

THE CODE OF THE PLATFORM

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Digital platform-based businesses such as Uber, eBay, and Google have become ubiquitous in our daily lives. They have done so by expertly harnessing technology to bring supply- and demand-side users together for commercial and social exchange. Users are happy to let these platform companies play “matchmaker” because transaction costs are lowered—it is easier to find or give a ride, buy or sell a product, or obtain almost any kind of information than ever before—and platforms are happy to be at the center of the exchange, taking advantage of network effects to become wildly successful. Despite the success of these platforms, however, there is an increasing unease with the methods that platforms use to sustain their multi-sided markets—namely, users question whether they are being manipulated by some of their favorite companies. This Article offers a first-of-its kind analysis into both the legality and ethicality of platform companies, specifically their use of technologically enhanced

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behavioral science to mediate user transactions. After providing a descriptive account of how platform companies operate and succeed, including an in-depth analysis of the choice architecture platforms employ to structure almost every decision made on the platform, this Article evaluates whether platforms manipulate users. Various activities of platform companies are assessed and charted on a platform manipulation matrix as part of an integrated framework that evaluates the autonomy costs platforms impose upon users. Once done, it becomes clear that much of what platforms do is indeed manipulative; yet much is also beneficial to users and companies alike. This Article then offers a path forward: an ethical foundation to be used by platforms, users, and regulators aimed at reducing manipulative practices—a new Code of the Platform.

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I. INTRODUCTION

Much of modern life is spent on a platform. If you have hailed a ride, booked a room, ordered takeout, or had your dog walked by a stranger, you have probably used one. If you tweeted something, liked something, or bought something, you may have too.¹ And if you have ever searched for anything on the Internet, you definitely used one.² That is because platforms—or, more accurately, digital platform-based businesses—are hard to avoid these days.³ Platform companies such as Uber, eBay, Facebook, and Google are ubiquitous in our daily lives because they act as “matchmakers” between supply- and demand-side users in commercial and social transactions.⁴ Their omnipresence comes from their ability to effectively harness technology to facilitate multi-sided exchanges, with their platforms at the center.⁵

The unique capability of platform companies to mediate many of our daily interactions has made some platforms spectacularly successful. The list above includes a few of the largest and most well-known companies in the world, ones that many of us would

¹ See *How to Tweet*, TWITTER, <https://help.twitter.com/en/using-twitter/how-to-tweet> (last visited Nov. 12, 2019) (discussing the feature of “tweeting” out messages on the platform); *Like and Interact with Pages*, FACEBOOK, https://www.facebook.com/help/1771297453117418/?helpref=hc_fnav (last visited Nov. 12, 2019) (discussing the “like” feature on the platform).

² See, e.g., Ruonan Sun, Shirley Gregor & Byron Keating, *Information Technology Platforms: Conceptualisation and a Review of Emerging Research in IS Discipline*, AUSTRALASIAN CONFERENCE ON INFORMATION SYSTEMS 1 (2015), https://pdfs.semanticscholar.org/869b/612b4514447a701526130d7632f460c90388.pdf?_ga=2.55035499.1542560517.1573430201-1135222610.1572310055 (naming the Internet as a “platform”).

³ This Article uses the terms “platforms” and “platform companies” interchangeably to identify platform-based businesses. This Article uses the term “platform” when describing a digital space in which two or more users on opposite sides of a social or economic transaction interact.

⁴ See John Herrman, *Platform Companies Are Becoming More Powerful—But What Exactly Do They Want?*, N.Y. TIMES MAG. (Mar. 21, 2017), <https://www.nytimes.com/2017/03/21/magazine/platform-companies-are-becoming-more-powerful-but-what-exactly-do-they-want.html> (naming Uber, eBay, Facebook, and Google as platform companies); see also DAVID S. EVANS & RICHARD SCHMALENSEE, *MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS* 8 (2016) (describing the functions and success of multi-sided platforms (“matchmakers”).

⁵ See Sangeet Paul Choudary, *Why Business Models Fail: Pipes vs. Platforms*, WIRED, <https://www.wired.com/insights/2013/10/why-business-models-fail-pipes-vs-platforms/> (last visited Nov. 17, 2019) (explaining that what separates platforms from traditional linear business models is that “users (producers) can create value on the platform for other users (consumers) to consume . . . a massive shift from any form of business we have ever known”).

deem indispensable.⁶ Indeed, the combined market capitalization of the top twenty platform companies is roughly \$6 trillion,⁷ more than a quarter of the size of the U.S. economy.⁸ And the number, value, and importance of platforms is growing. According to a recent study, there are now 176 platform companies, each with a value of over \$1 billion and some topping \$1 trillion.⁹ Platforms also make up some of the fastest growing companies within the tech sector.¹⁰ For every Amazon and Apple, there are hundreds, maybe thousands, more platforms across the world—some, for example, vying to connect homebuyers with mortgages (Morty), neighbors with rental goods (Fat Lama), or cannabis industry workers with dispensaries and grow houses (Vangst).¹¹ These numbers will only increase; last year, a “quarter of a billion [people] came online for the first time,” adding to the already more than four billion platform users.¹²

That so many users are drawn to platforms is no surprise. Platforms create convenient ways for people to come together and exchange goods, services, and information. In economic terms, platforms create a “participative infrastructure” that encourages

⁶ Facebook, Google (via its parent company, Alphabet), Amazon, Apple, and Microsoft are Fortune 100 companies and are also platforms. See *Fortune 500*, FORTUNE, <http://fortune.com/fortune500/list/> (last visited Nov. 17, 2019).

⁷ Jeff Desjardins, *Tech’s 20 Largest Companies Are Based in 2 Countries*, BUS. INSIDER (July 9, 2018, 7:30 PM), <https://www.businessinsider.com/techs-20-largest-companies-are-based-in-2-countries-2018-7>.

⁸ See Caleb Silver, *Top 20 Economies in the World*, INVESTOPEDIA (June 7, 2019), <https://www.investopedia.com/insights/worlds-top-economies/> (stating that the U.S. gross domestic product is \$20.49 trillion).

⁹ PETER C. EVANS & ANNABELLE GAWER, CTR. FOR GLOB. ENTER., *THE RIDE OF THE PLATFORM ENTERPRISE: A GLOBAL SURVEY* 10–14 (2016), https://www.thege.net/app/uploads/2016/01/PDF-WEB-Platform-Survey_01_12.pdf.

¹⁰ For example, GrubHub—the food delivery platform that services 50,000 restaurants in the United States—had an “average sales growth above 50 percent” in 2017. Alex Konrad, *Meet the Fastest Growing Public Tech Companies in 2017*, FORBES (May 23, 2017, 11:33 AM), <https://www.forbes.com/sites/alexkonrad/2017/05/23/fastest-growing-public-tech-companies-in-2017/#46fcdf111ea7>.

¹¹ See Courtney Connley, *Meet the 24-Year-Old Founder Behind the Career Site for Cannabis Jobs*, CNBC (Oct. 18, 2017, 11:18 AM), <https://www.cnbc.com/2017/10/18/meet-the-24-year-old-founder-behind-the-career-site-for-cannabis-jobs.html>; Joanna Glasner, *Startups Are (Still) Making Weird Name Choices*, TECHCRUNCH (Feb. 10, 2018, 11:00 AM), <https://techcrunch.com/2018/02/10/startups-are-still-making-weird-name-choices/>. This is especially true in China. See generally KAI-FU LEE, *AI SUPER-POWERS: CHINA, SILICON VALLEY, AND THE NEW WORLD ORDER* (2018).

¹² Simon Kemp, *Digital in 2018: World’s Internet Users Pass the 4 Billion Mark*, WE ARE SOCIAL (Jan. 30, 2018), <https://wearesocial.com/blog/2018/01/global-digital-report-2018>. And those three billion platform users include *only* social media platform users; the number of total platform users is much higher. See *id.*

users to interact, which then reduces transaction costs and minimizes information asymmetries, thereby facilitating exchange and creating economic value.¹³ As users increase, so do network effects, which make the platform more attractive to new users and more difficult for existing users to leave.¹⁴ This propels successful platform companies toward monopolies, which are “intoxicating to investors,” and leads to additional cycles of investment, growth, and success.¹⁵ In fact, some suggest platforms may be the perfect business model.¹⁶

Despite these positives, however, platforms are now facing criticism. Recent public outcry concerning data breaches at Uber, LinkedIn, and TicketFly is one example.¹⁷ Congressional inquiry into election meddling through social media platforms like Facebook and Twitter is another.¹⁸ And a third is growing discord among platform company employees over working for distasteful clients, most notably occurring at Google.¹⁹

¹³ SANGEET PAUL CHOUDARY, PLATFORMATION LABS, THE ARCHITECTURE OF DIGITAL LABOUR PLATFORMS: POLICY RECOMMENDATIONS ON PLATFORM DESIGN FOR WORKER WELL-BEING 1–2 (2018), https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_630603.pdf, in 3 INT’L LABOUR ORG., FUTURE OF WORK (2018).

¹⁴ See David S. Evans, *Antitrust Issues Raised by the Emerging Global Internet Economy*, 102 NW. U. L. REV. 285, 293 (2008) (explaining network effects as the “value that a customer on one side realizes from the platform increases with the number of customers on the other side”); see generally Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93 (1994).

¹⁵ See generally Gregory Day & Abbey Stemler, *Infracompetitive Privacy*, 105 IOWA L. REV. 61 (2019); Herrman, *supra* note 4.

