of-loot-boxes>.

93. See *id.*; see also Mattha Busby, *Loot Boxes Increasingly Common in Video Games Despite Addiction Concerns*, THE GUARDIAN (Nov. 22, 2019), <https://www.theguardian.com/games/2019/nov/22/loot-boxes-increasingly-common-in-video-games-despite-addiction-concerns>.

94. Ted Knutson, *Video Games Can Be a Gateway to Problem Gambling, FTC Warned*, FORBES (Aug. 8, 2019), <https://www.forbes.com/sites/tedknutson/2019/08/08/video-games-can-be-a-gateway-to-problem-gambling-ftc-warned/#2049a58978a0>.

95. *Id.*

pleasure in a manner causing the release of dopamine, a platform can create dependency and, thus, boost the amount of attention spent on it.⁹⁶

In fact, highlighting the severity of addiction, the manipulation of dopamine receptors to increase attention may not only create recognized forms of addiction but also physical alterations of the brain, embellishing the severity of one's addiction. This discussion is found in Part II.B.

C. *Dark Patterns and Online Manipulation*

Aided by attention, an array of platforms employ dark patterns and similar forms of online manipulation to drive decision-making.⁹⁷ First coined in 2010 by the interface designer, Harry Brignull,⁹⁸ dark patterns are subtle design choices in digital interfaces intended to elicit certain behaviors from users.⁹⁹ The mechanics of dark patterns and other forms of online manipulation are rooted in the insights of Daniel Kahneman and Amos Tversky who posited that individuals make decisions deliberately or non-deliberatively¹⁰⁰—coined as System I and II.¹⁰¹ System II involves active decision-making, producing slower, methodical choices.¹⁰² In contrast, persons using System I follow predictable triggers to arrive at semi-conscious, “automatic,” or “hasty” decisions.¹⁰³ Ramsi

96. Reece Robertson, *Why You're Addicted to Social Media—Dopamine, Technology, and Inequality*, MEDIUM (Dec. 19, 2017), https://medium.com/@Reece_Robertson/why-youre-addicted-to-social-media-dopamine-technology-inequality-c2cca07ed3ee (emphasizing the effect on inequality).

97. Arushi Jaiswal, *Dark Patterns in UX: How Designers Should be Responsible for Their Actions*, MEDIUM (Apr. 15, 2018), <https://uxdesign.cc/dark-patterns-in-ux-design-7009a83b233c>; see generally Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U.L. REV. 630, 690–91 (1999) (reviewing “bounded rationality” and its effects on decision-making).

98. Jaiswal, *supra* note 97.

99. For a comprehensive list of examples of dark patterns, see Michael Chromik et al., *Dark Patterns of Explainability, Transparency, and User Control for Intelligent Systems*, IUI WORKSHOPS (Mar. 20, 2019), <http://ceur-ws.org/Vol-2327/IUI19WS-ExSS2019-7.pdf>; Colin M. Gray et al., *The Dark (Patterns) Side of UX Design*, RESEARCHGATE (Apr. 2018), https://www.researchgate.net/publication/322916969_The_Dark_Patterns_Side_of_UX_Design.

100. See Jonathan St. B.T. Evans, *In Two Minds: Dual-Process Accounts of Reasoning*, 7 TRENDS COGNITIVE SCIS. 454, 454 (2003) (recognizing that the idea of two distinct kinds of reasoning has “been around for as long as philosophers and psychologists have written about the nature of human thought”).

101. Daniel Kahneman, *Maps of Bounded Rationality: Psychology for Behavioral Economics*, 93 AM. ECON. REV. 1449, 1450–51 (2003); see also DANIEL KAHNEMAN, THINKING, FAST AND SLOW 20–21 (2011) (explaining the theory of System 1 and System 2 thinking); Daniel Kahneman, *A Perspective on Judgment and Choice: Mapping Bounded Rationality*, 58 AM. PSYCH. 697, 698 (2003) [hereinafter *Perspective*].

102. *Perspective*, *supra* note 101.

103. Shmuel I. Becher & Yuval Feldman, *Manipulating, Fast and Slow: The Law of Non-Verbal Market Manipulations*, 38 CARDOZO L. REV. 459, 470 (2016) (“Within this broad concept, one paradigm that has gained popular recognition through Daniel Kahneman’s book, *Thinking, Fast and Slow*, is the concept of two systems of (or dual) reasoning. To be more specific, Kahneman differentiates an automatic, intuitive, and mostly unconscious process—dubbed System 1—from a controlled and deliberative process—labeled System 2. While System 2 represents planning, calculating, thinking, and self-control, System 1 represents automatic and sometimes hasty behavior focused on present needs and desires. Recognition of the role of automaticity in decision-making has played an important part in the emergence of behavioral economics.”)

Woodcock noted that System I explains why an American would absentmindedly look the wrong way when crossing into London traffic.¹⁰⁴ Importantly, decision-making is ripe for manipulation when one is engaged in System I as defenses are down.¹⁰⁵

This type of manipulation is, as theorists suggest, a “hidden influence” or “covert subversion of another person’s decision-making power.”¹⁰⁶ According to Susser et al., online manipulation is neither persuasion, which presents a direct appeal, nor coercion, which restricts acceptable options, but an exploitation of cognitive vulnerabilities to guide one’s decisions without doing so overtly.¹⁰⁷ Problems arise when technology—rather than catering to a user’s stated or unstated preferences—causes users to engage in behaviors against their best interests. The manipulation is indeed subtle.

An example of how dark patterns exploit System 1 is privacy Zuckering, which occurs when a platform provides users with the ostensible freedom to establish one’s privacy setting but makes the interface unduly complex or veiled.¹⁰⁸ When combined with the “bad default,”¹⁰⁹ it guides users into selecting a porous privacy setting. For instance, the default on the media giant Condé Nast’s platform allows it to collect “[a]udio, electronic, visual, thermal, olfactory, or similar information, such as voice recordings, video recordings, physical characteristics or description, and photos.”¹¹⁰

Making these tactics even more effective, consider the function of “persuasion profiling.”¹¹¹ Based on one’s behavior, platforms can assess which

(footnotes omitted); see also Abbey Stemler, Joshua E. Perry & Todd Haugh, *The Code of the Platform*, 54 GA. L. REV. 605, 626 (2020).

104. Ramsi A. Woodcock, *The Obsolescence of Advertising in the Information Age*, 127 YALE L.J. 2270, 2281 (2018).

105. See Sarah C. Haan, *The “Persuasion Route” of the Law: Advertising and Legal Persuasion*, 100 COLUM. L. REV. 1281, 1282–83 (2000) (reviewing the concept of heuristics in decision-making).

106. Daniel Susser et al., *Online Manipulation: Hidden Influences in a Digital World*, 4 GEO. L. TECH. REV. 1, 3 (2019).

107. *Id.*; see generally Justin Elliott & Lucas Waldron, *Here’s How TurboTax Just Tricked You into Paying to File Your Taxes*, PROPUBLICA (Apr. 22, 2019), <https://www.propublica.org/article/turbotax-just-tricked-you-into-paying-to-file-your-taxes>.

108. Christoph Bösch et al., *Tales from the Dark Side: Privacy Dark Strategies and Privacy Dark Patterns*, 2016 PROC. ON PRIV. ENHANCING TECHS. 237, 248 (2016). To understand the potential of this and related dark patterns requires an understanding of the content of user privacy policies. These policies may give platforms more access than users ever could imagine. For example, Google collects and can distribute data on just about everything a user does. Charlie Warzel & Ash Ngu, *Google’s 4,000-Word Privacy Policy Is a Secret History of the Internet*, N.Y. TIMES (July 10, 2019), <https://www.nytimes.com/interactive/2019/07/10/opinion/google-privacy-policy.html>.

109. Bad defaults are design choices where a platform’s default privacy options are chosen “badly” in that the initial setting shares one’s personal information, forcing users to opt out of the status quo—in essence, using the path of least resistance against users (status quo bias). See Bösch et al., *supra* note 108, at 248–49.

110. *Condé Nast Privacy Policy*, CONDÉ NAST, <https://www.condenast.com/privacy-policy> (last visited Dec. 29, 2019).

111. Eli Pariser, *Welcome to the Brave New World of Persuasion Profiling*, WIRED (Apr. 26, 2011), https://www.wired.com/2011/04/st_essay_persuasion_profiling.

techniques (e.g., appeals to authority, scarcity, consensus, etc.) have proven the most effective on that user.¹¹² With these insights, a platform can “blend,” which involves placing the user’s photograph next to an image of a product or politician, making the product or politician appear more trustworthy.¹¹³ The effect is that blending and other dark patterns¹¹⁴ prey on cognitive heuristics such as confirmation bias,¹¹⁵ intent bias,¹¹⁶ anchoring,¹¹⁷ and loss avoidance¹¹⁸ to render reliably effective forms of manipulation.¹¹⁹

Recognizing the power of platforms to capture attention and elicit behaviors, the question is thus: What harms result? Perhaps the costs suffered by users are *de minimis*. Alternatively, critics contend that technological designs have levied extraordinary injuries on society. The next Part investigates the costs arising from impaired decisional privacy, especially those injuries that alter the brain’s physiology.

II. PRIVACY AND PRIVACY PROTECTION

Online manipulation threatens privacy on two fronts. First, by making platforms addictive, platforms can boost the time spent on their interfaces, thereby increasing surveillance and amounts of data collected. Second, through online manipulation, platforms can reduce one’s autonomy by invading individual decision-making—such tactics implicate decisional privacy. Part II.A

112. See Maurits Kaptein & Dean Eckles, *Heterogeneity in the Effects of Online Persuasion*, 26 J. INTERACTIVE MKTG. 176, 176 (2012).

113. Lisa Marshall Manheim, *The Nudging Ballot? A Response to Professor Foley*, 89 N.Y.U. L. REV. ONLINE 65, 68–69 (2014) (discussing a technique involving the showing of a photograph of a user with a politician to make the user more apt to trust the politician).

114. See generally Bösch et al., *supra* note 108, at 249. “Forced registration” is another dark pattern that allows platforms to slip into the personal lives of users. *Id.* With it, a platform makes users believe that they must register, typically with one of their social media accounts, in order to access a website. *Id.* For example, TripAdvisor’s interface makes it appear like users must log in with a Google+ or Facebook account but, in small text, it allows users to “Skip” the disclosure. *Id.* at 237. With this access—often achieved through a click-wrap agreement—the platforms can “leech” the user’s contacts lists and photos, including all of the metadata embedded in the photos. See *id.* at 237, 251; Zak Doffman, *Facebook Embeds “Hidden Codes” to Track Who Sees and Shares Your Photos*, FORBES (July 14, 2019), <https://www.forbes.com/sites/zakdoffman/2019/07/14/facebook-is-embedding-hidden-codes-to-track-all-your-uploaded-photos-report/#5f72181e1592> (explaining the metadata in photos which platforms can track and manipulate). Also consider the immortal account. When the interface makes a user’s account deletion options hard to access, the barrier to delete is increased (in some instances, one can easily create an account online yet must call customer support to cancel it), causing users to reconsider the decision. See generally Luguri & Strahilevitz, *supra* note 10, at 11.

115. See generally Raymond S. Nickerson, *Confirmation Bias: A Ubiquitous Phenomenon in Many Guises*, 2 REV. GEN. PSYCH. 175 (1998).

116. See Luguri & Strahilevitz, *supra* note 10, at 1.

117. “Anchoring” is where an arbitrary number is presented to tether consumers to this number; then by presenting information about a product relative to the anchor, the firm can make its good appear especially desirable. See Hanson & Kysar, *supra* note 97, at 667.

118. See generally Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263 (1979).

119. Manheim, *supra* note 113.

surveys the impact of online manipulation on various notions of privacy, Part II.B traces the consequences of online manipulation on decisional privacy, and Part II.C reviews the scarcity of privacy laws pertaining to such manipulation. Given the inability of current privacy regimes to govern online manipulation, the following discussion sets the stage for Part IV, which asserts that existing antitrust laws offer a superior remedy.

A. *Privacy and Decisional Privacy*

Privacy is an elusive concept, conceptualized as many things: “the ability to control information, the right to be let alone, . . . secrecy, intimacy, autonomy, and freedom.”¹²⁰ To simplify matters, we rely on Daniel Solove’s approach, which eschews a unified definition and instead views privacy on a spectrum of control.¹²¹ The privacy harms theorized by Solove originate from four activities: (1) the collection of personal information; (2) the dissemination of information; (3) the analysis of that information to derive insights; and (4) the use of insights to influence.¹²²

Applying Solove’s framework, first, platforms can collect a virtually unlimited amount of data through the Attention Cycle.¹²³ Second, platforms can inadvertently disseminate data via porous security or intentionally transfer data through direct and indirect sales.¹²⁴ Third, platforms can capitalize on inferences drawn from data by profiling users. Consider Uber, which has developed technology to identify when a user is intoxicated (is she holding her

120. WOODROW HERZOG, *PRIVACY’S BLUEPRINT* 10 (2018) (“[A]ll of these framings are right, and all of them are wrong.”).

121. Solove, *supra* note 16, at 489. As Bruce Schneier writes:

To the older generation, privacy is about secrecy. And, as the Supreme Court said, once something is no longer secret, it’s no longer private. But that’s not how privacy works Privacy is about control. When your health records are sold to a pharmaceutical company without your permission; when a social-networking site changes your privacy settings to make what used to be visible only to your friends visible to everyone; when the NSA eavesdrops on everyone’s e-mail conversations—your loss of control over that information is the issue. We may not mind sharing our personal lives and thoughts, but we want to control how, where and with whom. A privacy failure is a control failure.