¹⁶ See, e.g., Herrman, *supra* note 4 (reporting that platforms have been the “subject of rapturous popular business writing”). The term “holy grail” is also often invoked. See, e.g., Tim Rettig, *Membership Platforms: The Holy Grail of Online Business?*, MEDIUM (Aug. 3, 2018), <https://medium.com/swlh/membership-platforms-the-holy-grail-of-online-business-77f3a5888c25>.

¹⁷ See Jade Scipioni, *A List of the Biggest Data Leaks*, FOX BUS. (Dec. 27, 2018), <https://www.foxbusiness.com/features/a-list-of-the-biggest-data-leaks> (estimating that “over the last two years, there has been a massive data breach involving big outlets almost every single month”).

¹⁸ Harry Zahn & Joshua Barajas, *What We Learned—and Still Don’t Know—from Senate Reports on Russian Election Propaganda*, PBS NEWSHOUR (Dec. 19, 2018, 5:47 PM), <https://www.pbs.org/newshour/politics/what-we-learned-and-still-dont-know-from-senate-reports-on-russian-election-propaganda>.

¹⁹ See Brittany De Lea, *Google Code of Ethics on Military Contracts Could Hinder Pentagon Work*, FOX BUS. (Apr. 13, 2018), <https://www.foxbusiness.com/features/google-code-of-ethics-on-military-contracts-could-hinder-pentagon-work> (describing how more than 3,000 employees signed a petition protesting Project Maven, an artificial intelligence program to support government drones).

While these scandals are significant and may impact the future operation and regulation of platforms in important ways, they have also obscured a more fundamental concern, one that is broader than itinerant wrongdoing and that goes to the heart of all platform-based business models: whether platforms are manipulative to users. Put more formally, are platform companies imposing impermissible costs on user autonomy through the multi-sided markets they have created and fostered? And if they are, what can and should be done about it, legally and ethically?

This Article takes up these critical questions from a viewpoint that is novel in the business and legal literature.²⁰ It begins with an analysis of platforms as mediators between supply- and demand-side users, explaining how platform companies emerge, grow, and become monopolistic via network effects. The Article also includes a discussion of an additional demand-side user that platforms mediate: regulators. While the role of regulators has been discussed largely as exogenous to platform operation, it is more properly conceptualized as endogenous to multi-sided markets—avoiding regulation is inherent in the design and operation of platforms, which includes mediating regulators to take advantage of market failures.²¹ Also critical to this discussion is how platform companies use technology to deliver the powerful tools of behavioral science to influence various users, structuring the way in which those users make almost every choice on the platform. Platforms are not only “nudging” their users to engage in transactions that are beneficial to the company, they have progressed to engineering

²⁰ Digital market manipulation in the sharing economy and legal violations committed by platform companies have been the subject of some scholarly attention. See, e.g., Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995 (2014); Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623 (2017); Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87 (2016). But this Article engages in a broader analysis that encompasses all platform companies and assesses manipulation from a legal and ethical lens. We do, however, draw direct inspiration from Lobel’s piece regarding this Article’s title.

²¹ See generally Abbey Stemler, *Feedback Loop Failure: Implications for the Self-Regulation of the Sharing Economy*, 18 MINN. J. L. SCI. & TECH. 673 (2017) (discussing the need for platform regulation); Abbey Stemler, *The Myth of the Sharing Economy and Its Implications for Regulating Innovation*, 67 EMORY L.J. 101 (2017) (noting that social rhetoric has convinced the public ride-sharing regulation is unneeded).

inputs to users so as to almost guarantee the outputs—the “response, behavior, [and] beliefs” of anyone using the platform.²²

Second, this Article engages in the difficult task of evaluating whether the structure of platforms and the behavioral tools they use are manipulative to users. Employing an integrated framework centered around the costs to users’ autonomy, various actions by platform companies are assessed and charted on a platform manipulation matrix. This exercise serves two functions. One is that it provides a principled framework by which all stakeholders—platform companies, supply- and demand-side users, regulators, and the public—can assess the manipulative effects of platform operations. Based on this analysis, this Article finds that much of what platforms do is indeed manipulative to users, on all sides of the mediated transaction. Platform companies are able to influence users to act against their long-term interests, often without users’ knowledge.²³ This imposes an impermissible cost on user autonomy in violation of accepted ethical standards.²⁴

Yet this Article also recognizes that some platform operations that nudge users’ decisions are not only benign, but welfare-enhancing for those users and therefore should be allowed, if not encouraged.²⁵ Thus, situating platform company actions on a manipulation matrix serves the second function: highlighting autonomy cost outliers, i.e., those actions imposing significant costs to one’s agency that many stakeholders would deem problematic. Such actions are most ripe for inspection, intervention, and elimination, either through governmental or private regulation.

Third, this Article offers a reasoned path forward for those stakeholders committed to reducing platform manipulation, including platform companies themselves. It begins with a discussion of the current legal and regulatory landscape applicable to platforms. After recognizing the severe practical limitations here, this Article turns to a more promising route: an ethical code

²² Brett Frischmann & Deven Desai, *The Promise and Peril of Personalization*, STAN. L. SCH. (Nov. 29, 2018, 1:28 PM), <http://cyberlaw.stanford.edu/blog/2018/11/promise-and-peril-personalization>.

²³ See *infra* Section III.A.

²⁴ See *infra* Section III.C.

²⁵ See e.g., RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 6 (2008) (describing a nudge as “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives”).

applicable to platform companies. Incorporating ethical principles gleaned from the behavioral science and technology communities, this Article provides the first ethical code of its kind targeted specifically at reducing manipulation of platform users.

Our straightforward code, which platform companies have a self-interest in adopting, serves as a starting point and guide for anyone—from corporations to the public—considering platform regulation. While platform companies often facilitate desired, value-creating exchange among users, they also possess unprecedented tools of manipulation. It is the prospect of this very real harm to billions of platform users that requires a new Code of the Platform.

II. THE COMPOSITION OF PLATFORMS

Throughout human history, platforms have helped people connect. From farmers' markets to newspaper classified advertisements, any real or virtual space that facilitates transactions is a platform.²⁶ The Internet, however, has created new platform dynamics. Fueled by ubiquitous and high-speed broadband, GPS technology, cloud computing, and sophisticated algorithms, innovative digital platforms have transformed our everyday lives.²⁷ Platforms provide information at our fingertips, help us navigate the world, and influence us in ways we are just beginning to understand.

A. PLATFORMS AS FACILITATORS

Most modern digital-based platform companies use a simple but highly effective business model: they generate revenue by using technology to facilitate transactions among users.²⁸ With Google, it is often between advertisers and searchers; with Uber, it is between drivers and riders; and with Airbnb, it is between hosts and guests. Platform revenue streams largely come from fees for facilitating transactions between those users (e.g., Uber, Airbnb) or providing

²⁶ See *supra* notes 3–6 and accompanying text.

²⁷ See Lobel, *supra* note 20, at 94 (describing how modern technology has enhanced the power of platforms).

²⁸ See generally ALEX MOAZED & NICHOLAS L. JOHNSON, MODERN MONOPOLIES: WHAT IT TAKES TO DOMINATE THE 21ST CENTURY ECONOMY (2016) (detailing the benefits and contours of platform-based business models).

one group of users access to another group (e.g., Google, Facebook).²⁹ It follows, then, that to generate both transactions and revenue, platforms must attract and retain users. This is done through traditional means—creating a product that people want to use—and through network effects, a phenomenon that causes a product or service to gain additional value as more people use it.³⁰

The first way that platforms attract users to facilitate transactions is the most intuitive—they design a website or app that reduces search costs associated with negotiation, marketing, or payment processing.³¹ While it sounds simple, this facilitating function can be crucial for an efficient marketplace. When parties interested in transacting cannot easily find one another to exchange goods or services, it disrupts the desirability of a particular market.³²

For example, think of marketplaces for used goods before eBay. If a person sought a rare item, that person would have to scour newspapers, flea markets, or antique shops in hope of finding the item, then negotiate the sale in person and hope the item lived up to the seller's promises. At each step, there would be transaction costs lessening the likelihood of a value-creating exchange—from search costs to travel. But eBay's digital platform greatly reduced those burdens.³³ Now millions of buyers can find, review, and purchase items on their phones; and with the platform's rating and payment systems, the transaction is smoother and less costly. eBay

²⁹ Cf. Kaleigh Rogers, *Let's Talk About Mark Zuckerberg's Claim that Facebook 'Doesn't Sell Data,'* VICE (Apr. 11, 2018, 11:12 AM), https://motherboard.vice.com/en_us/article/8xkdz4/does-facebook-sell-data (explaining that platforms like Facebook made money by using user data to connect advertisers to desired users).

³⁰ See Stephen P. Borgatti et al., *Network Analysis in the Social Sciences*, 323 SCI. 892, 892–93 (2009) (discussing social network theory and how it may be used to increase corporate profitability).

³¹ Cf. Harold Demsetz, *The Cost of Transacting*, 82 Q.J. ECON. 33, 35 (1968) (explaining that transaction costs are the costs associated with any trade in a given market and studying those costs at the New York Stock Exchange); EVANS & SCHMALENSEE, *supra* note 4, at 15, 77 (discussing how platforms facilitate transactions).

³² See, e.g., EVANS & SCHMALENSEE, *supra* note 4, at 15, 77 (illustrating how platforms die when parties do not connect).

³³ See Daniel Houser & John Wooders, *Reputation in Auctions: Theory, and Evidence from eBay*, 15 J. ECON. & MGMT. STRATEGY 353, 353 (2006) (describing how the Internet has dramatically lowered the costs of organizing markets and eBay's role in that via reputation rankings).

exacts a fee on each exchange, and everyone—buyer, seller, and the company—is seemingly better off.³⁴

The second way platforms attract users is less intuitive, but more important in terms of growth and dominance: network effects. At the most basic level, network effects occur when platforms reach a critical mass of users, thereby making the platform more desirable for each additional user that joins.³⁵ The more people that use Instagram, for example, the more people will *want* to use Instagram because there will be more content on the platform to view.

Furthermore, when platforms generate a critical mass of one group of users (e.g., consumers), other groups will want to join the platform (e.g., advertisers). Again, consider Instagram. The more users who join Instagram, the better their experience will likely be because they will find more pictures they are interested in. And advertisers are better off because it is easier for them to find and attract consumers.³⁶ As various groups on a platform benefit, the network expands, and the platform, without much effort, quickly grows in size and popularity.

Relatedly, if a platform company achieves a critical mass and network effects occur, it can generate revenues at very low marginal cost.³⁷ Airbnb provides a good example. The company's product is a digital platform connecting renters and hosts. It receives a

³⁴ See R.H. Coase, *The Nature of the Firm*, 4 *ECONOMICA* 386, 388, 390–91 (1937) (asserting that firms are formed to reduce transaction costs, like those involved in negotiating and contracting a series of individual exchanges on the market).

³⁵ See Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 *AM. ECON. REV.* 424, 424 (1985) (explaining that “[t]here are many products for which the utility that a user derives from consumption of the good increases with the number of other agents consuming the good” and introducing possible sources of such positive consumption externalities); Arun Sundararajan, *Network Effects*, *ECON. OF IT*, <http://oz.stern.nyu.edu/io/network.html> (last visited Jan. 20, 2020) (defining and characterizing network effects).

³⁶ See EVANS & SCHMALENSEE, *supra* note 4, at 8; JUSTUS HAUCAP & ULRICH HEIMESHOF, *GOOGLE, FACEBOOK, AMAZON, EBAY: IS THE INTERNET DRIVING COMPETITION OR MARKET MONOPOLIZATION?* (Hans-Theo Normann ed., Düsseldorf Inst. for Competition Econs. 2013), http://www.dice.hhu.de/fileadmin/redaktion/Fakultaeten/Wirtschaftswissenschaftliche_Fakultaet/DICE/Discussion_Paper/083_Haucap_Heimeshoff.pdf.

³⁷ See Diane Coyle, *Digital Platforms Force a Rethink in Competition Theory*, *FIN. TIMES* (Aug. 17, 2017), <https://www.ft.com/content/9dc80408-81e1-11e7-94e2-c5b903247afd> (explaining that high upfront costs and low marginal costs lead to large economies of scale). Marginal cost is “the extra cost incurred by increasing output of a product by one unit.” *Marginal Cost*, *OXFORD ENGLISH DICTIONARY* (2d ed. 1989).

percentage of each transaction.³⁸ But because the costs of maintaining the platform do not increase at the same rate as the number of users (unlike with most manufactured goods), it can generate many additional fees without much additional work or cost. This is why in 2017, Airbnb was able to make \$2.6 billion in revenue with 3,100 employees,³⁹ while Hyatt Hotels made its \$4.7 billion in revenue but required over thirteen times the workforce.⁴⁰ Generating more revenue for less cost than a competitor provides a significant market advantage.⁴¹

In addition to the “standard” network effects explained above, platforms also attract and retain users by taking advantage of “data network effects.”⁴² Data network effects arise

when your product, generally powered by machine learning, becomes smarter as it gets more data from your users. In other words: the more users use your product, the more data they contribute; the more data they contribute, the smarter your product becomes (which can mean anything from core performance improvements to predictions, recommendations, personalization, etc.); the smarter your product is, the better it serves your users and the more likely they are

³⁸ *What Is the Airbnb Service Fee?*, AIRBNB, <https://www.airbnb.com/help/article/1857/what-is-the-airbnb-service-fee> (last visited Nov. 17, 2019) (explaining that service fees typically equal three percent for hosts and vary for guests).

³⁹ Craig Smith, *105 Amazing Airbnb Statistics and Facts (2019)*, DMR (Sept. 6, 2019), <https://expandedramblings.com/index.php/airbnb-statistics/>; Olivia Zaleski, *Inside Airbnb's Battle to Stay Private*, BLOOMBERG (Feb. 6, 2018, 8:29 PM), <https://www.bloomberg.com/news/articles/2018-02-06/inside-airbnb-s-battle-to-stay-private>.

⁴⁰ *Hyatt Hotels Corporation*, REUTERS, <https://www.reuters.com/companies/H.N> (last visited Nov. 17, 2019) (explaining that Hyatt Hotels brought in \$4.7 billion in revenue in 2017); *Hyatt Hotels Corporation*, GREAT PLACE TO WORK UNITED STATES, <https://www.greatplacetowork.com/certified-company/1000120> (last visited Nov. 17, 2019) (explaining that Hyatt Hotels has over 41,500 employees).

⁴¹ None of this is destined, of course. If a platform builds a user base too quickly, it is possible the platform may deteriorate. See, e.g., HAUCAP & HEIMESHOFF, *supra* note 36, at 6 (explaining that negative externalities can emerge as the platform reaches capacity, increasing costs to users).

⁴² Matt Turck, *The Power of Data Network Effects*, MATTTURCK.COM (Jan. 4, 2016), <https://mattturck.com/the-power-of-data-network-effects> (explaining the difference between “standard” network effects and “data” network effects).

to come back often and contribute more data—and so on and so forth.⁴³

One of the reasons users come to a platform initially is because it offers a useful and intuitive interface. This is paramount because if a platform is clunky, slow, or difficult to navigate, users will get frustrated and fail to fully appreciate the reduction in transaction costs, causing the platform to swiftly collapse.⁴⁴ Design choices for these interfaces are not made by chance, however. Platform companies run countless experiments on users to inform their design choices, often using A/B testing, a method for comparing two versions of an interface against one another to identify which one is most effective.⁴⁵ The more data a platform receives, the more machine learning can help programmers distill useful insights, including how to make the platform more appealing and gain more users.⁴⁶ Over time, platform companies take advantage of network effects—standard and data—to create products that become “deeply and increasingly entrenched,” as no other platform can serve users as well.⁴⁷

B. DOMINANT PLATFORMS

By creating intuitive and useful interfaces that reduce transaction costs, and by taking advantage of network effects, platforms have become unparalleled facilitators, matching billions of users and smoothing their interactions.⁴⁸ But a few platform companies have become something more. They have become dominant, reaching an unprecedented scale in terms of economic

⁴³ *Id.*

⁴⁴ Mark Bonchek and Sangeet Paul Choudary describe this as “flow,” or “how well the platform fosters the exchange and co-creation of value.” Mark Bonchek & Sangeet Paul Choudary, *Three Elements of a Successful Platform Strategy*, HARV. BUS. REV. (Jan. 31, 2013), <https://hbr.org/2013/01/three-elements-of-a-successful-platform>.

⁴⁵ *A/B Testing*, OPTIMIZELY, <https://www.optimizely.com/optimization-glossary/ab-testing/> (last visited Nov. 17, 2019).

⁴⁶ For example, putting credit card offers on the shopping cart page of Amazon transactions increased profits by tens of millions annually. See Ron Kohavi & Stefan Thomke, *The Surprising Power of Online Experiments*, HARV. BUS. REV. (2017), <https://hbr.org/2017/09/the-surprising-power-of-online-experiments>.

⁴⁷ Turck, *supra* note 42.

⁴⁸ See EVANS & SCHMALENSEE, *supra* note 4, at 40 (“[R]apidly improving technologies have driven matchmaker innovation by reducing the cost, increasing the speed, and expanding the scope of connections between platform sides.”).

and social impact.⁴⁹ The three companies described below are ones that many of us could not imagine living without, and they serve as exemplars of the strength and capabilities of platforms.⁵⁰

Google. Nearly ninety percent of the Internet searches in the United States are facilitated via a Google-controlled portal.⁵¹ Economically, it is one of the most successful companies in the world, with profits topping \$20 billion in 2016.⁵² Its revenue comes from connecting advertisers with consumers through highly efficient targeting.⁵³ This targeting is made possible by the massive amounts of data Google collects from its digital products, including Google search, Google Assistant, Gmail, and Google Maps, and its physical products, including Nest, Google Home, and Chromecast.⁵⁴

Uber. With a market cap in excess of \$50 billion and a market share approaching eighty percent, Uber is a leader among ridesharing platforms.⁵⁵ While not the first ridesharing company,

⁴⁹ The unprecedented ability to create and grow markets at exceptional speed is characterized as “turbocharging.” *Id.* at 40–45. This is enabled by powerful computer chips, the Internet, broadband, and modern programming languages. *Id.* As a result, one or two platforms will emerge in each modality, many of which will eventually go public. *See id.*

⁵⁰ This, of course, makes potential manipulation by these platforms, and ones like them, all the more concerning.

⁵¹ Greg Ip, *The Antitrust Case Against Facebook, Google and Amazon*, WALL ST. J. (Jan. 16, 2018, 11:52 AM), <https://www.wsj.com/articles/the-antitrust-case-against-facebook-google-amazon-and-apple-1516121561> (“In the U.S., Alphabet Inc.’s Google drives 89% of internet search.”). For a brief history of Google’s development, see generally John Battelle, *The Birth of Google*, WIRED (Aug. 01, 2005, 12:00 PM), <https://www.wired.com/2005/08/battelle/> (describing the origin of the PageRank algorithm).

⁵² SCOTT GALLOWAY, *THE FOUR: THE HIDDEN DNA OF AMAZON, APPLE, FACEBOOK, AND GOOGLE 5* (2017).