Bruce Schneier, *Privacy and Control*, SCHNEIER ON SEC. (Apr. 6, 2010, 7:47 AM), https://www.schneier.com/blog/archives/2010/04/privacy_and_con.html; see also HELEN NISSENBAUM, *PRIVACY IN CONTEXT: TECHNOLOGY, POLICY, AND THE INTEGRITY OF SOCIAL LIFE* (2009) (arguing that privacy can be thought of as creating the space for which autonomous decisions are to be made).

122. Solove, *supra* note 16, at 490.

123. See discussion *supra* Parts I.B and I.C (explaining that through online manipulation, especially dark patterns, platforms can slyly elicit permission from users to surveil them without their specific knowledge); see also Jeff Glueck, *How to Stop the Abuse of Location Data*, N.Y. TIMES (Oct. 16, 2019), <https://www.nytimes.com/2019/10/16/opinion/foursquare-privacy-internet.html> (detailing the dangers of smartphone permissions).

124. This value is calculated based on self-reported average revenue per user (ARPU) metric. Salvador Rodriguez, *Why Facebook Generates Much More Money Per User than Its Rivals*, CNBC (Nov. 1, 2019), <https://www.cnbc.com/2019/11/01/facebook-towers-over-rivals-in-the-critical-metric-of-revenue-per-user.html>. Twitter and Snapchat’s ARPUs come in around twenty dollars and eight dollars, respectively. *Id.*

smartphone at an odd angle or walking in a staggered manner?).¹²⁵ Also, Tinder tracks interactions to calculate a “secret internal Tinder rating” for each user to match potential paramours,¹²⁶ and Airbnb has innovated algorithms to calculate a user’s “trustworthiness score”—predicting “narcissism, Machiavellianism, or psychopathy”—drawn from the surveillance of one’s social media, public records, blog posts, presence of false profiles, and other sources.¹²⁷

But the greatest harm may, fourth, derive from the privacy costs associated with *influence*, or decisional privacy. Decisional privacy erodes when manipulation invades internal thought processes,¹²⁸ reduces free will,¹²⁹ or interferes with a user’s self-interest.¹³⁰ For autonomy to be possible, users must enjoy reasonable means to select among options to achieve their goals.¹³¹ If persons are free of manipulation, they can roughly account for the reasons underlying their choices.¹³²

The Cambridge Analytica scandal of 2018 is a prime example of eroded decisional privacy. Investigations by the *New York Times*, *The Observer of London*, and *The Guardian* revealed that Facebook allowed Professor Aleksandr Kogan to access and sell the personal data of over 50 million Americans.¹³³ The data’s

125. Matt McFarland, *Uber Wants to Patent a Way to Use AI to Identify Drunk Passengers*, CNN BUS. (June 7, 2018), <https://money.cnn.com/2018/06/07/technology/uber-patent-identify-drunks/index.html>.

126. Austin Carr, *I Found Out My Secret Internal Tinder Rating and Now I Wish I Hadn’t*, FAST CO. (Jan. 11, 2016), <https://www.fastcompany.com/3054871/whats-your-tinder-score-inside-the-apps-internal-ranking-system>; Kaitlyn Tiffany, *The Tinder Algorithm, Explained*, VOX (Mar. 18, 2019, 12:08 PM), <https://www.vox.com/2019/2/7/18210998/tinder-algorithm-swiping-tips-dating-app-science>.

127. Whitney Kimball, *Airbnb’s Software Patent Rates Your Psychopathy Based on Your Social Media Activity*, GIZMODO (Jan. 7, 2020), <https://gizmodo.com/airbnbs-software-patent-rates-your-psychopathy-based-on-1840855354> (quoting from the patent application that “[a] particular personality trait can be badness, anti-social tendencies, goodness, conscientiousness, openness, extraversion, agreeableness, neuroticism, narcissism, Machiavellianism, or psychopathy. A particular behavior trait can be creating a false or misleading online profile, providing false or misleading information to the service provider, involvement with drugs or alcohol, involvement with hate websites or organizations, involvement in sex work, involvement in a crime, involvement in civil litigation, being a known fraudster or scammer, involvement in pornography, or authoring an online content with negative language.”); Thor Benson, *Can A.I. Detect “Narcissism, Machiavellianism, or Psychopathy”? AirBnB Hopes So*, INVERSE (Jan. 7, 2020), <https://www.inverse.com/article/62175-airbnb-ai-social-media-psychotic> (“AirBnB’s website says the company uses ‘predictive analytics and machine learning to instantly evaluate’ users, which makes it sound like the company is using the kind of technology that was described in this patent.”).

128. Solove, *supra* note 16, at 561.

129. Calo, *supra* note 68, at 1031.

130. *Id.* at 999, 1023 (arguing that when online manipulation is “coupled with divergent interests” between platform and consumer, a “red flag” should be raised).

131. Susser et al., *supra* note 106, at 35–37 (explaining that for autonomy to be possible, users must retain the ability to “deliberate on the different options they are faced with” and “act on the reasons they think best”).

132. *Id.*

133. Alex Hern & Carole Cadwalladr, *Revealed: Aleksandr Kogan Collected Facebook Users’ Direct Messages*, THE GUARDIAN (Apr. 16, 2018), <https://www.theguardian.com/uk-news/2018/apr/13/revealed-aleksandr-kogan-collected-facebook-users-direct-messages>; Matthew Rosenberg et al., *How Trump Consultants Exploited the Facebook Data of Millions*, N.Y. TIMES (Mar. 17, 2018), <https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html>.

purchaser, Cambridge Analytica, used it to influence political opinions while “circumvent[ing] users’ awareness of such influence.”¹³⁴ These tactics included psychological profiles meant to identify individuals who are prone to persuasion via misinformation and suggestion to take certain political actions.¹³⁵ As stated by Cambridge Analytica’s co-founder: “We exploited Facebook to harvest millions of people’s profiles [and] built models to exploit what we knew about them and target their inner demons.”¹³⁶ The FTC, implying the importance of decisional privacy, noted that remedial action was necessary given how “Facebook undermined consumers’ choices.”¹³⁷

B. *The Individual and Societal Costs of Online Manipulation*

When interfaces and platforms impair decisional privacy, the injuries can be substantial. On one level, the Attention Cycle itself can invade decisional privacy. In fact, on occasion, recognized disorders, like internet and gaming addictions, can develop, animated by traditional symptoms of dependency, such as excessive use, withdrawal, and tolerance.¹³⁸

Research on this topic has even found physiological changes of the brain. Using structural Magnetic Resonance Imaging (sMRI), heightened levels of internet usage and gaming have been shown to cause gray matter recession.¹³⁹ Gray matter of the brain’s surface controls the processing of information, such as speech, emotion, and motor control.¹⁴⁰ Tissue erosion was most pronounced—waning between 10%–20%—in users suffering from the greatest addictions.¹⁴¹ Importantly, the shrinking of gray matter in the left posterior limb is associated with impaired self-control, which strengthens digital addiction.¹⁴² Another area of atrophy was found in the frontal lobe, which governs planning

134. Marcello Ienca & Effy Vayena, *Cambridge Analytica and Online Manipulation*, SCI. AM. (Mar. 30, 2018), <https://blogs.scientificamerican.com/observations/cambridge-analytica-and-online-manipulation>.

135. *Id.*

136. Carol Cadwallar & Emma Graham-Harrison, *Revealed: 50 Million Facebook Profiles Harvested for Cambridge Analytica in Major Data Breach*, THE GUARDIAN (Mar. 17, 2018) <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election>; *see also* Susser et al., *supra* note 106, at 9.

137. Press Release, *FTC Imposes \$5 Billion Penalty and Sweeping New Privacy Restrictions on Facebook*, FED. TRADE COMM’N (July 24, 2019), <https://www.ftc.gov/news-events/press-releases/2019/07/ftc-imposes-5-billion-penalty-sweeping-new-privacy-restrictions>.

138. Sergey Tereshchenko & Edward Kasparov, *Neurobiological Risk Factors for the Development of Internet Addiction in Adolescents*, 62 BEHAV. SCI. 1, 2 (2019).

139. *Id.* at 3.

140. Dave Mosher, *High Wired: Does Addictive Internet Use Restructure the Brain*, SCI. AM. (June 17, 2011), <https://www.scientificamerican.com/article/does-addictive-internet-use-restructure-brain>.

141. *Id.*

142. Kai Yuan et al., *Amplitude of Low Frequency Fluctuation Abnormalities in Adolescents with Online Gaming Addiction*, 8 PLOS ONE 1, 4 (2013).

and organizational skills.¹⁴³ One study of WeChat users deduced that reduction of gray matter leads users to experience enhanced reward sensitivity as well as impulsivity, suggesting that digital addiction begets more addiction.¹⁴⁴

This type of dependency can even lead to alterations in the brain resembling prolonged narcotics abuse.¹⁴⁵ One study, published in 2020, found that collegiate internet gamers who forewent gaming displayed withdrawal symptoms mirroring that of cocaine users.¹⁴⁶ This creates particular concern when accounting for the rate of affected adolescents whose brains are still in the midst of developing.¹⁴⁷

Internet addiction may also alter dopamine receptors. Scholarship has found that dopamine released during online activities diminishes the availability of D2 receptors.¹⁴⁸ Lengthier addictions display greater changes.¹⁴⁹ And like with the research on gray matter, the effects of prolonged exposure mirror narcotics usage.¹⁵⁰ Specifically, “a decrease in the number and function of D2 receptors, observed both in animals and in humans . . . is functionally correlated to the enhancement in drug craving, drug intake and relapse.”¹⁵¹ Bolstering these findings, scholarship asserts that internet addiction is the *cause* of receptor damage rather than vice versa,¹⁵² as increased exposure leads to

143. Victoria Dunckley, *Gray Matters: Too Much Screen Time Damages the Brain*, PSYCH. TODAY (Feb. 27, 2014), <https://www.psychologytoday.com/us/blog/mental-wealth/201402/gray-matters-too-much-screen-time-damages-the-brain>.

144. Christian Montag et al., *Internet Communication Disorder and the Structure of the Human Brain: Initial Insights on WeChat Addiction*, NATURE 1–2 (Feb. 1, 2018), <https://www.nature.com/articles/s41598-018-19904-y.pdf>.

145. Byeongsu Park et al., *Neurobiological Findings Related to Internet Use Disorders*, 71 PSYCHIATRY & CLINICAL NEUROSCIENCES 467, 468 (2017); Alice G. Walton, *Internet Addiction Shows Up in the Brain*, FORBES (Jan. 17, 2012), <https://www.forbes.com/sites/alicegwalton/2012/01/17/internet-addiction-shows-up-in-the-brain/#62600a6b10b7>.

146. Amanda L. Giordanot et al., *Withdrawal Symptoms Among American Collegiate Internet Gamers*, 42 J. OF MENTAL HEALTH COUNSELING 63, 66, 71–72 (2020).

147. *Id.*; Tereshchenko & Kasparov, *supra* note 138, at 3 (“In adolescents, an extended prefrontal cortex development time compared to that of the limbic system results in weakened inhibition from the side of the cortical regions toward underlying subcortical structures, resulting in more prominent impulsivity, which contributes to high-risk behavior.”).

148. Daria J. Kuss & Mark D. Griffiths, *Internet and Gaming Addiction: A Systemic Literature Review of Neuroimaging Studies*, 2 BRAIN SCIS. 347, 354–55 (2012); Yunqi Zhu et al., *Molecular and Functional Imaging of Internet Addiction*, 2015 BIOMED RSCH. INT’L 1, 5 (2015).

149. Zhu et al., *supra* note 148, at 5 (“They reported that individuals with increased genetic polymorphisms in genes coding for the dopamine D2 receptor and dopamine degradation enzyme were more susceptible to excessive Internet gaming compared with age-matched controls.”).

150. *See, e.g.*, Lori Whitten, *Low Dopamine Receptor Availability May Promote Cocaine Addiction*, NAT’L INST. ON DRUG ABUSE (Apr. 1, 2009), <https://archives.drugabuse.gov/news-events/nida-notes/2009/04/low-dopamine-receptor-availability-may-promote-cocaine-addiction>; Park et al., *supra* note 145, at 473 (likening online addiction to “the injection of amphetamines or methylphenidate.”). Further, “[i]n the results of this study, the binding capacity of 11C-raclopride to dopamine receptors in the striatum decreased during video game play in comparison to baseline levels, indicating an increase in dopamine release and binding.” *Id.*

151. Anna Bracato et al., *Involvement of Dopamine D2 Receptors for Addictive-Like Behaviour for Acetaldehyde*, 9 PLOS ONE 1, 1 (2014).

152. Park et al., *supra* note 145, at 472 (“These researchers found that the bilateral DLPFC, precuneus, left parahippocampus, posterior cingulate, and right anterior cingulate were more active in response to gaming

increased damage.¹⁵³ According to research published in the last year, debate exists about this topic, yet the majority of scholarship and the DSM-5 agree that online addiction entails a form of disorder.¹⁵⁴

In important part, the physiological effects of internet addiction are also shown to cause an array of economic and social problems. One of the primary findings links the Attention Cycle to heightened anxiety. Cortisol is a hormone that regulates the body's "alarm system" (i.e., the anxiety associated with fight or flight).¹⁵⁵ When individuals separate from their devices, the body releases cortisol, generating survival reflexes and anxiety.¹⁵⁶ Other problems associated with internet addiction include social impairment,¹⁵⁷ risk-taking,¹⁵⁸ depression,¹⁵⁹ sleep deprivation,¹⁶⁰ self-injurious behaviors,¹⁶¹ impaired social capabilities,¹⁶² and, of course, altered decision-making.¹⁶³

Even though internet addiction may occur without manipulation, firms have sought to design interfaces to embellish this outcome. Consider the company *Dopamine Labs*, which designs algorithms for clients that are meant to exploit dopamine in the most effective, addictive manners.¹⁶⁴ With "just a few lines of code," their claim is that neuroscience and artificial intelligence allow

cues in the IGD group than the control group. The remission group showed lower activity in the right DLPFC and left parahippocampal gyrus than the IGD group. Thus, activity levels in these regions may be used as indicators of the current level of addiction to Internet gaming.").

153. Doug Hyun Han et al., *Changes In Cue-Induced, Prefrontal Cortex Activity with Video-Game Play*, 13 CYBERPSYCHOLOGY, BEHAV. AND SOC. NETWORKING 655, 655 (2010).

154. Qianjin Wang et al., *Research Progress and Debates on Gaming Disorder*, 32 GEN. PSYCHIATRY 1, 4 (2019).

155. See Catherine Price, *Putting Down Your Phone May Help You Live Longer*, N.Y. TIMES (Apr. 24, 2019), <https://www.nytimes.com/2019/04/24/well/mind/putting-down-your-phone-may-help-you-live-longer.html> (describing the relationship between cortisol and smartphone addiction).

156. Cooper, *supra* note 83; Phil Reed et al., *Problematic Internet Usage and Immune Function*, 10 PLOS ONE 1, 12 (2015).

157. See, e.g., Ronald Pies, *Should DSM-V Designate "Internet Addiction" a Mental Disorder?*, 6 PSYCHIATRY 31, 32, 34 (2009).

158. Tereshchenko & Kasparov, *supra* note 138, at 3.

159. Nagisa Sugaya et al., *Bio-Psychosocial Factors of Children and Adolescents with Internet Gaming Disorder: A Systematic Review*, 13 BIOPSYCHOSOCIAL MED. 1, 4 (2019); Nicholas Kardaras, *Generation Z: Online and at Risk?*, SCI. AM. (Sep. 1, 2016), <https://www.scientificamerican.com/article/generation-z-online-and-at-risk> (recounting the story of depression and anxiety arising from addictive internet usage).

160. Yi-Lung Chen & Susan Shur-Fen Gau, *Sleep Problems and Internet Addiction Among Children and Adolescents: A Longitudinal Study*, 25 J. SLEEP RSCH. 458, 464 (2015) ("The present findings showed that dyssomnias sequentially predicted internet addiction, and internet addiction sequentially predicted disturbed circadian rhythm. Young people with dyssomnias may fill the time where they struggle to sleep with internet use, but this in turn can lead to circadian rhythm disturbances, possibly through the effects of light at adverse times.").

161. *Id.*

162. *Id.*

163. Lauren E. Sherman et al., *The Power of the Like in Adolescence: Effects of Peer Influence on Neural and Behavioral Responses to Social Media*, 27 PSYCH. SCI. 1027, 1033 (2016).

164. Jonathan Shieber, *Meet the Tech Company That Wants to Make You Even More Addicted to Your Phone*, TECH CRUNCH (Sept. 8, 2017), <https://techcrunch.com/2017/09/08/meet-the-tech-company-that-wants-to-make-you-even-more-addicted-to-your-phone>.

them to “keep their users around longer and doing more. Way more. Up to 60% more.”¹⁶⁵ As Anderson Cooper questioned, “Is Silicon Valley programming apps or are they programming people?”¹⁶⁶

C. *The Lack of Regulation of Online Manipulation*

Whether the erosion of privacy stems from the collection of personal information or influence, the United States has yet to enact meaningful regulations to address the costs of online manipulation. The current system includes a patchwork of federal laws that tend to remedy the most egregious harms, including the Federal Trade Commission Act (FTC Act), the Children’s Online Privacy Protection Act (COPPA), the Consumer Financial Protection Act of 2010 (CFPA), and the Restore Online Shoppers’ Confidence Act (ROSCA). While Congress could enact new legislation, experts have expressed little hope for such a development. This discussion reviews current privacy laws to argue in the next Part that existing antitrust laws offer an attractive remedy for online manipulation.

As for the primary tool used to promote digital security, the FTC regulates unfair and deceptive trade practices under Section 5 of the FTC Act,¹⁶⁷ implicating any material “representation, omission, or practice that . . . is likely to mislead” a reasonable consumer as unlawful.¹⁶⁸ While a variety of online manipulation tactics could fall under the FTC’s purview, few cases have actually arisen.¹⁶⁹ This is partially because deception is frequently understood as an affirmative statement or material omission causing the opposite of its claim—

165. *Dopamine Labs*, BETALIST, <https://betalist.com/startups/dopamine-labs> (last visited Feb. 12, 2020).

166. Cooper, *supra* note 83.

167. 15 U.S.C. § 46(a). For a complete overview of Section 5’s application to dark patterns, see Luguri & Strahilevitz, *supra* note 10, at 29–37.

168. *Cliffdale Assoc., Inc.*, 103 F.T.C. 110, 164–66 (1984). *See also* *Fanning v. FTC*, 821 F.3d 164, 170–71 (1st Cir. 2016); Luguri & Strahilevitz, *supra* note 10, at 30 (defining “material” as information “important to consumers and, hence, likely to affect their choice of, or conduct regarding, a product” (quoting *Cliffdale Assoc., Inc.*, 103 F.T.C. at 165)).

169. A notable exception is *FTC v. AMG Cap. Mgmt.*, which involved a payday lender who used bad defaults. 910 F.3d 417, 421 (9th Cir. 2018). *See also* Luguri & Strahilevitz, *supra* note 10, at 31–32. Its website was designed with an automatic renewal option that required customers to pay additional premiums, which increased by 50% after three renewals. While the lender avoided liability under the Truth in Lending Act, because his website contained appropriate disclosure statements, the FTC and U.S. Ninth Circuit Court of Appeals found that the website’s design could reasonably deceive users. *AMG Cap. Mgmt.*, 910 F.3d at 423–24. To Jamie Luguri and Lior Jacob Strahilevitz, the website:

employed numerous dark patterns. Renewal option customers were subjected to forced continuity (a costly subscription by default) and a roach motel (avoiding the onerous default is more taxing than [sic] submitting to it). And all customers had to overcome hidden costs (the burial of the renewal option’s onerous terms in a long wall of text), preselection (making renewal the default), and trick question text (hard-to-understand descriptions of their options) in order to avoid paying substantially higher fees.

Luguri & Strahilevitz, *supra* note 10, at 31–32.

e.g., a “free trial” that comes at a cost.¹⁷⁰ Online manipulation has thus evaded the FTC Act by subtly preying on unstated expectations.

The FTC has also used its authority under Section 5 to fine platforms such as Facebook and Uber for privacy breaches; however, these breaches were by and large not directly tied to online manipulation.¹⁷¹ For example, the FTC fined Facebook \$5 billion in response to the Cambridge Analytica scandal and other deceptive practices such as “failing to protect data from third parties . . . and lying to users that its facial recognition software was turned off by default.”¹⁷²

Other pieces of legislation that could perhaps, but currently do not, govern online manipulation include 1998’s COPPA and CFPA. COPPA requires companies to obtain parental consent before collecting their child’s data.¹⁷³ This framework could remedy some manipulation by prohibiting platforms from targeting children. For example, in 2019, Google settled at \$170 million for knowingly monitoring, tracking, and serving children.¹⁷⁴ But COPPA would more likely apply when a platform tracks and influences children rather than employing dark patterns to manipulate adults. The other regime, CFPA, could in a very narrow scope of cases address forms of online manipulation, yet it never has.¹⁷⁵ The CFPA allows the Consumer Financial Protection Bureau (CFPB) to regulate “abusive conduct” in the banking and financial services sector, though not specifically in digital markets.¹⁷⁶ Also, recently the CFPB was famously gutted of its power.¹⁷⁷

It should be noted that members of Congress have expressed concern for online manipulation in two proposed bills. Senator Mark Warner drafted the

170. See *Online Marketers Barred from Deceptive “Free Trial” Offers, Unauthorized Billing*, FED. TRADE COMM’N (May 31, 2019), <https://www.ftc.gov/news-events/press-releases/2019/05/online-marketers-barred-deceptive-free-trial-offers-unauthorized>.

171. See Lee Mathews, *Uber Pays \$148 Million to Settle 2016 Data Breach Nightmare*, FORBES (Sept. 26, 2018), <https://www.forbes.com/sites/leemathews/2018/09/26/uber-pays-148-million-to-settle-2016-data-breach-nightmare/#206658a27834>; *Federal Trade Commission Gives Final Approval to Settlement with Uber*, FED. TRADE COMMISSION (Oct. 26, 2018), <https://www.ftc.gov/news-events/press-releases/2018/10/federal-trade-commission-gives-final-approval-settlement-uber>.

172. Makena Kelly, *FTC Hits Facebook with \$5 Billion Fine and New Privacy Checks*, THE VERGE (July 24, 2019), <https://www.theverge.com/2019/7/24/20707013/ftc-facebook-settlement-data-cambridge-analytica-penalty-privacy-punishment-5-billion>.

173. 15 U.S.C. § 6502(b).

174. Harper Neidig, *Google, YouTube Fined Record \$170 Million for Violating Children’s Privacy*, THE HILL (Sept. 4, 2019), <https://thehill.com/policy/technology/459854-google-youtube-fined-170-million-for-violating-childrens-privacy>; *AG James: Google and YouTube to Pay Record Figure for Illegally Tracking and Collecting Personal Information from Children*, N.Y. ST. OFF. ATTY. GEN. (Sept. 4, 2019), <https://ag.ny.gov/press-release/2019/ag-james-google-and-youtube-pay-record-figure-illegally-tracking-and-collecting> (As New York’s Attorney General Letitia James stated, “These companies put children at risk and abused their power, which is why we are imposing major reforms to their practices and making them pay one of the largest settlements for a privacy matter in U.S. history.”).

175. See Luguri & Strahilevitz, *supra* note 10, at 37–38.

176. *Id.*

177. Nicholas Confessore, *Mick Mulvaney’s Master Class in Destroying a Bureaucracy from Within*, N.Y. TIMES (Apr. 16, 2019), <https://www.nytimes.com/2019/04/16/magazine/consumer-financial-protection-bureau-trump.html>; see also MICHAEL LEWIS, *THE FIFTH RISK* 189 (2018).

DETOUR Act, which would specifically condemn dark patterns.¹⁷⁸ Warner has also proposed the Designing Accounting Safeguards to Help Broaden Oversight and Regulations on Data (DASHBOARD) Act, which would require platforms to disclose their data usage practices.¹⁷⁹ Neither bill is likely to pass. Given the roadblocks impeding legislation, as well as the silence of modern privacy laws to remedy online manipulation, the next Part argues that antitrust offers an attractive and existing remedy. It shows that digital manipulation is often derived from an abuse of market power, which increased competition would help to alleviate.

III. PRIVACY AND MANIPULATION IN MODERN ANTITRUST

The courts have yet to address whether a firm can so manipulatively design an interface so as to violate antitrust law. Digital markets make this issue difficult.¹⁸⁰ Because antitrust has long relied on prices to measure consumer welfare, critics contend that Facebook, Google, Uber, and others have largely evaded antitrust scrutiny by offering low-price services.¹⁸¹ However, this landscape has recently spawned a general agreement that antitrust should promote privacy as a benefit of competition where digital markets lack prices.¹⁸² But even in this discussion, no antitrust court or agency has formally litigated the issue of decisional privacy or even conventional privacy.¹⁸³

We argue that online manipulation coerces users into spending attention, data, and money—all things of great value in the digital economy. While decisional privacy entails an underexplored antitrust topic, the agencies have stated that digital markets pose new challenges, demanding a reassessment of what has conventionally entailed competition. Based on this invitation, we insist that antitrust's precedent of coercion provides an effective starting point to address the competitive harms posed by digital manipulation. To make this case, Part II.A reviews antitrust's limited scope, Part II.B explores its treatment of persuasion, coercion, and manipulation, and Part II.C asserts that the

178. Deceptive Experiences To Online Users Reduction Act, S. 1084, 116th Cong. (2019).

179. Data Value Transparency Bill, S1L19759, 116th Cong. (2019).

180. See, e.g., Lina M. Khan, *Amazon's Antitrust Paradox*, 126 YALE L.J. 710 (2017); David Balto & Matthew Lane, "Hipster Antitrust" Movement Is All Action, No Plan, THE HILL (Mar. 16, 2018), <https://thehill.com/opinion/judiciary/378788-hipster-antitrust-movement-is-all-action-no-plan>.