⁵³ *See* Jonathan Strickland & John Donovan, *How Google Works*, HOW STUFF WORKS, <https://computer.howstuffworks.com/internet/basics/google4.htm> (last visited Nov. 17, 2019) (explaining Google’s strategy of targeting users with advertisements for products or services they are likely to buy).

⁵⁴ *See generally* DOUGLAS C. SCHMIDT, *GOOGLE DATA COLLECTION* (2018), <https://digitalcontentnext.org/wp-content/uploads/2018/08/DCN-Google-Data-Collection-Paper.pdf> (detailing the extensive data collected from specific Google products).

⁵⁵ Kathryn Gessner, *Uber vs. Lyft: Who’s Tops in the Battle of U.S. Rideshare Companies*, SECOND MEASURE (Dec. 18, 2019), <https://secondmeasure.com/datapoints/rideshare-industry-overview/> (noting that Uber “dominates” the rideshare market and “wins out on rider engagement” compared to Lyft); *Uber Technologies, Inc.*, YAHOO! FIN., https://finance.yahoo.com/quote/UBER/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2x1LmNvbS8&guce_referrer_sig=AQAAANBH5N7UKIJhUuTuEmx8ZP7ZRLc0fXCaEpsiDC9YONgTqS9RdNCRwAfdnKdJ6gcF5ZhLSS5zQogZbDVmJdJ25Mr0vsefl3c5uH87McSNSRlosKXn-AGZB1pRvdtj93NmQllz4ziDpdzfWNAZPofCi7WmICSc08HliAoir5luNVk (last visited Dec. 29, 2019); *see also* Liz Hoffman, Greg Bensinger & Maureen Farrel, *Uber Proposals Value Company at \$120 Billion in a Possible IPO*, WALL ST. J. (Oct. 16, 2018, 1:28

Uber's commitment to growth—sometimes compromising profits and compliance with the law to do so—has resulted in its dominance.⁵⁶ Uber reduces transaction costs through its app, which helps drivers and riders connect with one another.⁵⁷ It also processes payments and maintains reputation systems that put pressure on both sets of users to interact appropriately and in good faith.⁵⁸ While Uber's initial success was in ridesharing, it has quickly expanded its offerings in a variety of directions, from the development of driverless cars to food delivery.⁵⁹ In particular, its food delivery service, Uber Eats, has become incredibly popular, quickly consuming first-moving firms.⁶⁰

Airbnb. Similar to Uber's model, Airbnb's platform facilitates short-term and informal accommodations between hosts and guests.⁶¹ Over the years, it has seen exponential growth—raising the number of rentals on its platform from 47,000 to 17 million in

PM), https://www.wsj.com/articles/uber-proposals-value-company-at-120-billion-in-a-possible-ipo-1539690343?mod=hp_lead_pos1 (describing Uber's early valuations and market share pre-IPO).

⁵⁶ See Eric Biber et al., *Regulating Business Innovation as Policy Disruption: From the Model T to Airbnb*, 70 VAND. L. REV. 1561, 1568–69 (2017) (explaining that platform economy companies like Uber regularly “[skirt] and [flout] existing federal, state, and local laws” and noting that Uber has taken business away from traditional taxis). In fact, Uber's dominance may be under threat from its main rival Lyft in the United States, due in part to Uber's questionable ethical culture. See Jefferson Graham, *Vows to ‘Delete Uber’ Weren’t Just Talk: Uber Loses Market Share to Lyft after Year of Scandal*, USA TODAY (May 15, 2018, 6:45 PM), <https://www.usatoday.com/story/tech/talkingtech/2018/05/15/uber-lost-market-share-lyft-after-year-scandals-emarketer-says/612348002/>.

⁵⁷ See Biber et al., *supra* note 56, at 1563 (noting that the use of the internet eliminates transaction costs and makes it easier for new markets, with platforms like Uber, to emerge).

⁵⁸ See *Account and Payment Options*, UBER, <https://help.uber.com/riders/section/account-and-payment-options?nodeId=463b843c-acfb-4c7b-b3bd-449812872a25> (last visited Nov. 17, 2019); *Rating a Driver*, UBER, <https://help.uber.com/riders/article/rating-a-driver?nodeId=478d7463-99cb-48ff-a81f-0ab227a1e267> (last visited Nov. 17, 2019) (explaining Uber's ratings process its goal of ensuring a “great experience” for drivers and passengers).

⁵⁹ See Avery Hartmans & Paige Leskin, *The History of How Uber Went from the Most Feared Startup in the World to its Massive IPO*, BUS. INSIDER (May 18, 2019, 2:42 PM), <https://www.businessinsider.com/ubers-history> (explaining the timeline of Uber's history and product offerings).

⁶⁰ See Ashley Sams, *Uber Eats Is Using AI to Surpass Its Competitors (And It's Working)*, MARKETING ARTIFICIAL INTELLIGENCE INST. (Oct. 3, 2018), <https://www.marketingaiinstitute.com/blog/uber-eats-artificial-intelligence> (noting that Uber Eats is “currently the fastest-growing business of its kind in America”).

⁶¹ See CJ Arlotta, *Airbnb Continues to Dominate Short-Term Rental Market*, HOTEL BUS. (Feb. 3, 2017), <http://hotelbusiness.com/Other/Airbnb-Continues-to-Dominate-Short-Term-Rental-Market/56245> (explaining that Airbnb has flexibility that traditional hotels do not have and noting that “Airbnb is outpacing the short-term rental market significantly”).

just five years—due to both standard and data network effects.⁶² Beyond helping hosts and guests find one another, it provides payment services,⁶³ insurance,⁶⁴ reputation systems,⁶⁵ and dispute resolution services, among other features.⁶⁶

Google, Uber, and Airbnb are just three of a vast array of platform companies.⁶⁷ Yet, they demonstrate what it is to be modern “titans of industry,” as they increase market share, amass wealth, and squeeze or buy out competition.⁶⁸ The intense speed at which they grow, coupled with their ability to capture entire markets, results in extremely durable monopolies. Users are left with little practical choice when considering competing platforms, if there are any.

C. PLATFORMS AS MEDIATORS

Dominant platforms are unmatched facilitators—that much is clear. But unlike traditional platforms, which allow transactions to occur in relative anonymity (think of the pre-eBay flea market buyer), digital platforms possess a unique ability to mediate their users. The term “mediate” describes how a platform identifies,

⁶² AIRBNB, AIRBNB SUMMER TRAVEL REPORT: 2015 (Sept. 9, 2015), <http://blog.airbnb.com/wp-content/uploads/2015/09/Airbnb-Summer-Travel-Report-1.pdf>.

⁶³ See *Payment*, AIRBNB, <https://www.airbnb.com/help/topic/1118/payment> (last visited Nov. 17, 2019).

⁶⁴ See *Airbnb’s Host Guarantee*, AIRBNB, <https://www.airbnb.com/guarantee> (last visited Nov. 17, 2019) (noting Airbnb’s policy of protecting hosts for up to \$1 million dollars in property damage).

⁶⁵ See *Reviews*, AIRBNB, <https://www.airbnb.com/help/topic/1137/reviews> (last visited Nov. 17, 2019) (explaining how Airbnb’s review system functions).

⁶⁶ See *Help*, AIRBNB, <https://www.airbnb.com/help/home> (last visited Nov. 17, 2019) (noting the issues with which users may need help).

⁶⁷ See EVANS & GAWER, *supra* note 9, at 14 (listing the four types of platform models, including transaction, innovation, integrated, and investment platforms).

⁶⁸ For example, Facebook acquired its social media competitor Instagram in 2012 for \$1 billion. See *Facebook to Acquire Instagram*, FACEBOOK NEWSROOM (Apr. 9, 2012), <https://newsroom.fb.com/news/2012/04/facebook-to-acquire-instagram/> (explaining that a goal of Facebook was to provide a strong photo sharing experience, which is the premise of Instagram); Evelyn M. Rusli, *Facebook Buys Instagram for \$1 Billion*, N.Y. TIMES (Apr. 9, 2012, 1:15 PM), <https://dealbook.nytimes.com/2012/04/09/facebook-buys-instagram-for-1-billion/> (“With Instagram, Facebook will get a formidable mobile player—an area that is seen as a weakness for the sprawling social network.”). And Google acquired YouTube in 2006 for \$1.65 billion. See Andrew Ross Sorkin & Jeremy W. Peters, *Google to Acquire YouTube for \$1.65 Billion*, N.Y. TIMES (Oct. 9, 2006), <https://www.nytimes.com/2006/10/09/business/09cnd-deal.html> (“The acquisition of the privately held YouTube will enable Google to thrive in one area of the Internet where it has so far failed to gain footing.”).

observes, and ultimately influences almost every choice a user makes when interacting on or with the platform.⁶⁹

Exactly how platforms mediate users is described in detail below,⁷⁰ but before moving to the specifics, it is important to understand who exactly is being mediated. Typically, there are two groups on a platform: supply- and demand-side users.⁷¹ Supply-side users sell or share a service, good, or information (the Uber driver, for example); demand-side users desire to acquire that service, good, or information (the Uber rider).⁷² Sellers comprise the supply-side of the equation, while demand-side users can be broken into everyday consumers and regulators.⁷³

1. *Supply-Side Mediation.*

Once supply-side users—Google’s advertisers or Airbnb’s hosts, for example—decide to use a certain platform, they are digitally “locked-in.” That is, if they want to transact on the platform, they must navigate the platform’s interface, which limits their ability to see information, access certain features, and get a sense of how the platform is curating their experience. For instance, Uber uses tactics to increase attention and desired behavior of its supply-side drivers.⁷⁴ These game-like techniques keep drivers on the road.⁷⁵ Uber’s app will connect drivers with their next fare before their previous fare is complete and alert them whenever they attempt to log off that they are about to hit an arbitrary target.⁷⁶ These

⁶⁹ Calo, *supra* note 20, at 1003–18.