181. See *infra* notes 199–201 and accompanying text.

182. See Delrahim, *supra* note 28, at 7.

183. Newman, *supra* note 7, at 205 ("[P]rivacy law is concerned with ensuring that individuals' information remains confidential when its release or use was not bargained for as part of a voluntary exchange. Antitrust law does not concern itself with such harm." (footnote omitted)). But see James C. Cooper, *Privacy and Antitrust: Underpants Gnomes, the First Amendment, and Subjectivity*, 20 GEO. MASON L. REV. 1129, 1133–34 (2013); Geoffrey A. Manne & R. Ben Sperry, *The Problems and Perils of Bootstrapping Privacy and Data into an Antitrust Framework*, CPI ANTITRUST CHRONICLE (Competition Pol. Int'l, Boston, Mass.), May 2015, at 10.

manipulation of cognitive functions coerce wealth surpluses from users without competing on the merits.

A. Digital Markets and Antitrust

Modern antitrust lacks authority to condemn all monopolies and harms flowing therefrom. Historically, the broad language used in the Sherman Act caused confusion about the extent of antitrust's authority, which inspired scholars and courts to debate the Sherman Act's purpose. From this movement, courts sought to narrow antitrust's scope into a more predictable and rigorous body of law (though a contentious debate persists about whether they succeeded). But with this new framework, big tech is said to reside in antitrust's blind spot.¹⁸⁴

As background, the Sherman Act's scope had long flummoxed courts because its expansive text *appears* to condemn all behaviors affecting competition. Section 1 proscribes “[e]very contract, combination in the form of trust or otherwise . . . in restraint of trade or commerce,”¹⁸⁵ while Section 2 makes it illegal to “monopolize, or attempt to monopolize . . . any part of the trade or commerce”¹⁸⁶ The primary difference between Sections 1 and 2 is that a restraint of trade requires an agreement among two parties, whereas the ban of monopolies applies to singular actors.¹⁸⁷ Due to this broad language, the courts labored to determine when the elimination of rivals was the product of vigorous competition or anticompetitive behavior.¹⁸⁸ To illustrate improvident enforcement, it was common for courts to condemn companies that had accumulated market power by innovating a superior product.¹⁸⁹ This imposed liability on welfare-*enhancing* practices—the opposite of antitrust's purpose.¹⁹⁰

184. John M. Newman, *Antitrust in Digital Markets*, 72 VAND. L. REV. 1497, 1501–02 (2019) (asserting that antitrust has so far failed to account for anticompetitive conduct in digital markets).

185. 15 U.S.C. § 1.

186. 15 U.S.C. § 2.

187. *Ginzburg v. Mem'l Healthcare Sys., Inc.*, 993 F. Supp. 998, 1009 (S.D. Tex. 1997). A Section 2 violation also requires the accumulation of monopoly power or the very real chance of a monopoly arising from the strategy, whereas a Section 1 offense does not officially require market power. *Id.* That said, evidence of market power is often used in Section 1 litigation to demonstrate whether the restraint of trade impacted competition.

188. See Andrew I. Gavil, *Exclusionary Distribution Strategies by Dominant Firms: Striking a Better Balance*, 72 ANTITRUST L.J. 3, 33 (2004); Myron C. Grauer, *Recognition of the National Football League as a Single Entity Under Section 1 of the Sherman Act: Implications of the Consumer Welfare Model*, 82 MICH. L. REV. 1, 13 n.59 (1983); see also Robert H. Bork, *The Rule of Reason and the Per Se Concept: Price Fixing and Market Division*, 74 YALE L.J. 775, 815 (1965).

189. See, e.g., *Brown Shoe Co. v. United States*, 370 U.S. 294, 344 (1962) (“But we cannot fail to recognize Congress’ desire to promote competition through the protection of viable, small, locally owned businesses. Congress appreciated that occasional higher costs and prices might result from the maintenance of fragmented industries and markets.”).

190. ROBERT BORK, *THE ANTITRUST PARADOX* 72–88 (1978); see also Alan J. Meese, *Monopolization, Exclusion, and the Theory of the Firm*, 89 MINN. L. REV. 743, 773–93 (2005).

Scholars from the “Chicago School”¹⁹¹ aspired to make antitrust more rigorous. Their chief contribution was Robert Bork’s *The Antitrust Paradox*.¹⁹² It insisted that the Sherman Act’s drafters sought to promote “consumer welfare” via efficient markets, suggesting that antitrust should only remedy economic injuries.¹⁹³ The U.S. Supreme Court took the Chicago School’s bait in *GTE Sylvania*,¹⁹⁴ wherein it relied on economic theory to signal to lower courts that from now on, antitrust may only foster economic objectives rather than social and political goals.¹⁹⁵

To implement this standard today, a Section 1 or 2 violation typically requires evidence of an exclusionary act *and* anticompetitive effect.¹⁹⁶ The logic of the first requirement is that market power gained from a superior or low-priced product reflects the very goal of competition that antitrust law should promote.¹⁹⁷ Antitrust may only intervene when a firm has eliminated competition using unreasonable means, known as an exclusionary act.¹⁹⁸ This typically refers to the establishment of an artificial barrier to entry without a competitive justification.¹⁹⁹

The second element is an anticompetitive effect, which is a specific type of *economic* harm arising from exclusionary conduct suffered by consumers. Because consumers are primarily concerned about prices,²⁰⁰ antitrust has long identified an offense by whether output was restricted, thereby raising prices.²⁰¹

191. See generally Richard A. Posner, *The Chicago School of Antitrust Analysis*, 127 U. PA. L. REV. 925 (1979) (reviewing the “Chicago School” and the “Harvard School”); George L. Priest, *Bork’s Strategy and the Influence of the Chicago School on Modern Antitrust Law*, 57 J.L. & ECON. S1 (2014).

192. BORK, *supra* note 190.

193. Barak Y. Orbach, *The Antitrust Consumer Welfare Paradox*, 7 J. COMPETITION L. & ECON. 133, 133–34 (2010) (“All antitrust lawyers and economists know that the stated instrumental goal of antitrust laws is ‘consumer welfare,’ which is a defined term in economics.”).

194. *Cont’l T.V., Inc. v. GTE Sylvania, Inc.*, 433 U.S. 36, 56–58 (1977).

195. Joshua D. Wright & Douglas H. Ginsburg, *The Goals of Antitrust: Welfare Trumps Choice*, 81 FORDHAM L. REV. 2405, 2405–06 (2013) (explaining the saliency of *GTE Sylvania*); *Levine v. Cent. Fla. Med. Affiliates, Inc.*, 72 F.3d 1538, 1551 (11th Cir. 1996) (“The antitrust laws are intended to protect competition, not competitors . . .”); *Atl. Richfield Co. v. USA Petrol. Co.*, 495 U.S. 328, 342–44 (1990); see Kirkwood & Lande, *supra* note 30, at 192.

196. *United States v. Microsoft Corp.*, 253 F.3d 34, 58–59 (D.C. Cir. 2001) (“First, to be condemned as exclusionary, a monopolist’s act must have an ‘anticompetitive effect.’ That is, it must harm the competitive *process* and thereby harm consumers.”).

197. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 307–08 (3d Cir. 2007) (remarking that antitrust should not condemn a firm for “superior . . . business acumen”).

198. *Schachar v. Am. Acad. of Ophthalmology, Inc.*, 870 F.2d 397, 397 (7th Cir. 1989) (“There can be no restraint of trade without a restraint.”).

199. See, e.g., *Stearns Airport Equip. Co. v. FMC Corp.*, 170 F.3d 518, 531 (5th Cir. 1999) (“The barrier to entry that Stearns’ expert focused on was the same conduct that gave rise to exclusionary conduct claims.”).

200. See *Ginzburg v. Mem’l Healthcare Sys., Inc.*, 993 F. Supp. 998, 1026 (S.D. Tex. 1997) (“To determine the legality of a restraint under the rule of reason, the plaintiff must show that the ‘defendant’s actions amounted to a conspiracy against the market—a concerted attempt to reduce output and drive up prices or otherwise reduce consumer welfare.’” (alterations in original) (quoting *Consol. Metal Prods., Inc. v. Am. Petrol. Inst.*, 846 F.2d 284, 292–93 (5th Cir. 1988))).

201. It is noteworthy that technology has prompted courts to scrutinize conduct on more grounds than just prices and output. Most famously, the U.S. Circuit Court of Appeals for the District of Columbia imposed

While some jurists and scholars are steadfast that prices remain the *sine qua non* of an antitrust violation, a general consensus has formed that enforcement may remedy degraded innovation, quality, and consumer choice, known as non-price injuries.²⁰² Courts have nevertheless struggled to find an antitrust offense without higher prices; this is due to the difficulties of proving a causal relationship between exclusionary conduct and eroded quality, whereas plaintiffs can more easily link high prices to competition.²⁰³

It is under this framework that antitrust enforcement has struggled to govern digital markets. The first problem is that exclusionary conduct would seldom raise prices where platforms offer zero-price services.²⁰⁴ Second, users seem generally satisfied with platforms, making it difficult to prove a non-price injury.²⁰⁵ The ensuing debate has notably concerned *not* whether Facebook, Google, YouTube, Amazon, and others have accumulated market power,²⁰⁶ but whether they inflict types of injuries governed by antitrust law.²⁰⁷ This discourse has principally involved whether tech giants should incur antitrust liability for imposing privacy costs on users.²⁰⁸ Recognizing that scholarship has so far glossed over online manipulation, we present case law of scenarios where digital coercion—but not persuasion—may create an antitrust offense.

B. *Persuasion or Coercion in Digital Markets?*

This Subpart suggests that digital manipulation implicates antitrust law when a firm has, in innovating or designing a product, coerced consumers rather than merely persuaded them. Because this precedent was established prior to the digital era, the courts have yet to examine how allegations of coercion might apply to dark patterns, dopamine triggers, and other digital manipulations. As such, the following discussion explores the potential treatment of online manipulation, delving into when acts of innovation are considered persuasive (competitive) or coercive (anticompetitive).

antitrust liability on Microsoft for certain effects not based on prices of output. *Microsoft Corp.*, 253 F.3d at 65.

202. Mark A. Lemley & Christopher R. Leslie, *Categorical Analysis in Antitrust Jurisprudence*, 93 IOWA L. REV. 1207, 1264 (2008) (describing the goals of antitrust as condemning conducts that “unreasonably reduce output, raise price, or diminish competition with respect to quality, innovation, or consumer choice”).

203. Makan Delrahim, Assistant Att’y Gen., Remarks at the Fed. Soc’y. Nat’l. Law. Convention, *The Future of Antitrust: New Challenges to the Consumer Welfare Paradigm and Legislative Proposals* (Nov. 14, 2019) (“[E]nforcers must answer critics of the consumer welfare standard who wrongly assert that it is concerned only with price effects. . . . To be sure, price effects are easiest to quantify and may be an effective way to appeal to a skeptical judge or jury.”).

204. Newman, *supra* note 7, at 160 (“[There are] multiple examples of courts creating de jure antitrust immunity by declining to apply antitrust scrutiny in zero-price contexts. These courts have done so on the grounds that the antitrust laws cannot apply in the absence of prices.”).

205. Manne & Sperry, *supra* note 183, at 5–6.

206. See Newman, *supra* note 184, at 1503–04 (discussing the market concentration in digital markets).

207. Manne & Sperry, *supra* note 183, at 5–6.

208. See generally Day & Stemler, *supra* note 33.

1. Persuasion

As of now, courts would not likely condemn online manipulation if consumers were merely persuaded—even if the conduct was false or misleading. This is because efforts to persuade are considered forms of competition rather than anticompetitive acts. In fact, when persuasion increases demand, the result can be *procompetitive*.

Generations ago, however, enforcers condemned acts of persuasion.²⁰⁹ The theory was that consumers should refuse to pay a premium for goods when cheaper versions were available.²¹⁰ If advertising caused consumers to prefer an identical item *and pay more for it*, then welfare eroded—after all, the firm had used persuasion to “steal” the wealth of consumers rather than competing on the merits.²¹¹ Illustrating this approach, in 1967, the U.S. Supreme Court acknowledged that Proctor & Gamble’s advertising had “imprint[ed]” Clorox on the minds of consumers.²¹² Proctor & Gamble was thus able to generate market power upon peddling a “chemically indistinguishable” yet more expensive product.²¹³

Antitrust’s treatment of persuasion reversed in 1976 when the U.S. Supreme Court declared that commercial speech implicates the First Amendment.²¹⁴ The Court’s initial justification was that advertising provides information that consumers and markets require.²¹⁵ This doctrine has since expanded to encompass persuasion, as an array of courts have held that puffery and other motifs meant to tempt consumers are forms of expression protected

209. See generally Woodcock, *supra* note 104, at 2278 (discussing the history of persuasive advertising in competition and antitrust contexts).

210. See Carole A. Casey, Note, *The Rule of Reason Analysis of Dual Distribution Systems: Does It Further the Purposes of the Sherman Act?*, 29 B.C. L. REV. 431, 447–48 (1988) (“Although all household bleaches are chemically identical, consumers will pay more for Clorox-brand bleach because of its successful advertising. . . . Manufacturers should be encouraged to increase their market share based upon the superior quality of their products rather than through restricted intrabrand competition and increased promotional activity which serves ultimately only to increase market concentration and raise prices.” (footnote omitted)).

211. See *id.* at 447–48 (explaining the potential harm to markets and consumers caused by persuasive advertising).

212. *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 572 (1967).

213. *Id.* (“In 1957 Clorox spent almost \$3,700,000 on advertising, imprinting the value of its bleach in the mind of the consumer. . . . [T]hese heavy expenditures went far to explain why Clorox maintained so high a market share despite the fact that its brand, though chemically indistinguishable from rival brands, retailed for a price equal to or, in many instances, higher than its competitors.”).

214. *Va. State Bd. of Pharmacy v. Va. Citizens Consumer Council, Inc.*, 425 U.S. 748, 762 (1976); see also Woodcock, *supra* note 104, at 2328–29 (describing the law’s shifting view of advertising given the rise of the commercial speech doctrine).

215. *Va. State Bd. of Pharmacy*, 425 U.S. at 765; see also *Cent. Hudson Gas Elec. v. Pub. Serv. Comm’n.*, 447 U.S. 557, 561–62 (1980) (ruling that commercial speech “not only serves the economic interest of the speaker, but also assists consumers and furthers the societal interest in the fullest possible dissemination of information”).

by the First Amendment.²¹⁶ According to Justice Souter, “[P]ersuasion is an essential ingredient of the competition that our public law promotes”²¹⁷ The Supreme Court has more recently embraced the persuasive aspects of commercial speech *found in data*, remarking that the government may not restrict “impressive endorsements or catchy jingles” even if “the State finds expression too persuasive.”²¹⁸ This transitioned judicial thinking into refusing to characterize persuasion as anticompetitive.

Perhaps justifying this approach, injuries caused by persuasion are presumed to be minimal.²¹⁹ According to economic theory, consumers digest information rationally, which generally leads to competent decision-making.²²⁰ So long as consumers receive enough information, persuasion should only render *de minimis* harm.²²¹ Nearly all courts weighing this issue have indeed noted persuasion’s benign effects.²²² The antitrust agencies have likewise favored consumer autonomy over paternalism.²²³

Further, courts have ruled that persuasion, *even when false or misleading*, may reflect the spirit of competition.²²⁴ One court refused to condemn a press release that fooled consumers, reasoning that because victims were able to “mak[e] free choices between market alternatives” . . . it [was] clear that the

216. *Curtis v. Thompson*, 840 F.2d 1291, 1297 (7th Cir. 1988) (addressing whether the “statute violates [a real estate agent’s] First Amendment right to contact homeowners for the purpose of persuading them to sell or list their homes” (emphasis added)).

217. *Glickman v. Wileman Bros. & Elliott, Inc.*, 521 U.S. 457, 480 (1997) (Souter, J., dissenting).

218. *Sorrell v. IMS Health Inc.*, 564 U.S. 552, 578 (2011); *Retail Digit. Network, LLC v. Appelsmith*, 810 F.3d 638, 649 (9th Cir. 2016) (asserting that firms may persuade under the First Amendment, citing *Sorrell*, so long as “the audience of commercial speech consists of adult consumers in possession of their faculties”).

219. *Am. Council of Certified Podiatric Physicians and Surgeons v. Am. Bd. of Podiatric Surgery, Inc.*, 323 F.3d 366, 370 (6th Cir. 2003) (remarking that an antitrust lawsuit premised on persuasion “must overcome a presumption that such advertising or speech had a *de minimis* effect on competition”).

220. Jennifer Arlen, Comment, *The Future of Behavioral Economic Analysis of Law*, 51 VAND. L. REV. 1765, 1766 (1998) (“Conventional law and economics assumes that people exhibit rational choice: that people are self-interested utility maximizers with stable preferences and the capacity to optimally accumulate and assess information. Law and economics scholars do not claim that this rational choice model perfectly captures all human behavior. But they do claim that deviations from rational choice generally are not systematic, and thus generally will cancel each other out.” (footnote omitted)).

221. See Neil D. Van Dalsen, Note, *Service (Now) Sold Separately: The Supreme Court Expands the Per Se Prohibition of Tying Arrangements in Eastman Kodak Co. v. Image Technical Services*, 28 TULSA L.J. 817, 821 n.19 (1993) (“Economists have long recognized that imperfect information is one basic type of market failure.”).

222. *Am. Prof’l Testing Serv., Inc. v. Harcourt Brace Jovanovich, Inc.*, 108 F.3d 1147, 1152 (9th Cir. 1997); *Genus Lifesciences Inc. v. Lannett Co.*, 378 F. Supp. 3d 823, 841 (N.D. Cal. 2019), *reconsideration denied*, 2019 WL 4168958 (N.D. Cal. Sept. 3, 2019); *Novation Ventures, LLC v. J.G. Wentworth Co.*, 156 F. Supp. 3d 1094, 1104 (C.D. Cal. 2015) (“Yet Plaintiff does not respond to Defendants’ argument that in order for false advertising (as Plaintiff alleges) to constitute exclusionary conduct, it must ‘overcome a presumption that the effect on competition . . . was *de minimis*.’” (footnote omitted) (quoting *Am. Prof’l Testing Serv., Inc.*, 108 F.3d at 1152)); *Reed Constr. Data, Inc. v. McGraw-Hill Cos.*, 49 F. Supp. 3d 385, 419 (S.D.N.Y. 2014), *aff’d*, 638 F. App’x 43 (2d Cir. 2016).

223. See Stephanie Plamondon Bair, *Malleable Rationality*, 79 OHIO ST. L.J. 17, 52 (2018) (explaining the FTC’s desire to preserve autonomy in consumer decision-making).

224. *Sanderson v. Culligan Int’l Co.*, 415 F.3d 620, 623 (7th Cir. 2015); *Duty Free Ams., Inc. v. Estee Lauder Cos.*, 797 F.3d 1248, 1268 (11th Cir. 2015).

press release at issue here did not prevent any consumer from freely choosing between DuPont and MacDermid processors.”²²⁵ Further, the *Mercatus* court noted that victims of false statements can benefit from exposing their rival’s lies, suggesting that duplicity is best remedied by the free market rather than antitrust litigation.²²⁶ As the U.S. Seventh Circuit Court of Appeals stated, “If such statements should be false or misleading or incomplete or just plain mistaken, the remedy is not antitrust litigation but more speech—the marketplace of ideas.”²²⁷

When persuasion increases a good’s output (by causing consumers to purchase more of it), the result can be called procompetitive.²²⁸ A myriad of courts and scholars have insisted that conduct must lower output to violate antitrust law given the difficulties of forcing retailers to charge high prices without limiting supply.²²⁹ And because the elevation of prices could stem from innovation or improved quality—perfectly acceptable acts—an offense’s hallmark is ostensibly restricted output.²³⁰ The leading treatise not only asserts that output is “a sound general measure of anticompetitive effect”²³¹ but also that “[a]n increase in output is pro-competitive.”²³² Some courts and scholars have concurred.²³³ By implication, acts of persuasion may foster consumer welfare by increasing output, thereby lowering prices.²³⁴ As Judge Easterbrook

225. *MacDermid Printing Sols., LLC v. Cortron Corp.*, 833 F.3d 172, 186 (2d Cir. 2016) (quoting *Associated Gen. Contractors of Cal., Inc. v. Cal. State Council of Carpenters*, 459 U.S. 519, 528 (1983)).

226. *Mercatus Grp., LLC v. Lake Forest Hosp.*, 641 F.3d 834, 852 (7th Cir. 2011).

227. *Schachar v. Am. Acad. of Ophthalmology, Inc.*, 870 F.2d 397, 400 (7th Cir. 1989). *But see* U.S. Futures Exch., LLC v. Bd. of Trade of Chi., Inc., 346 F. Supp. 3d 1230, 1265 (N.D. Ill. 2018); *Nexstar Broad., Inc. v. Granite Broad. Corp.*, No. 1:11-CV-249 RM, 2012 WL 2838547, at *7 (N.D. Ind. July 9, 2012); Maurice E. Stucke, *When a Monopolist Deceives*, 76 ANTITRUST L.J. 823, 828 (2010) (“Some U.S. courts recognize deceptive advertising and disparagement of a competitor’s product as generally indefensible, and readily condemn a monopolist’s anticompetitive deceit. . . . But the courts in the Second, Sixth, and Ninth Circuits, following the *Treatise*, are reluctant to use the Sherman Act to punish such deception.”).

228. Herbert Hovenkamp, *The Rule of Reason*, 70 FLA. L. REV. 81, 118 (2018).

229. PHILLIP E. AREEDA ET AL., ¶ 1503 at 375; Maurice E. Stucke, *Money, Is That What I Want?: Competition Policy and the Role of Behavioral Economics*, 50 SANTA CLARA L. REV. 893, 941 (2010) (“Antitrust’s central task, for the Chicago School, ‘is to identify and prohibit those forms of behavior whose net effect is output restricting and hence detrimental.’” (quoting BORK, *supra* note 190, at 122)); *see* John M. Newman, *Procompetitive Justifications in Antitrust Law*, 94 IND. L.J. 501, 516 (2019) (“An extreme version of the type-of-effect approach focuses exclusively on output effects. This simplistic approach seeks to cabin all of antitrust analysis to a mere output inquiry. If a challenged restraint decreases output, it is always unreasonable. If it increases output, it is always reasonable.”); Lao, *supra* note 20, at 38–39 (stating the theory that “the Sherman Act should punish only practices that restrict output, as only output restrictions are inefficient under price theory” (footnote omitted)).

230. Alan J. Meese, *Assorted Anti-Leegin Canards: Why Resistance is Misguided and Futile*, 40 FLA. ST. U. L. REV. 907, 954 (2013).

231. PHILLIP E. AREEDA ET AL., ¶ 1503 at 375.

232. *Id.*

233. John E. Lopatka, *Antitrust and Professional Rules: A Framework for Analysis*, 28 SAN DIEGO L. REV. 301, 343 (1991) (“Any action that increases the demand for a service can be viewed as *increasing the quality of the service*.” (emphasis added)).

234. *Law v. Nat’l Collegiate Athletic Ass’n*, 134 F.3d 1010, 1023 (10th Cir. 1998); *N. Am. Soccer League, LLC v. U.S. Soccer Fed’n, Inc.*, 296 F. Supp. 3d 442, 474 (E.D.N.Y. 2017), *aff’d*, 883 F.3d 32 (2d Cir.

declared, “[Antitrust] condemns reductions in output that drive up prices,” yet persuasion cannot offend antitrust law because it “affect[s] only the demand side of the market.”²³⁵

It thus seems unlikely that online manipulation would violate antitrust law if it reflects an act of persuasion.²³⁶ And if manipulation increases attention or patronage, courts have characterized this result as procompetitive. Antitrust courts have, however, condemned coercion. The question is: When does conduct cross the line into anticompetitive coercion?

2. *Coercion*

What could rise to the level of coercion under the Sherman Act? The key is whether the monopolist has, in innovating a good, deprived consumers of a choice between competing products. This happens most often in cases of: (1) anticompetitive innovation; and (2) “product hops” of pharmaceuticals.

Anticompetitive Innovation. The innovation or (re)design of a product to exclude competition can result in antitrust liability. A company may redesign a product to no longer support complementary parts made by rivals (such as toner to a printer), thereby monopolizing the complementary market. However, most courts are quick to remark that enforcement should cautiously review acts of innovation for several reasons: (1) public policy encourages innovation, which antitrust could chill;²³⁷ (2) courts are ill-equipped to judge the merits of innovation;²³⁸ and (3) companies have no duty to innovate or design in ways aiding their competitors.²³⁹ To qualify as coercion and thus violate antitrust law,

2018); *Procaps S.A. v. Patheon Inc.*, 141 F. Supp. 3d 1246, 1287 (S.D. Fla. 2015) (“Procompetitive benefits include effects like increased output, reduced costs, and other operating efficiencies.”), *aff’d*, 845 F.3d 1072 (11th Cir. 2016); *see also* Meese, *supra* note 230, at 954 (“In the same way, a firm that enters a contract with an expensive advertising firm to develop a new marketing campaign will, if successful, enhance demand and thus price for the firm’s (now more expensive) product. While both of these practices (if successful) raise prices, neither necessarily results in prices *above cost*. Jaguar did not violate the Sherman Act when it retained Sterling, Cooper, Draper Price.”).

235. *Schachar v. Am. Acad. of Ophthalmology, Inc.*, 870 F.2d 397, 399–400 (7th Cir. 1989).

236. *Retractable Techs., Inc. v. Becton Dickinson & Co.*, 842 F.3d 883, 894 (5th Cir. 2016) (“The Seventh Circuit’s basic reasoning adheres to traditional free speech principles: ‘If [a competitor’s statements about another] should be false or misleading or incomplete or just plain mistaken, the remedy is not antitrust litigation but more speech—the marketplace of ideas.’” (quoting *Schachar*, 870 F.2d at 400) (alterations in original)).