⁷⁰ See *infra* Section III.B.

⁷¹ We recognize that there sometimes will be more than two groups on a platform. Facebook, for example, connects users and advertisers, users with users, and users wishing to sell things with users wishing to buy things on its marketplace. See EVANS & SCHMALENSEE, *supra* note 4, at 8.

⁷² Platform companies create two-sided or multi-sided marketplaces. Sometimes, services or things, especially user-generated content, are shared for free (e.g., Facebook users sharing pictures with each other). Other times, services or things are bought and sold (e.g., Uber drivers selling rides to passengers). For our purposes, we focus primarily on those transactions where users are buying and selling products or services.

⁷³ While legal and business scholars do not often categorize regulators as demand-side users, this is an oversight. As explained in Section IV.B, *infra*, avoiding regulation is inherent in most platform company business models, and all three groups—sellers, buyers, and regulators—are mediated by platforms and subjected to potential manipulation.

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

⁷⁵ *Id.*

⁷⁶ *Id.*

interface design choices play into drivers' tendencies to avoid losses,⁷⁷ overvalue objects or rewards that are of limited availability,⁷⁸ and repeat activities that follow irregular reward patterns.⁷⁹ This example demonstrates how the design and build of a platform's app or website can influence supply-side users' behavior, the essence of a mediated user experience.

2. Demand-Side Mediation.

Platform companies also mediate their demand-side users in a variety of ways. First, they employ teams of behavioral, social, and data scientists to experiment on users and design interfaces to maximize transactions and profitability.⁸⁰ Airbnb, for example, can run multiple experiments at the same time on millions of its demand-side renters, observing and recording every click, stare, and choice that is made on the company's website or app. It can then use the results of these experiments to tweak the design of the interface—adding features, adjusting text, improving graphics, and more—to encourage more transactions.⁸¹

Second, platforms can use individual and demographic data about demand-side users to modify design choices.⁸² This is possible because platforms' views into the lives of their users is surprisingly clear and deep, extending far beyond collecting data within the platform's app or website. With the use of cookies and background data collection, platforms can record information such as GPS coordinates, photos, and phone data to gain insights into each user's patterns and preferences.⁸³ Uber, for example, can charge different rates based on how loyal their users are (based on, for example, whether they frequently toggle back and forth between Uber and

⁷⁷ Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision under Risk*, 47 *ECONOMETRICA* 263, 269 (1979).

⁷⁸ ROBERT B. CIALDINI, *INFLUENCE: THE PSYCHOLOGY OF PERSUASION* 270 (Harper Business 2006).

⁷⁹ Ronald Lee, Peter Sturmey & Lanny Fields, *Schedule-Induced and Operant Mechanisms that Influence Response Variability: A Review and Implications for Future Investigations*, 57 *PSYCHOL. REC.* 429, 431 (2007).

⁸⁰ Scheiber, *supra* note 74.

⁸¹ Jan Overgoor, *Experiments at Airbnb*, *MEDIUM* (May 27, 2014), <https://medium.com/airbnb-engineering/experiments-at-airbnb-e2db3abf39e7>.

⁸² See Louise Matsakis, *Facebook's Targeted Ads Are More Complex than It Lets on*, *WIRED* (Apr. 25, 2019) (discussing how Facebook positions advertisements based on user data).

⁸³ See Kate Conger, *Uber Responds to Report that It Tracked Devices after Its App Was Deleted*, *TECHCRUNCH* (April 23, 2017), <https://techcrunch.com/2017/04/23/uber-responds-to-report-that-it-tracked-users-who-deleted-its-app/>.

Lyft), the per capita income of the neighborhood they are in, and whether or not they are using a company account or an elite credit card to pay for their ride.⁸⁴

In addition to these commonly thought of demand-side users, regulators can also be classified as part of this group. This is the case for two reasons. First, regulators are also members of the public who engage in many personal, social, and financial transactions on platforms. As such, they frequently come into contact with platforms as users—hardly a surprising fact given how difficult dominant platforms are to avoid in daily life.⁸⁵ Additionally, when regulators attempt to understand various platforms in an official capacity (i.e., when they are considering current or future regulation of platform companies), they most typically engage as demand-side users.⁸⁶

Platforms also have a unique ability to mediate regulators as demand-side users. Because platforms can profile and identify users, they are able to adjust their interfaces to mediate regulators' interactions with the platform.⁸⁷ This mediation can lead to changes in how regulators perceive platform operations, including the dangers these operations present.

To understand this phenomenon more completely, consider Uber's recent Greyball scandal.⁸⁸ In March 2017, the *New York Times* exposed a program designed and implemented by Uber that made drivers inaccessible to regulators.⁸⁹ Dubbed "Greyball" by the company, the program identified users who were likely to be law enforcement officers based on their location, phone type, social

⁸⁴ Shankar Vedantam & Maggie Penman, *This Is Your Brain on Uber*, NPR (May 17, 2016, 12:01 AM), <https://www.npr.org/2016/05/17/478266839/this-is-your-brain-on-uber>.

⁸⁵ See Kashmir Hill, *Life Without the Tech Giants*, GIZMODO (Jan. 22, 2019, 11:45 PM), <https://gizmodo.com/life-without-the-tech-giants-1830258056> (describing the near impossibility of living and working without interfacing with Facebook, Google, Apple, Microsoft, or Amazon).

⁸⁶ See, e.g., Mike Isaac, *How Uber Deceives the Authorities Worldwide*, N.Y. TIMES (Mar. 3, 2017), <https://www.nytimes.com/2017/03/03/technology/uber-greyball-program-evade-authorities.html> (describing efforts of law enforcement officials to inspect Uber's activities by posing as Uber users).

⁸⁷ See, e.g., *id.* (outlining Uber's ability to adjust its interface to mediate regulator interaction through the Greyball tool).

⁸⁸ See *id.*

⁸⁹ *Id.* ("The program, involving a tool called Greyball, uses data collected from the Uber app and other techniques to identify and circumvent officials who were trying to clamp down on the ride-hailing service.")

media history, and credit card data.⁹⁰ When users were flagged as law enforcement by Uber's algorithms, they were "Greyballed," meaning when the presumed law enforcement officers attempted to secure an Uber ride, they saw a law enforcement version of the app, which was populated with ghost cars.⁹¹ While Greyball started in some markets as a way to shield the location of Uber drivers from competitors, the program's purpose arguably evolved from one focused on competition to one focused on precluding sting operations as Uber moved into new markets—accomplished by manipulating what regulators saw when interacting with the platform in locations where regulators were active.⁹²

This type of conduct—using asymmetries of information afforded by a platform interface to avoid regulation—is seemingly an extreme example of mediation. But the degree of mediation is difficult to predict because regulators, and indeed the public, are constrained by the nature of platform design—everyone except the company lacks insight into the true nature of the platforms' conduct.

III. THE CONDUCT OF THE PLATFORM

Platform companies possess an incredible ability to mediate all sides of the digital markets they have constructed. But saying that platforms mediate users, even in potentially extreme ways, does not fully explain what makes platforms so powerful.⁹³ To do that, one must delve into the behavioral science at the heart of platform mediation. Understanding how platforms use technologically delivered choice architecture to influence user decisions reveals the true conduct of platforms and, in turn, provides a foundation for

⁹⁰ *Id.* (describing the techniques used to identify users as potential law enforcement officers, including examining users' credit card information for ties to police credit unions; reviewing users' social media profiles for law enforcement affiliations; monitoring use near government offices; and tracking local purchases of inexpensive mobile phones).

⁹¹ *Id.* ("When someone [who was identified as being linked to law enforcement] called a car, Uber could scramble a set of ghost cars in a fake version of the app for that person to see, or show that no cars were available.").

⁹² *Id.* ("Greyballing started as a way to scramble the locations of UberX drivers to prevent competitors from finding them But as Uber moved into new markets, its engineers saw that the same methods could be used to evade law enforcement.").

⁹³ See Matt Ward, *Why Is Amazon the Most Powerful Platform in the World?*, MEDIUM (Apr. 18, 2018), <https://thinkgrowth.org/product-to-platform-inside-amazons-dominance-bacef9e80585> (observing key successes in Amazon's development as a leading platform and noting that Amazon's "platform is the product").

assessing the question at this Article’s core: are platforms manipulating their users?

A. PLATFORMS’ MEDIATE THROUGH CHOICE ARCHITECTURE

The platform mediation examples above evidence a sophisticated use of “choice architecture”—the environment in which a choice is made.⁹⁴ When a choice is presented to a person, *how* it is presented can have great impacts on his or her decisionmaking.⁹⁵ The person or entity “responsib[le] for organizing the context in which people make decisions” is thus the “choice architect.”⁹⁶

Platform companies are unequivocally choice architects—and master ones at that—because they conceive of and create the entire universe of choice experienced by their users. But to appreciate how they fashion and control this universe, one must first consider the behavioral and cognitive science that underlies choice architecture itself.⁹⁷

Behavioral science has a long history tracing back to the work of Max Weber, B.F. Skinner, and others.⁹⁸ Over time, researchers in behavioral psychology have come to understand how systems of thinking and reasoning impact individual behavior.⁹⁹ Most recently, this work has been advanced and strengthened principally by two groundbreaking psychologists: Daniel Kahneman and Amos Tversky.¹⁰⁰ Kahneman and Tversky’s “dual system theory,” which

⁹⁴ THALER & SUNSTEIN, *supra* note 25, at 3–4, 6.

⁹⁵ *Id.* at 3.

⁹⁶ *Id.*

⁹⁷ Portions of the following background regarding the behavioral science underlying choice architecture and nudges first appeared in Todd Haugh, *Nudging Corporate Compliance*, 54 AM. BUS. L.J. 683, 699–700 (2017).

⁹⁸ See John Langton, *The Behavioural Theory of Evolution and the Weber Thesis*, 16 SOC. 341, 343 (1982) (discussing Max Weber’s reliance on behavioral psychology). See generally B.F. SKINNER, *SCIENCE AND HUMAN BEHAVIOR* (1953) (discussing behavioral psychology).

⁹⁹ See Jonathan St. B.T. Evans, *In Two Minds: Dual-Process Accounts of Reasoning*, 7 TRENDS IN COGNITIVE SCI. 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”).

¹⁰⁰ The term “groundbreaking” is no hyperbole here. Kahneman, a psychologist, was awarded the Nobel Prize in economics, making him one of the few non-economists to have received it. See Stephanie Denning, *How Kahneman Won The Nobel Prize*, FORBES (Dec. 28, 2016, 11:18 AM), <http://www.forbes.com/sites/stephaniedenning/2016/12/28/the-undoing-project-how-to-judge-a-book-by-its-cover/#7aa99a5a67d9>; Catherine Rampell, *Are Non-Economists Taking over the Economics Nobel?*, N.Y. TIMES (Oct. 14, 2009, 12:46 PM), <https://economix.blogs.nytimes.com/2009/10/14/are-non-economists-suddenly-taking-over-the-economics-nobel/>.

has been validated through numerous studies across disciplines, is considered one of the great advancements in understanding how people make decisions when facing uncertainty.¹⁰¹

Dual system theory posits that there are two separate cognitive systems underlying reasoning and decisionmaking. The intuitive process, or System 1, is “fast, automatic, effortless, associative, and often emotionally charged.”¹⁰² Because it operates by associative memory, it is “governed by habit” and “therefore difficult to control or modify.”¹⁰³ This system of thinking—sometimes called the Automatic System—often does not seem like thinking at all.¹⁰⁴ The reason is that a lot happens through System 1 all at once. The mind offers associations rapidly, one idea being evoked after another, all linked effortlessly.¹⁰⁵ The speed and ease with which System 1 operates means that “most of the work of associative thinking is silent, hidden from our conscious selves.”¹⁰⁶ In fact, dual system theorists generally agree that the processes of System 1 are so “rapid, parallel and automatic” that “only their final product is posted in [our] consciousness.”¹⁰⁷ Essentially, this type of cognition is instinctive, making behaviors feel as if they are “innately programmed.”¹⁰⁸

In contrast, System 2, or the reasoning process, operates more slowly and carefully.¹⁰⁹ It is “serial, effortful, and deliberately controlled,” subject to logic and rules.¹¹⁰ System 2—also referred to

¹⁰¹ Daniel Kahneman, *Maps of Bounded Rationality: Psychology for Behavioral Economics*, 93 AM. ECON. REV. 1449, 1450 (2003); Alian Samson, *Selected Behavioral Science Concepts*, in THE BEHAVIORAL ECONOMICS GUIDE 2016, at 101, 106 (Alain Samson ed., 2016), <http://www.behavioraleconomics.com/BEGuide2016.pdf>; see also YUVAL FELDMAN, THE LAW OF GOOD PEOPLE: CHALLENGING STATES’ ABILITY TO REGULATE HUMAN BEHAVIOR 2 (2018) (explaining that Kahneman’s concept of two systems of reasoning is “at the core of extensive research in behavioral law and economics”).

¹⁰² Kahneman, *supra* note 101, at 1451. System 1 is “actually not . . . a single system, but a set of sub-systems that operate with some autonomy.” Evans, *supra* note 99, at 454.

¹⁰³ Kahneman, *supra* note 101, at 1451.

¹⁰⁴ THALER & SUNSTEIN, *supra* note 25, at 19.

¹⁰⁵ DANIEL KAHNEMAN, THINKING, FAST AND SLOW 52 (2011).

¹⁰⁶ *Id.*

¹⁰⁷ Evans, *supra* note 99, at 454.

¹⁰⁸ *Id.*

¹⁰⁹ See Keith E. Stanovich & Richard F. West, *Individual Differences in Reasoning: Implications for the Rationality Debate?*, 23 BEHAV. & BRAIN SCI. 645, 658–59 (2000) (discussing the differences between System 1 and System 2); Cass R. Sunstein, *Do People Like Nudges?*, 68 ADMIN. L. REV. 177, 205 (2016) (describing System 2 as “slow, calculative, and deliberative”).

¹¹⁰ Kahneman, *supra* note 101, at 1451.

as the Reflective System—is engaged when we use thought in a highly organized manner—for example, when we solve a complex math problem, write a paragraph, or consider pros and cons to make a tough decision.¹¹¹ Indeed, this system is able to engage in abstract hypothetical thinking that its counterpart cannot.¹¹² Not surprisingly, then, System 2 requires significantly more cognitive load than System 1.¹¹³ A person using their System 2 processes at “full tilt” can only do so for a very short time.¹¹⁴ Yet this effort is worth it, because System 2 is how we thoughtfully deal with new tasks when there are no easy associations to make.¹¹⁵ Notably, this type of thinking is what gives us the feeling and “experience of agency, autonomy, and volition,”¹¹⁶ making System 2 a “distinctly human facility . . . of great importance.”¹¹⁷ The features of each thinking system are shown in Table 1 below.¹¹⁸

Table 1: Dual Systems of Thinking

System 1 – Automatic thinking	System 2 – Reflective thinking
Associative	Deductive
Effortless	Effortful
Uncontrolled	Controlled
Fast	Slow
Emotional	Rule-following
Subconscious	Self-aware
Evolutionarily old	Evolutionarily recent
Shared with animals	Distinctively human
Non-linguistic	Linguistic
Low cognitive load	High cognitive load

¹¹¹ THALER & SUNSTEIN, *supra* note 25, at 20.

¹¹² Evans, *supra* note 99, at 454.

¹¹³ Sunstein, *supra* note 109, at 205. Heightened cognitive load is likely a product of the brain sifting through working memory, which is limited.

¹¹⁴ KAHNEMAN, *supra* note 105, at 31.

¹¹⁵ *Id.* at 36–37. Part of this process is done by constructing mental models or simulations, i.e., hypothetical thinking. Evans, *supra* note 99, at 454.

¹¹⁶ Pelle Guldborg Hansen & Andreas Maaløe Jespersen, *Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy*, 4 EUR. J. RISK REG. 3, 13 (2013); *see also* KAHNEMAN, *supra* note 105, at 21 (explaining that “we identify with System 2” which has “explicit beliefs” and makes “deliberate choices”).

¹¹⁷ Evans, *supra* note 99, at 454.

¹¹⁸ THALER & SUNSTEIN, *supra* note 25, at 19–22.

The above might seem to suggest that System 2 is the only valid way to make a decision. After all, it is deductive and careful, capable of abstract reasoning—the opposite of its counterpart. But that is not necessarily true. Imagine if we had to make a deliberate choice for each one of our daily activities. Because System 1 is effortless and highly efficient, it is suitable for making the vast majority of these routine decisions.¹¹⁹ And, in fact, there is some evidence that System 1 thinking can lead to better decisions even in non-routine contexts.¹²⁰

Yet for most of our difficult and important decisions, particularly those we have not encountered before, System 2 processes are required to ensure a thoughtful, and likely more accurate, outcome.¹²¹ There is, however, a problem. Because of the greater cognitive load required to employ System 2, it is often supplanted by the less effortful System 1.¹²² This occurs because when overall mental effort is limited—which it always is in some way—effortful mental processes disrupt each other, while effortless ones “neither cause nor suffer much interference when combined with other tasks.”¹²³ Thus, System 1 reactive thinking tends to proliferate anytime we are under significant cognitive load.¹²⁴

This last point hints at the juxtaposition between the actual and perceived relationship between these two thinking systems. While most people genuinely believe that they make decisions deliberately, research demonstrates otherwise—that can only be true for a small subset of our decisions. Anytime our thinking is taxed by effort, rushed, or otherwise overwhelmed, we are

¹¹⁹ See KAHNEMAN, *supra* note 105, at 36 (describing when some tasks are effortful).

¹²⁰ This appears to be limited to situations in which there may be gains in decisionmaking efficiency without sacrificing analytical quality, which may happen as expertise increases and makes even difficult decisions somewhat intuitive. See Katherine L. Milkman et al., *How Can Decisionmaking Be Improved?*, 4 PERSP. PSYCHOL. SCI. 379, 380 (2009) (listing studies finding System 1 thinking to be superior, including in some business situations and when making some emotional choices).

¹²¹ THALER & SUNSTEIN, *supra* note 25, at 21–22.

¹²² See Kahneman, *supra* note 101, at 1451 (discussing how System 2 may be disrupted by System 1).

¹²³ See *id.* (noting the quick types of decisions we typically make while multitasking). Kahneman calls System 2 “lazy.” KAHNEMAN, *supra* note 105, at 44.

¹²⁴ KAHNEMAN, *supra* note 105, at 44; see also John Beshears & Francesca Gino, *Leaders as Decision Architects*, HARV. BUS. REV. (2015), <https://hbr.org/2015/05/leaders-as-decision-architects> (“As the cognitive energy needed to exercise System 2 is depleted, problems of bias and inadequate motivation may arise.”).

susceptible to takeover by the automatic system.¹²⁵ In other words, because the brain is continually offloading decisionmaking as it economizes mental processing, System 1 becomes the dominant mode of thinking. This results in decisions, even when critically important, that are often subject to error.¹²⁶

It should come as no surprise, then, that which thinking system is activated can have profound effects on decisionmaking and behavior.¹²⁷ This is what choice architecture is all about. By altering the context in which choice is made, we can alter the choice itself—and the behavior that flows from it.