237. *See, e.g.*, *United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) (“As a general rule, courts are properly very skeptical about claims that competition has been harmed by a dominant firm’s product design changes.”).

238. Alan Devlin & Michael Jacobs, *Anticompetitive Innovation and the Quality of Invention*, 27 BERKELEY TECH. L.J. 1, 7 (2012).

239. *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 544–45 (9th Cir. 1983) (“A monopolist, no less than any other competitor, is permitted and indeed encouraged to compete aggressively on the merits, and any success it may achieve solely through ‘the process of invention and innovation’ is necessarily tolerated by the antitrust laws.” (quoting *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 281 (2d Cir. 1979)).

courts tend to ask several questions: whether the innovator “preserved” the free will of consumers; whether the innovation improved prior technology; or whether it was solely meant to exclude competition.²⁴⁰

In the watershed case, *Berkey Photo v. Kodak Eastman*, the court failed to find an antitrust offense, noting a lack of coercion.²⁴¹ At issue was that Kodak innovated a new camera that was incompatible with a competitor’s film.²⁴² The court remarked that antitrust law permits Kodak to not only innovate but also persuade consumers into purchasing the product with aggressive advertising.²⁴³ Kodak would only deserve liability if its innovation had sought to exclude competition, yet Kodak left older cameras on the market—in essence, Kodak “did not coerce camera purchasers.”²⁴⁴ The case is nevertheless noteworthy because it outlined how future plaintiffs could possibly show that innovation rises to the level of anticompetitive.

More recently, the dispute in *In re Keurig Green Mountain Single-Serve Coffee Antitrust Litigation* involved the legality of “Project Squid” where Keurig redesigned its signature coffee maker (which makes coffee out of single-serving cups called “K-Cups”) to reject rival K-Cups.²⁴⁵ According to the court, liability is warranted “when a monopolist *combines* product withdrawal with some other conduct, the overall effect of which is to *coerce consumers rather than persuade them on the merits.*”²⁴⁶ Evidence suggested that Keurig’s intention was to “lock-out” rivals, coercing consumers into purchasing Keurig’s products in violation of Section 2.²⁴⁷

Other courts have relied on similar rationales to reach the same conclusion. The court in *Caldera, Inc. v. Microsoft Corp.*²⁴⁸ found that Microsoft Corporation had designed its operating system to make it unsuitable for rival products—as one email by a Microsoft executive stated about incompatibility issues, “You should make sure it has problems in the future. :-).”²⁴⁹ In fact, Microsoft’s liability in *Caldera* was similar to its fate in *United States v. Microsoft*, where the

240. *See Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 1002–03 (9th Cir. 2010) (scrutinizing whether the product design preserved free will or “coerced” consumers).

241. *Berkey Photo*, 603 F.2d at 287–88.

242. *Id.* at 277–78.

243. *Id.* at 287–88 (“Of course, Kodak’s advertising encouraged the public to take a favorable view of both Kodacolor II and the 110 camera, but that was not improper. A monopolist is not forbidden to publicize its product unless the extent of this activity is so unwarranted by competitive exigencies as to constitute an entry barrier. And in its advertising, a producer is ordinarily permitted, much like an advocate at law, to bathe his cause in the best light possible.” (citation omitted)).

244. *Id.* at 287.

245. 383 F. Supp. 3d 187, 215 (S.D.N.Y. 2019).

246. *Id.* at 230 (emphasis added).

247. *Id.* at 231 (“At this stage, Plaintiffs’ allegations that the 2.0 Brewer and its innovations were not intended to benefit consumers, but rather were intended to harm competition in the Compatible Cup Market, support their Section 2 monopolization claims.”).

248. 72 F. Supp. 2d 1295 (D. Utah 1999).

249. *Id.* at 1313.

circuit court ruled that Microsoft’s interface had “overridden” the preferences of consumers in forcing them to use Internet Explorer.²⁵⁰ This theory of liability may also apply to product hopping cases in the pharmaceutical industry.

Product Hopping and Hard Switches. Consider the patent dispute in *New York ex rel. Schneiderman v. Actavis PLC*.²⁵¹ As background, the Hatch-Waxman Act²⁵² allows a pharmaceutical company to start the process of developing a generic drug while a brand name company owns and enforces its patent.²⁵³ Without the Hatch-Waxman Act, the process of approving a drug would delay a generic from reaching the market until years after the brand name’s patent expired. The quirk is that generic-makers can only embark on the process if the brand drug is currently on the market.²⁵⁴ Knowing this, Actavis pulled Namenda IR right before the drug’s patent expired and replaced it with a virtually identical version, Namenda XR (the product hop and hard switch).²⁵⁵ By doing so, Actavis forced generic-makers to restart or abandon the Hatch-Waxman process, enabling Actavis to extend its monopoly beyond the lifespan of Namenda’s patent.²⁵⁶ Generic-makers asserted that the hard switch was anticompetitive.²⁵⁷

The issue was whether Actavis “crosse[d] the line from persuasion to coercion and [was] anticompetitive.”²⁵⁸ Because Actavis could have introduced the drug while leaving the old one on the market, Actavis had “forced” patients and doctors to switch.²⁵⁹ Relying on *Berkey Photo*, the court remarked that persuasion is distinguishable from coercion when “the free choice of consumers is preserved.”²⁶⁰ The hard switch was illegal because it “sought to deprive consumers of that choice.”²⁶¹ Other courts have employed the same logic: with *In re Asacol Antitrust Litigation*, the court remarked that drug

250. *United States v. Microsoft Corp.*, 253 F.3d 34, 65 (D.C. Cir. 2001) (“Microsoft designed Windows 98 ‘so that using Navigator on Windows 98 would have unpleasant consequences for users’ by, in some circumstances, overriding the user’s choice of a browser other than IE as his or her default browser. Plaintiffs argue that this override harms the competitive process by deterring consumers from using a browser other than IE even though they might prefer to do so Because the override reduces rivals’ usage share and protects Microsoft’s monopoly, it too is anticompetitive.” (citations omitted)).

251. *New York ex rel. Schneiderman v. Actavis PLC*, 787 F.3d 638, 642–43 (2d Cir. 2015).

252. Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98-417, 98 Stat. 1585 (codified as amended in scattered sections of 35 U.S.C.).

253. *Warner-Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1358 (Fed. Cir. 2003) (quoting H.R. REP. NO. 98-857(I), at 14–15 (1984), as reprinted in 1984 U.S.C.C.A.N. 2647, 2647–48) (explaining the Hatch-Waxman process).

254. See Gregory Day, *Innovative Antitrust and the Patent System*, 96 NEB. L. REV. 829, 854–55 (2018) (explaining how generics can enter the approval process during a patent’s tenure).

255. *Actavis*, 787 F.3d at 642–43.

256. *Id.* at 657–58.

257. *Id.* at 643.

258. *Id.* at 654.

259. *Id.* at 648.

260. *Id.* at 654–55 (quoting *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 287 (2d Cir. 1979)).

261. *Id.* at 655.

companies enjoy free range to innovate and persuade consumers so long as they enhance choice rather than use coercion to eliminate it.²⁶²

By implication, case law indicates that antitrust may condemn manipulation designed into an interface or platform as coercion. As argued in the next Subpart, dark patterns have undermined the premise of rationality on which antitrust law has long relied. Dark patterns coerce users into spending attention, generating data, and paying money without doing so on the merits. The consequences of online manipulation are thus akin to supracompetitive prices and other classically anticompetitive effects.

C. *Anticompetitive Online Manipulation*

Antitrust offers an attractive remedy to digital manipulation. Recall at the onset that consumer protection laws are currently ill-equipped to achieve this end. However, the Sherman Act is intended to protect valid competition from cartels and monopolists who would otherwise “steal” consumer wealth.²⁶³ With this in mind, we assert that digital manipulation enables tech giants to extract attention, data, or money from users. Supporting antitrust enforcement in this area, the Sherman Act has already condemned coercion in types of innovation and product designs. And because the agencies insist that digital markets require a reinterpretation of precedent, we assert that condemning digital manipulation would entail a logical extension of the antitrust enterprise.

The following discussion shows that tech firms use manipulative strategies to: (1) exclude competition in digital markets; and then (2) based on their market power, extract resources akin to restricting output in product markets. Importantly, enhanced competition would alleviate the magnitude and prevalence of this market failure.

1. *Exclusionary Conduct*

Tech giants have reportedly used exclusionary means to impair competition, though they have largely skirted antitrust review based on their low prices—until recently, at least.²⁶⁴ To illustrate suspect conduct in digital

262. *In re Asacol Antitrust Litig.*, 233 F. Supp. 3d 247, 269 (D. Mass. 2017) (“Defendants preserved the freedom of consumer choice because both products remained on the market . . . [T]he alleged marketing conduct did not coerce customers”); *see also* *Abbott Labs. v. Teva Pharms. USA, Inc.*, 432 F. Supp. 2d 408, 421 (D. Del. 2006) (“If consumers are free to choose among products, then the success of a new product in the marketplace reflects consumer choice, and ‘antitrust should not intervene when an invention pleases customers.’” (quoting PHILLIP E. AREEDA ET AL., *ANTITRUST LAW* ¶ 776d (Aspen L. & Bus. eds., 3d ed. 2007))).

263. *See* Robert H. Lande, *A Traditional and Textualist Analysis of the Goals of Antitrust: Efficiency, Preventing Theft from Consumers, and Consumer Choice*, 81 *FORDHAM L. REV.* 2349, 2351 (2013).

264. The agencies and Congress have recently opened investigations into platforms, partially fueled by their heretofore lack of scrutiny. Lina M. Khan, *Sources of Tech Platform Power*, 2 *GEO. L. TECH. REV.* 325, 328, 332 (2018).

markets, tech firms may leverage their power in one market to dominate another.²⁶⁵ Critics contend that Amazon copies products sold on its platform and then buries listings of the copied rival products, using its power in the platform market to monopolize product markets.²⁶⁶ Likewise, Google abuses its position in the search market to dominate online advertising.²⁶⁷

Along this line, we assert that digital manipulation should entail a form of exclusionary behavior. Because one's attention is finite, digital manipulation can erect barriers to entry where consumers compulsively use a platform to the exclusion of upstarts; this can hook users onto the platform even though superior interfaces exist. Another way of viewing digital manipulation is that it raises the switching costs of using rival technology. Consider *United States v. Microsoft*, where Microsoft prevented consumers from deinstalling Internet Explorer.²⁶⁸ The design was anticompetitive—albeit no rivals were foreclosed—because it raised the costs of competing against Microsoft while providing users with a qualitatively worse product.²⁶⁹ Digital manipulation should likewise draw antitrust scrutiny when the design is meant to generate switching costs without an offsetting benefit to users. While not all dopamine triggers and dark patterns are harmful, the key is whether the design was meant to enhance addiction and manipulate usage while providing consumers with a qualitatively worse product.

Also, the DOJ has recently expressed concern that tech firms collect and analyze such volumes of data to exclude competition.²⁷⁰ Because data provides critical insights into consumer behavior, enforcers have suggested that a firm's data advantage could create an anticompetitive barrier to entry.²⁷¹ The theory is that rivals cannot hope to compete in markets when a dominant firm can more efficiently target and cater to users.²⁷² Exploitation of data becomes anticompetitive, to the DOJ, when a firm terminates a profitable data-sharing relationship to impede its partner.²⁷³

Similarly, tying occurs when a company bundles two services together. Amazon allegedly ties platform access to its advertising service.²⁷⁴ The CEO of

265. *Id.* at 328–29.

266. Daisuke Wakabayashi, *Prime Leverage: How Amazon Wields Power in the Technology World*, N.Y. TIMES (Dec. 16, 2019), <https://www.nytimes.com/2019/12/15/technology/amazon-aws-cloud-competition.html>; see also *supra* notes 52–54 and accompanying text.

267. James Vincent, *Google Hit with €1.5 Billion Antitrust Fine by EU*, THE VERGE (Mar. 20, 2019), <https://www.theverge.com/2019/3/20/18270891/google-eu-antitrust-fine-adsense-advertising>.

268. *United States v. Microsoft Corp.*, 253 F.3d 34, 65–66 (D.C. Cir. 2001).

269. *Id.* at 65.

270. Delrahim, *supra* note 28, at 5.

271. *Id.*

272. See Maurice E. Stucke, *Should We Be Concerned About Data-Opolies?*, 2 GEO. L. TECH. REV. 275, 275–78 (2018) (discussing how data may impede competition).

273. Delrahim, *supra* note 28, at 7.

274. See *Online Platforms and Market Power, Part 5: Competitors in the Digital Economy: Hearing Before the Subcomm. on Antitrust, Com., and Admin. Law*, 116th Cong. 2–3 (2020) (statement of David Barnett, CEO &

PopSockets claimed that Amazon would only prevent counterfeits from usurping sales of PopGrips (made by PopSockets) when PopSockets agreed to purchase \$2 million of advertising from Amazon.²⁷⁵ Note the importance of market power; in a more competitive market, Amazon would have probably lacked the leverage to demand that large of an advertising fee.

The current debate, though, has concerned less whether tech giants dominate their markets but if anticompetitive effects result from the exclusionary conduct. Recall that so long as prices remain low, scores of courts and scholars would refuse to impose liability.²⁷⁶ We claim that tech firms have excluded competition in ways that generate recognized anticompetitive effects regarding price and non-price injuries.

2. *Anticompetitive Effects*

Antitrust should condemn the digital coercion of consumers by a monopolist. This makes sense on two fronts; dark patterns harm consumers: (1) in the classical sense by extracting wealth from users; and (2) by subtly manipulating consumers in a manner impairing the market's quality.

First, antitrust condemns supracompetitive prices flowing from exclusionary conduct.²⁷⁷ When tech firms operate in concentrated markets, they may exploit the void in competition by designing dark patterns to extract money or attention from users. For instance, a bad default and cumbersome disenrollment process can lead consumers to pay for unwanted services. To illustrate, ProPublica reported that TurboTax is designed to navigate users away from its free program to the interface's commercial services via an array of dark patterns.²⁷⁸ This has allegedly caused an unknown number of individuals to pay around \$119.99 for services that they would have otherwise had the legal right

Founder, PopSockets LLC) (“Indeed, on multiple occasions we found that Amazon Retail was itself sourcing counterfeit PopGrips and selling them alongside our authentic products. During this period, Amazon’s Brand Registry department seemed to be working with us in earnest, though with limited success, to address the problem of fakes. It was not until December of 2017, in exchange for our commitment to spend nearly two million dollars on retail marketing programs (which our team expected to be ineffective and would otherwise not have pledged), that Amazon Retail agreed to work with Brand Registry to require sellers of alleged PopGrips to provide evidence, in the form of an invoice, of authenticity. As a result, in early 2018, our problem of counterfeits largely dissolved.”).

275. *Id.*

276. *See* Lao, *supra* note 20 and accompanying text; *see also* Newman, *supra* note 21 and accompanying text.

277. *Sanderson v. Culligan Int’l Co.*, 415 F.3d 620, 623 (7th Cir. 2005) (“Antitrust law condemns practices that drive up prices by curtailing output.”).

278. Justin Elliott & Paul Kiel, *Inside TurboTax’s 20-Year Fight to Stop Americans From Filing Their Taxes for Free*, PROPUBLICA (Oct. 17, 2019), <https://www.propublica.org/article/inside-turbotax-20-year-fight-to-stop-americans-from-filing-their-taxes-for-free>.

to use for free.²⁷⁹ Although courts have traditionally measured price injuries in dollar amounts, scholarship has shown that attention is akin to money in digital markets.²⁸⁰ In this sense, the application of dark patterns to extract attention or money should reflect an anticompetitive effect when arising from exclusionary behavior.²⁸¹

Second, antitrust may condemn non-price injuries such as degraded quality or consumer choice. While debate involves whether privacy entails a non-price injury, today, even skeptics acknowledge that privacy should, at times, reflect quality.²⁸² To us, concentrated markets in which firms design interfaces to addict, subtly influence, or manipulate users are qualitatively inferior than those preserving free will. When a monopolist preys on cognitive vulnerabilities, welfare erodes where, as explained in *Tucker v. Apple*, it “force[s] a purchaser to do something that he would not do in a competitive market.”²⁸³ The harm is that users engage in behaviors against their self-interests, resulting in artificially high revenue for the monopolist, whether it be money, data, or attention. Given the myriads of social ills flowing from internet addiction, the manner that market power enables digital manipulation to impose both price and non-price injuries should be condemned.

Consider again the seminal case of *United States v. Microsoft*, where Microsoft’s product design caused non-price injuries.²⁸⁴ There, the court found it significant that Microsoft had baked Internet Explorer into Windows, not due to demand, but to manipulate consumers.²⁸⁵ While “[i]n a competitive market, firms routinely innovate in the hope of *appealing* to consumers,” Microsoft had sought “unpleasant consequences.”²⁸⁶ By excluding competition and coercing users via its product design, the court described Microsoft’s conduct as anticompetitive.²⁸⁷ Similar conclusions were reached in *Tucker* and *United States v. Apple*, where Apple and book publishers manipulated how consumers *thought* about e-book prices.²⁸⁸

Importantly, enhanced competition would promote decisional privacy. Not only would greater levels of competition enable users to punish platforms for

279. Justin Elliott & Lucas Waldron, *Here’s How TurboTax Just Tricked You into Paying to File Your Taxes*, PROPUBLICA (Apr. 22, 2019), <https://www.propublica.org/article/turbotax-just-tricked-you-into-paying-to-file-your-taxes>.

280. Newman, *supra* note 7, at 152 (explaining the value of attention).

281. *See* Newman, *supra* note 44, at 747 (describing attention as a scarce resource).

282. *See* Delrahim, *supra* note 28, at 7 (entering the debate about privacy in antitrust enforcement).

283. *Tucker v. Apple Comput., Inc.*, 493 F. Supp. 2d 1090, 1097 (N.D. Cal. 2006) (quoting *Murphy v. Bus. Cards Tomorrow, Inc.*, 854 F.2d 1202, 1204 (9th Cir. 1988)).

284. *United States v. Microsoft Corp.*, 253 F.3d 34, 47 (D.C. Cir. 2001).

285. *Id.* at 65.

286. *Id.* (emphasis added).

287. *Id.* (referring to the conduct as “something other than competition on the merits”).

288. *United States v. Apple Inc.*, 952 F. Supp. 2d 638, 657, 691 (S.D.N.Y. 2013) (“Apple opined that \$9.99 was not yet ‘engrained’ in the consumer mind, and suggested in each meeting pricing e-books at between \$11.99 and \$14.99. The Publishers were thrilled.”).

employing dark patterns, but it would also spread information about the prevalence and dangers of dark patterns, building awareness, and demand for decisional privacy.

First, a monopolist enjoys greater ability to employ dark patterns than firms engaged in vigorous competition. A user who wishes to abandon YouTube lacks alternatives because the other option, Google Video, owns YouTube. However, in a competitive market, consumers may abandon firms inflicting unreasonable privacy costs for more efficient rivals—an expectation expressed by leadership in the FTC and DOJ.²⁸⁹ If the market lacks suitable options, competition should inspire firms to meet consumer demand by innovating less manipulative options. Not to say that all firms would lessen manipulation, but competition should lead *some* firms to offer a privacy-conscious alternative backed by information regarding decisional privacy, enhancing consumer welfare. This is especially true in digital markets where firms must compete along privacy dimensions.²⁹⁰ And because switching costs are relatively low—to move from Uber to Lyft, for example—digital markets would be presumptively sensitive to privacy competition.

Even if users currently seem unconcerned about privacy, just as importantly, competition should generate information about decisional privacy. A core benefit of competition is that firms typically inform users of their product's merits.²⁹¹ Where price competition is vigorous, information would typically concern the costs of competing goods. But in markets with zero-prices, competition is expected to emphasize factors such as quality and privacy.²⁹² As companies inform users about the benefits of privacy, this should build demand among users. In fact, it seems that demand for privacy has already taken root, animated by the sudden emergence of firms providing digital wellness programs.²⁹³ The market's level of decisional privacy should thus increase as competition generates information about the costs of porous privacy and the best methods of protecting it—information that concentrated digital markets have so far undersupplied.

Consider the contentious battle between Facebook and Snapchat. Because both companies offer social media for zero-prices, they compete over quality lines rather than with price signals. In a notable development, Facebook has

289. See, e.g., Maureen K. Ohlhausen & Alexander P. Okuliar, *Competition, Consumer Protection, and the Right [Approach] to Privacy*, 80 ANTITRUST L.J. 121, 121–23 (2015).

290. Khan, *supra* note 180, at 716 (explaining the issue of low prices within antitrust's framework via the context of Amazon).

291. Day & Stemler, *supra* note 33, at 92–93.

292. *Id.*

293. Facebook and Instagram created mechanisms for users to promote their digital wellbeing. Josh Constine, *Facebook and Instagram Now Show How Many Minutes You Use Them*, TECHCRUNCH (Aug. 1, 2018), <https://techcrunch.com/2018/08/01/facebook-and-instagram-your-activity-time>. An array of third-party companies have created similar mechanisms. Hilarey Wojtowicz, *11 Apps that Will Help You Reduce Your Screen Time*, LADDERS (Oct. 23, 2019), <https://www.theladders.com/career-advice/11-apps-that-will-help-you-reduce-your-screen-time>.

recently introduced a digital wellness program, providing users with mechanisms to reduce usage as well as receive information about over-exposure.²⁹⁴ It includes tools to track one's time on the app and hide push notifications. While Facebook has suggested that this service works against its best interests, the other explanation is that Facebook has sought to compete over decisional privacy.²⁹⁵ By increasing information about manipulation and innovating tools to achieve this end, Facebook has distinguished itself from Snapchat and its streaks. While it is impossible to know Facebook's true motivation, we find it unlikely that, absent Snapchat, Facebook would have dialed back the dopamine triggers, which it has fervently incorporated into its platform over the past two decades.

Digital manipulation should thus entail coercion when competition is unreasonably excluded, enabling the interface to extract wealth surpluses from users. To establish such an offense, the key is not whether the firm has persuaded users or provided them desirable services, but whether market power has enabled it to manipulate users into adopting behaviors against their self-interests. This would generally require the plaintiff to provide evidence that users would have, given a viable alternative, punished the offending firm. So in light of precedent and the invitation to reassess digital markets, we assert that consumer welfare erodes where manipulation steers users into adopting suboptimal behaviors. The next Part views the implications.

IV. IMPLICATIONS

This Part briefly discusses a few implications of our research. It explores the FTC's broader power to promote privacy as well as antitrust's treatment of innovation and merger policy.

A. The Promise of the FTC Act and Decisional Privacy

The FTC enjoys wide-ranging powers under Section 5 to promote decisional privacy that it should begin to enforce. While the antitrust laws provide a valuable tool to combat manipulation, this is not to say that consumer protection laws lack a role. In fact, consumer protection and antitrust laws are both intended to foster types of consumer welfare, as the FTC wields authority to enforce each regime. What is important is that the FTC has so far refused to intervene in cases involving digital manipulation. Given the economic and competitive harms arising from dark patterns, our argument is not that antitrust should promote privacy to the exclusion of consumer protection laws but that

294. Casey Newton, *Facebook and Instagram Add Dashboards to Help You Manage Your Time on Social Apps*, THE VERGE (Aug. 1, 2018), <https://www.theverge.com/2018/8/1/17636944/facebook-instagram-dashboards-time-well-spent-reminders>.

295. *See id.* (discussing tradeoffs the company must make).

antitrust and Section 5 of the FTC Act each can be important tools for achieving this goal.

As mentioned earlier, the FTC is the primary agency involved in promoting data privacy, though it has yet to test the extent of its authority.²⁹⁶ The cases where the FTC has so far intervened have involved allegations that a firm was “unfair” or “deceptive” in failing to protect data or personal information after making this express promise.²⁹⁷ For an act to be “unfair,” a substantial injury must arise, which has typically taken the form of *identity theft*.²⁹⁸ The consequence is that the FTC has resisted imposing liability under the unfairness prong for mere exposure of one’s data.²⁹⁹ Indeed, one administrative judge held that the FTC lacks authority to remedy “embarrassment” or “emotional harm” as an unfair trade practice when the pecuniary costs of identity theft are largely absent.³⁰⁰ As such, a firm must typically violate its express privacy policy or cause identity theft in order to incur liability under Section 5.³⁰¹

Scholars have nevertheless argued that the FTC enjoys significant power to promote privacy in more instances than it currently does. For starters, the broad language used in Section 5 grants the FTC with wide-ranging authority to condemn deceptive practices.³⁰² Recognizing the panoply of methods used to extract data and attention where few consumers would suspect it, the FTC should expand privacy enforcement beyond mere identity theft. The FTC must, according to scholarship, investigate firms for causing “dignity” harms flowing from diminished privacy rather than grounding all liability in identity theft.³⁰³

This argument should be taken a step further—going beyond the dignity costs of exposed personal information—to promote decisional privacy. The issue with decisional privacy is often that users fail to recognize the true state and costs of manipulation. Indeed, the effectiveness of dark patterns is that they make one’s behavior resemble an exercise of free will. Because the FTC has

296. Woodrow Hartzog & Daniel J. Solove, *The Scope and Potential of FTC Data Protection*, 83 GEO. WASH. L. REV. 2230, 2232 (2015) (remarking that the FTC is the primary agency in charge of promoting privacy, yet it could and should do more).

297. Justin (Gus) Hurwitz, *Data Security and the FTC’s UnCommon Law*, 101 IOWA L. REV. 955, 957–58 (2016) (“Because there is no specific statutory framework relating to data security in the United States, the FTC brings these cases under its unfair and deceptive acts and practices (“UDAP”) authority.”).

298. George Ashenmacher, *Indignity: Redefining the Harm Caused by Data Breaches*, 51 WAKE FOREST L. REV. 1, 47 (2016) (noting the primacy of identity theft in Section 5 cases about privacy).

299. *Id.* at 50.