Consider an example drawn from the public policy sphere. Enrolling in a 401(k) plan is an obstacle for many Americans, who on the whole do not save enough for retirement.¹²⁸ Roughly thirty percent of eligible employees fail to enroll in their company's 401(k) plans.¹²⁹ Behavioral economics researchers studying the problem found that the default enrollment provisions for many 401(k) plans were “opt-in,” meaning that employees had to fill out forms and make complicated investment choices to begin saving.¹³⁰ Because these tasks were “a headache[,] . . . many employees just put them aside.”¹³¹ The choice architecture—the context in which the enrollment choice was being made—was not conducive to saving.

To put this in terms of dual system theory, for the vast majority of employees who failed to enroll in a savings plan, their System 1 thinking was dominant when confronted with the decision to enroll. Employees reacted to the prospect of opting in by ignoring the decision or delaying it. Essentially, their reflective system was already overtaxed or became so when considering the enrollment process, and so the decision was left to the automatic system.

¹²⁵ See KAHNEMAN, *supra* note 105, at 31, 41 (explaining that people who are “cognitively busy” are less able to control their impulses).

¹²⁶ See Kahneman, *supra* note 101, at 1467 (citing experiments showing that “people mostly do not think very hard and that System 2 monitors judgments quite lightly”). More troubling is that decisions arrived at through the automatic system are often supported after-the-fact with the reflective system—in essence, we use System 2 to justify our System 1 conclusions. See KAHNEMAN, *supra* note 105, at 45.

¹²⁷ See Milkman et al., *supra* note 120, at 381 (noting that System 2 thinking may reduce bias).

¹²⁸ THALER & SUNSTEIN, *supra* note 25, at 103, 106–07.

¹²⁹ *Id.* at 107.

¹³⁰ *Id.* at 108–09.

¹³¹ *Id.* at 109.

Unfortunately, enrolling in a 401(k) is a task that requires a System 2 mind to complete.

So, researchers changed the choice architecture. They altered 401(k) plans' enrollment provisions to make them "opt-out"; employees were automatically enrolled and could only elect to stop saving by filling out a form.¹³² Under this regime, enrollment rates skyrocketed, up to 98 percent in some cases.¹³³ Changing the enrollment regime—flipping the default—allowed System 1 thinking, which was already automatically engaged and dominant in the decision, to help employees save. In fact, a System 2 override was now required to *not* save for retirement. Structuring choice in this manner helped employees to make the optimal savings decision, one that increased their welfare long-term.

Although the concept of choice architecture has been around for many years,¹³⁴ it did not gain widespread acceptance until the 2008 publication of *Nudge: Improving Decisions About Health, Wealth and Happiness* by behavioral economist Richard Thaler and legal scholar Cass Sunstein.¹³⁵ In *Nudge*, Thaler and Sunstein made the affirmative case for using choice architecture to alter individual behavior.¹³⁶ They argued that structuring choice deliberately could help people make better decisions and cure irrational biases, which would benefit themselves and society.¹³⁷ Thaler and Sunstein encouraged choice architects, particularly in the public policy space, to frame choice in a manner that "alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives."¹³⁸ They labeled these devices *nudges*.¹³⁹

The term "nudge" has entered the popular lexicon since the publishing of Thaler and Sunstein's book and now serves as a

¹³² *Id.*

¹³³ *Id.*

¹³⁴ See, e.g., FELDMAN, *supra* note 101, at 89 (describing choice architecture approaches of debiasing and framing); see also Eric J. Johnson & Daniel Goldstein, *Do Defaults Save Lives?*, 302 SCI. MAG. 1338, 1338 (2003) (explaining how defaults can influence choice in multiple ways).

¹³⁵ See generally THALER & SUNSTEIN, *supra* note 25.

¹³⁶ See *id.* at 3–4, 6 (explaining that choice architects should be "self-consciously attempting to move people in directions that will make their lives better").

¹³⁷ *Id.* at 6.

¹³⁸ *Id.* at 3, 6.

¹³⁹ *Id.* at 4.

blanket term for many aspects of choice architecture.¹⁴⁰ But as originally conceptualized, a nudge possesses three necessary attributes. First, a nudge has to preserve freedom of choice.¹⁴¹ As Sunstein puts it, “[i]f an intervention imposes significant material costs on choosers, it might of course be justified[,] but it is not a nudge.”¹⁴² Thus, bans and mandates are not nudges, nor are many other familiar legal and regulatory tools like subsidies, taxes, fines, or criminal penalties.¹⁴³ In order to be a true nudge, a choice intervention must “allow [individuals] to go their own way.”¹⁴⁴ Choice architects intent on changing behavior are left with the tools of reminders, warnings, prompts, anchors, frames, and default rules.¹⁴⁵

Second, nudges must increase the welfare of the people subject to them. Thaler and Sunstein are not naïve here; they understand that nudging may be used to do harm in society.¹⁴⁶ But under their conception, an intrinsic quality of a nudge is that it intends to do good and not be “employed to sway people to make bad decisions they will later regret.”¹⁴⁷ This is achieved by choice architects designing nudges that help people make the decisions they otherwise would if they were to “pa[y] full attention and possess[] complete information, unlimited cognitive abilities, and complete self-control.”¹⁴⁸ Put another way, nudges should aid individuals in becoming more rational decisionmakers, thereby aligning their choices with their long-term self-interests.¹⁴⁹ The concept of nudging, then, is best encapsulated as follows:

¹⁴⁰ Evan Selinger & Kyle P. Whyte, *Nudging Cannot Solve Complex Policy Problems*, 3 EURO. J. RISK REG. 26, 26 (2012).

¹⁴¹ Sunstein, *supra* note 109, at 177.

¹⁴² CASS R. SUNSTEIN, *THE ETHICS OF INFLUENCE: GOVERNMENT IN THE AGE OF BEHAVIORAL SCIENCE* 21 (2016).

¹⁴³ THALER & SUNSTEIN, *supra* note 25, at 6; Sunstein, *supra* note 109, at 179.

¹⁴⁴ Sunstein, *supra* note 109, at 178.

¹⁴⁵ *Id.* at 184.

¹⁴⁶ *Id.* at 196; THALER & SUNSTEIN, *supra* note 25, at 239–41.

¹⁴⁷ Richard H. Thaler, *The Power of Nudges, for Good and Bad*, N.Y. TIMES (Oct. 31, 2015), <http://www.nytimes.com/2015/11/01/upshot/the-power-of-nudges-for-good-and-bad.html>.

Thaler and Sunstein highlight the special dangers of private nudges, although not necessarily those employed by platforms per se. See THALER & SUNSTEIN, *supra* note 25, at 239–40 (discussing private nudges aimed at consumers).

¹⁴⁸ THALER & SUNSTEIN, *supra* note 25, at 5.

¹⁴⁹ See *id.* at 6; see also On Amir & Orly Lobel, *Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy*, 108 COLUM. L. REV. 2098, 2106–07 (2008) (discussing how nudges urge people to make more efficient decisions); Meredith J. Harbach, *Nudging Parents*, 19 J. GENDER, RACE & JUST. 73, 89–90 (2016).

Nudges are simple interventions designed to promote desirable choices . . . by taking advantage of psychology . . . [including] a growing list of mental shortcuts, cognitive biases, and psychological quirks that subconsciously influence, and often sabotage, our decisions. Nudges are designed to either harness or neutralize these tendencies, and help us make better decisions, by subtly altering the decision-making process or the mental context in which the decision is made.¹⁵⁰

Before moving on, one critical question remains: who determines what is a desirable choice or a better decision, and by what measure? While some believe this fundamental question has not been adequately answered,¹⁵¹ Thaler and Sunstein attempt to preempt it by defining nudges as interventions that influence choices to make individuals better off “*as judged by themselves*.”¹⁵² This standard, they argue, coupled with the ease in which nudges can be avoided, makes nudges autonomy-respecting.¹⁵³

Choice architecture that fails to conform to these standards might be characterized as “sludge.”¹⁵⁴ This is the use of behavioral science tools to “muck[] things up and make[] wise decision-making and prosocial activity more difficult.”¹⁵⁵ Sludge can take the forms of nudging people in a way that discourages behavior that is in their best interests or nudging to encourage “self-defeating behavior.”¹⁵⁶

¹⁵⁰ Scott Killingsworth, *Behavioral Ethics: From Nudges to Norms*, BRYAN CAVE LEIGHTON PAISNER 1 (2017), <https://www.bclplaw.com/images/content/8/9/v2/89927/2017-01-jan-feb-ethikos-killingsworth.pdf> (footnote omitted).

¹⁵¹ For example, a libertarian blog in the United Kingdom declared a “war on nudge” based largely on this issue, with many academics following suit. See Hansen & Jespersen, *supra* note 116, at 4.

¹⁵² THALER & SUNSTEIN, *supra* note 25, at 5.

¹⁵³ *Id.* at 6.

¹⁵⁴ Richard H. Thaler, *Nudge, Not Sludge*, 361 SCI. 431, 431 (2018).