300. *See* LabMD, Inc., No. 9357, 2015 FTC LEXIS 272, at *26 (F.T.C. Nov. 13, 2015), *vacated* 2016 FTC LEXIS 128 (F.T.C. July 28, 2016), *vacated*, 894 F.3d 1221 (11th Cir. 2018).

301. *See, e.g.*, Marisa Kendall, *Uber Settles Federal Probe Over Alleged Spying on Passengers*, THE MERCURY NEWS (Aug. 15, 2017), <http://www.mercurynews.com/2017/08/15/uber-settles-federal-probe-over-god-view-other-alleged-privacy-violations> (discussing penalties imposed for Uber’s violation of its own privacy policies).

302. Hartzog & Solove, *supra* note 296, at 2289 (explaining the extensiveness of the FTC’s authority); *see also* Hurwitz, *supra* note 297, at 963–71 (explaining the common law of the FTC Act, derived from its broadly worded statutory authority).

303. *See, e.g.*, Ashenmacher, *supra* note 298, at 49.

increasingly sought to promote privacy under Section 5 but has yet to recognize the economic, social, and dignity costs of decisional privacy, we argue that the FTC Act could fill an important role in ameliorating digital manipulation.

Note, though, that the FTC and antitrust laws are far from redundant mechanisms despite sharing similar mandates of consumer welfare.³⁰⁴ A key difference is that antitrust achieves this end via fostering competition whereas consumer protection laws cure informational asymmetries regardless of competition. With this in mind, Section 5's advantage is that it may condemn firms that have misled consumers about their platform's level of privacy. But oftentimes digital manipulation is enabled, not by misinformation, but a lack of information fueled by insufficient competition. Where tactics are meant to exclude competition or exploit the vacuum of competition in concentrated markets, antitrust provides a natural remedy. Each regime could thus remedy harms posed by digital manipulation.

Another benefit of employing both sets of laws concerns the scopes of actors who may enforce them. Only the FTC may act under Section 5.³⁰⁵ With the Sherman Act, though, private litigants have the right to initiate claims.³⁰⁶ This could allow private firms to litigate decisional privacy without depending on the agencies to act. In fact, the DOJ may enforce the antitrust laws in addition to the FTC. If the FTC elects against litigating decisional privacy, the availability of antitrust remedies would thus empower private actors or even the DOJ to do so. In sum, while antitrust could effectively remedy digital manipulation, consumer protection laws should also play an important role.

B. Merger Policy

While the antitrust agencies have insinuated that privacy could become a part of merger enforcement, decisional privacy should as well. A popular method to build market power comes via mergers and acquisitions (M&A).³⁰⁷ If a dominant firm can withstand initial competition, the acquisition of upstarts may allow it to build market power in a manner where future entrants cannot compete. For instance, Facebook has allegedly squelched competition by purchasing 90 companies over the past 15 years.³⁰⁸ Facebook's failure to

304. See generally Joshua D. Wright, *The Antitrust/Consumer Protection Paradox: Two Policies at War with Each Other*, 121 *YALE L.J.* 2216 (2012) (analyzing the differences between antitrust and consumer protection laws).

305. 15 U.S.C. § 45.

306. 15 U.S.C. §§ 15, 26.

307. Day & Stemler, *supra* note 33.

308. Brent Kendall et al., *FTC Antitrust Probe of Facebook Scrutinizes Its Acquisitions*, *WALL ST. J.* (Aug. 1, 2019), <https://www.wsj.com/articles/ftc-antitrust-probe-of-facebook-scrutinizes-its-acquisitions-11564683965?ns=prod/accounts-wsj>.

purchase Snapchat for \$3 billion could be its greatest regret.³⁰⁹ The attendant threat to competition has even inspired the federal agencies to *revisit* acquisitions by tech companies such as Amazon, Facebook, Google, and Apple.³¹⁰ Like the agencies, our concern is that firms could combine in a manner where their shared data could give the surviving entity not only a significant advantage over competition, but also the ability to manipulate users.

The Clayton Act vests the federal agencies with power to contest mergers threatening competition and consumer welfare.³¹¹ The logic is that the antitrust laws should prevent firms from merging when their coordination would otherwise constitute an illegal restraint of trade. When a proposed merger hits certain thresholds of largeness per the Hart-Scott-Rodino Act,³¹² the companies must submit it for review.³¹³ Even if the agencies permit the merger to proceed, the agencies can later revisit it if the merger turns out to harm competition and consumers.³¹⁴

To illustrate the potential role for privacy, consider Google's proposed acquisition of Fitbit Incorporated.³¹⁵ The plan resembles other mergers where Google has reportedly sought to purchase a firm for its data, such as Google's combination with Nest Labs (acquiring information pertaining to household energy usages)³¹⁶ as well as YouTube.³¹⁷ Few enforcers would have traditionally worried about the Fitbit merger because Google and Fitbit largely compete in different markets.³¹⁸ Today, though, scholars and enforcers have grown increasingly nervous about whether Google could potentially exploit the acquired data to block competition and erode privacy in health care markets.³¹⁹

309. See Seth Fiegerman, *Snapchat CEO Reveals Why He Rejected Facebook's \$3 Billion Offer*, MASHABLE (Jan. 6, 2014), <https://mashable.com/2014/01/06/snapchat-facebook-acquisition-2> (discussing Facebook's failed attempt to purchase Snapchat).

310. Leah Nylen, *How the Courts Could Thwart a Silicon Valley Crackdown*, POLITICO (Feb. 11, 2020), <https://www.politico.com/news/2020/02/11/silicon-valley-ftc-courts-114232>.

311. 15 U.S.C. § 18.

312. 15 U.S.C. § 18a; see also Julia Kapchinskiy, *The Duality of Provider and Payer in the Current Healthcare Landscape and Related Antitrust Implications*, 55 SAN DIEGO L. REV. 617, 627 n.59 (2018) (describing the thresholds).

313. See Menesh S. Patel, *Merger Breakups*, WIS. L. REV. (forthcoming).

314. *Id.* at 5–7 (arguing that the agencies should increase enforcement of prior mergers).

315. Adi Robertson, *The Justice Department Will Reportedly Investigate Google's Fitbit Acquisition*, THE VERGE (Dec. 10, 2019), <https://www.theverge.com/2019/12/10/21009870/justice-department-doj-google-fitbit-acquisition-antitrust-review-data-privacy-ftc>.

316. Marcus Wohlsen, *What Google Really Gets Out of Buying Nest for \$3.2 Billion*, WIRED (Jan. 14, 2014), <https://www.wired.com/2014/01/googles-3-billion-nest-buy-finally-make-internet-things-real-us>.

317. Margaret Harding McGill, *Google's YouTube Hit with \$170M Fine over Children's Privacy*, POLITICO (Sept. 4, 2019), <https://www.politico.com/story/2019/09/04/google-youtube-fine-children-privacy-1588267>.

318. David McLaughlin & Aoife White, *Google's Fitbit Deal Tests Merger Cops Eyeing Data Giants*, BLOOMBERG (Feb. 10, 2020), <https://www.bloomberg.com/news/articles/2020-02-10/google-fitbit-deal-poses-test-for-merger-cops-cyning-data-giants>.

319. *Id.*

In support of this contention, the *Wall Street Journal* found that Google has implemented a secret strategy to enter the health care industry, code-named “Project Nightingale.”³²⁰ Upon Google’s partnering with Ascension, a chain of 2,600 hospitals,³²¹ the report indicates that “[a]t least 150 Google employees already have access to much of the data on tens of millions of patients.”³²² Google’s goal was allegedly to subject the acquired data to machine learning and AI, effectuated in part by Google Brain, to understand individualized health care decisions and policies.³²³ It is with this backdrop that observers have balked at how Fitbit’s data could advance Project Nightingale.³²⁴

Even disregarding Project Nightingale, privacy advocates have expressed a strong position against the merger. While Google claims that it will not use Fitbit’s data for advertising, critics have identified numerous other ways in which Google may exploit acquired information regarding one’s diet, exercise patterns, sleeping patterns, and weight: “Could your Fitbit data be used to say, influence your Google search results? Or to suggest restaurants in your neighborhood? To build new health products? To make calendar invite suggestions?”³²⁵ In fact, observers doubt Google’s truthfulness in pledging to protect privacy, noting that the company has previously misled regulators on this subject.³²⁶ For example, Google incurred a \$40 million fine for lying to users about how it would surveil them upon purchasing DoubleClick.³²⁷

Our position is that the threat to decisional privacy increases substantially when an acquisition results in consolidated data. To the degree that a firm can track, persuade, or manipulate users based on each user’s data history, its ability to do so increases as the quality and diversity of data increases, evidenced again by Google’s merger history of disparate technology firms. Where the acquisition of Fitbit would allow Google to target and alter the behaviors of health care consumers—constituting essentially everyone—the agencies should review the proposed merger to understand how the surviving firm endeavors to use the acquired data to affect the choices of consumers.

320. Rob Copeland, *Google’s “Project Nightingale” Gathers Personal Health Data on Millions of Americans*, WALL ST. J. (Nov. 11, 2019), <https://www.wsj.com/articles/google-s-secret-project-nightingale-gathers-personal-health-data-on-millions-of-americans-11573496790>.

321. *Id.*

322. *Id.*

323. *Id.*

324. See, e.g., Kari Paul, *Tossed My Fitbit in the Trash: Users Fear for Privacy After Google Buys Company*, THE GUARDIAN (Nov. 6, 2019), <https://www.theguardian.com/technology/2019/nov/05/fitbit-google-acquisition-health-data>.

325. Shirin Ghaffary & Rani Molla, *Google Says It Won’t Use Your Fitbit Data to Target You with Ads. But What Else Will It Do?*, VOX (Nov. 1, 2019), <https://www.vox.com/recode/2019/11/1/20943583/google-fitbit-acquisition-privacy-antitrust>.

326. Gilad Edelman, *Google Is Basically Daring the Government to Block Its Fitbit Deal*, WIRED (Nov. 13, 2019), <https://www.wired.com/story/google-fitbit-project-nightingale-antitrust>.

327. *Id.*

Adding support to this assertion, the agencies can enter consent decrees with firms to bless a merger based on certain conditions,³²⁸ one of which could canvass how firms might use the data to influence behavior. In other words, the use of merger policy to understand data policies would enable the agencies to promote decisional privacy. Also, because the agencies retain power to revisit previously consummated mergers, it would incentivize firms to use their combined data with restraint to avoid drawing the DOJ and FTC's attention at a later time. For these reasons, incorporating elements of decisional privacy into merger review would enhance consumer welfare.

C. Innovation

The issue of online manipulation implicates a greater debate about antitrust's relationship with innovation. Specifically, commentators contend that subjecting instances of innovation to antitrust review would chill research and development (R&D).³²⁹ There is also a practical issue: innovation is supposed to hurt rivals by usurping sales and market shares.³³⁰ So it could create confusion if courts and enforcers enhanced antitrust scrutiny targeting innovative firms.

We are sympathetic to the public policy of promoting innovation as well as confident that our proposal would do little to stymie R&D—if anything it would promote innovation. First, we think that condemning manipulation would refocus how firms design interfaces: instead of innovating methods to maximize dopamine releases and embed dark patterns, firms would have incentives to compete on the merits by creating services desired by users. Second, in situations where a firm harbors anxiety about whether its interface might be viewed as anticompetitive, it could institute a digital wellness program. If firms created safeguards enabling users to either maintain a healthy level of screen time or resist dark patterns, these steps would provide evidence that no anticompetitive effect was sought. Third, scholarship has persuasively argued that enforcement promotes innovation.³³¹ The theory is that the chief incentive for firms to innovate stems from the desire to remain ahead of, or surpass, rivals.³³² Without competition, though, a firm could more easily maintain

328. See generally Paul H. Sukenik, *The Earth Belongs to the Living, or at Least It Should: The Troubling Difficulty of Modifying Antitrust Consent Decrees*, 97 N.C. L. REV. 734 (2019) (explaining consent decrees).

329. See *supra* notes 235–238 and accompanying text.

330. Leslie Kramer, *What Strategies Do Companies Employ to Increase Market Share?*, INVESTOPEDIA (July 7, 2019), <https://www.investopedia.com/ask/answers/031815/what-strategies-do-companies-employ-increase-market-share.asp>; William Hubbard, *The Debilitating Effect of Exclusive Rights: Patents and Productive Inefficiency*, 66 Fla. L. Rev. 2045, 2079 (2014) (describing the theory that competition produces more innovation than monopoly).

331. Hubbard, *supra* note 330 (describing the theory that competition produces more innovation than monopoly).

332. *Id.*

2020]

Are Dark Patterns Anticompetitive?

45

market power without investing in innovation. As such, our argument is that antitrust policy should not shirk its duty to examine anticompetitive behaviors occurring in innovative markets.

CONCLUSION

We have thus argued in favor of condemning the effects of online manipulation as an anticompetitive effect. As argued herein, the concept of behavioral autonomy may soon become a reflection of market quality, given the dangers of online manipulation. When considering antitrust's precedent regarding coercion, the antitrust enterprise bears the authority to condemn dark patterns and similar forms of manipulation. Once courts and enforcers recognize the costs of such online manipulation, the antitrust enterprise may condemn it without struggling with the contours of antitrust's scope.