¹⁵⁵ *Id.* Thaler provides a series of private sludge examples in a recent editorial, commenting that he sees “much more troubling behavior” in this sector than in the public policy sphere. Thaler, *supra* note 147; see also Robert J. Shiller, *Faith in an Unregulated Free Market? Don't Fall for It*, N.Y. TIMES (Oct. 9, 2015), <https://www.nytimes.com/2015/10/11/upshot/faith-in-an-unregulated-free-market-dont-fall-for-it.html?module=inline> (describing widespread practices of companies manipulating customers driven by the existence of market forces).

¹⁵⁶ See *id.*; see also Thaler, *supra* note 147 (arguing that “we need to be sure that [nudges] aren't being employed to sway people to make bad decisions that they will later regret”).

In the public policy space, for example, Thaler cites the Internal Revenue Service's requirement that taxpayers fill out a lengthy form to claim the earned income tax credit, despite the agency already possessing the necessary information to provide the credit automatically.¹⁵⁷ As a result, many eligible taxpayers fail to get a tax break that Congress intended as a way to help the working poor.¹⁵⁸ In the private sector, sludge is present when firms "encourage buyers to order [goods] to maximize profits rather than to improve the buyers' welfare."¹⁵⁹ One common example is when a store induces a purchase by offering a rebate, but requires a complicated procedure to collect it (e.g., mailing in a form, a copy of the receipt, and the bar code from the package), causing the consumer to give up before claiming what is ultimately only an "illusion of a rebate."¹⁶⁰ Thaler terms these activities "nudging for evil."¹⁶¹

B. PLATFORMS AS SOPHISTICATED CHOICE ARCHITECTS

With that background, let us turn to how platform companies use choice architecture to nudge mediated users. Nowhere has nudging been embraced more than among platform companies.¹⁶² Be it a function of mission, technological prowess, or fortuitous timing, platforms have incorporated this behavioral tool in almost all aspects of their business models.¹⁶³ The following provides a series

¹⁵⁷ See Thaler, *supra* note 154, at 431.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ See *id.*; see also *supra* note 155 and accompanying text.

¹⁶² See Haugh, *supra* note 97, at 684 ("Because nudges are by definition simple interventions that have the ability to change behavior—possibly of many people at low cost—companies have also taken notice.").

¹⁶³ The examples to follow adequately support this claim, but another metric does as well: the number of behavioral scientists employed by platform companies. Although hard data is difficult to come by, the number for many platforms is in the dozens and growing. See Kristen Berman, *How Do I Get into Behavioral Economics?*, PEOPLESCIENCE (Nov. 29, 2018), <https://peoplescience.maritz.com/Articles/2018/How-Do-I-Get-Into-Behavioural-Economics> (noting that several companies, including Google, Walmart, and Uber, have behavioral science groups). Google has been particularly outspoken regarding its use of behavioral science and nudging. See Evan Nesterak, *Google re:Work: Shaping the Future of HR*, BEHAV. SCIENTIST (Dec. 2, 2014), <http://behavioralscientist.org/google-rework-shaping-future-hr/> (explaining Google's "rich history of incorporating behavioral science research into its People Operations (Google's iteration of Human Resources)" and reporting that the company employs "industrial and organizational psychologists, decision scientists, and organizational sociologists").

of examples drawn from the platforms described in Section II.B, giving an insight into how technologically amplified choice architecture is inherent to user mediation. While there are dozens of available examples, only one or two are highlighted for each platform.

1. *Google.*

Supply side. Essential to many supply-side users' success in reaching demand-side customers is their search rank on Google. This is the placement of a website in Google's search results when users type in certain words or phrases (e.g., "single speed bike" or "top restaurants in Chicago").¹⁶⁴ Because only six percent of all clicks on Google come from the second page of search results, search rank—namely, getting on the first page—is critical for advertisers.¹⁶⁵ Google, however, refuses to reveal many of the key inputs its algorithms use to rank websites. It therefore constrains how supply-side users can use the platform to get their results to the top of the platform's lists.¹⁶⁶

Relatedly, Google has been accused of burying competitors in its search results.¹⁶⁷ For example, Kayak.com asserted that Google lowered Kayak's placement in favor of its own travel services, presumably driving links to its own site, despite Kayak's popularity.¹⁶⁸ In contrast, when Google wants advertisers to pay more for local user traffic,¹⁶⁹ it intentionally drives down its own review pages (similar to TripAdvisor or Yelp) to increase revenue

¹⁶⁴ Kelly Shelton, *The Value of Search Results Rankings*, FORBES (Oct. 30, 2017, 8:00 AM), <https://www.forbes.com/sites/forbesagencycouncil/2017/10/30/the-value-of-search-results-rankings/#7feb713544d3>.

¹⁶⁵ *See generally id.* (explaining how websites appear on each search page). Google allows for only ten non-advertisement websites to appear on each search page. *Id.*

¹⁶⁶ Indeed, there is an entire cottage industry for search engine optimization, which helps supply-side users improve their rankings on Google. *See generally* Baruch Labunski, *How Best to Position Your Company to Rank Well on Google*, FORBES (May 17, 2018, 9:00 AM), <https://www.forbes.com/sites/theyec/2018/05/17/how-best-to-position-your-company-to-rank-well-on-google/#3fec84661fa9> (describing a consultant's strategies for improving placement on Google).

¹⁶⁷ *See generally* Nina Gregory, *Is Google Playing Fair with Its Search Results?*, NPR (June 27, 2011, 12:00 PM), <https://www.npr.org/2011/06/27/137448879/ftc-searches-google-in-antitrust-investigation>.

¹⁶⁸ *See id.*

¹⁶⁹ Google's revenue is often generated on a per-click basis. *See generally* Brad Smith, *How Much Does Google Ads Cost? Here's How to Create Your Budget*, ADESPRESSO (Nov. 27, 2017), <https://adespresso.com/blog/how-much-does-google-adwords-cost/> (describing budgeting for Google Ad Words).

from local advertisers.¹⁷⁰ Since advertisers have little say about how Google ranks them, they must play Google’s game through its interfaces to “optimize” their search results and reduce costs at the same time. In this way, Google is nudging, rather forcefully, how its supply-side users interact with the platform, often in a nontransparent manner.

Demand side. On its web-based email service, Gmail, Google nudges users to respond to certain emails that its artificial intelligence algorithms deem important.¹⁷¹ To do this, Google scans user emails for those that likely warrant a response and pushes them to the top of users’ email queues.¹⁷² Next to the emails’ subject lines, Google asks whether or not the user would like to respond.¹⁷³ Google does this, presumably, because it wants to make Gmail more user-friendly, which in turn will make Gmail users more loyal to the platform. This loyalty improves Google’s data advantage and allows for better profiling and efficient access for marketers. This is a classic reminder-type nudge, and it is also highly transparent. In fact, that is the point—to prompt Gmail users to think more about their emails and the platform itself.

2. Uber.

Supply side. As mentioned in Section II.B, Uber designs its choice architecture in surprising ways. It gamifies drivers’ experiences on the app and modifies the screens drivers see according to the company’s preferences.¹⁷⁴ For example, Uber can make it appear that certain zones are “hotspots,” which leads drivers to believe that by going there, they will receive more ride requests and thus more income.¹⁷⁵ Drivers, however, are often disappointed to find no riders

¹⁷⁰ See Ethan Wolff-Mann, *Google Might Be Hiding the Fact that Its Own Reviews Are Shoddy*, YAHOO! FIN. (Aug. 23, 2018), <https://finance.yahoo.com/news/google-might-hiding-fact-reviews-shoddy-135640955.html> (“[L]ocal search makes up a significant amount of the queries that Google fields every day, and keeping users engaged on the platform rather than off it presents opportunities for more monetization.”).

¹⁷¹ See *Gmail Will Now Remind You to Respond*, G SUITE UPDATES (May 14, 2018), <https://gsuiteupdates.googleblog.com/2018/05/gmail-remind-respond.html> (introducing Google’s Gmail nudging tool); Chuong Nguyen, *Need A Nudge? Gmail’s New Email Reminder System Goes Live*, DIGITAL TRENDS (May 14, 2018, 6:49 PM), <https://www.digitaltrends.com/computing/google-gmail-nudge/> (same).

¹⁷² See *Gmail Will Now Remind You to Respond*, *supra* note 171.

¹⁷³ See *id.*

¹⁷⁴ See Scheiber, *supra* note 74.

¹⁷⁵ See *id.*

at the ready when they arrive at the given locations.¹⁷⁶ Apparently, the drivers' presence only helps Uber reduce wait times for riders, which improves riders' experiences at the expense of drivers.¹⁷⁷

Uber views their mediation techniques as a benefit to drivers. The company claims it has made work feel like a game.¹⁷⁸ However, not all of these techniques are beneficial both in terms of income and safety. What if, for example, an Uber driver gets fatigued because they are committed to winning Uber's games?¹⁷⁹ Despite this, Uber spokesperson Michael Amodeo has stated that the company "incentivize[s drivers] to drive more But any driver can stop work literally at the tap of a button—the decision whether or not to drive is 100 percent theirs."¹⁸⁰ While true in a literal sense, it is an oversimplification that ignores the powerful behavioral science underlying a gamification nudge, which elicits a System 1 response. This type of mediation takes advantage of a platform-created reward system that fosters a feeling of loss to the driver by not completing the game.

Demand side. Uber collects incredible amounts of data on its users both on and off the platform. Not only can Uber easily identify location and assess reputation, it has additional information about everything from phone battery levels and hardware models to your mobile network information.¹⁸¹ This "hidden" data can be used to predict how much users would be willing to pay for a ride through its "surge pricing" feature.¹⁸² For example, if a customer is a young woman, with a low phone battery, in an area with high crime levels,

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

¹⁷⁸ See *id.*; see also Catherine Shu, *Uber Responds to the New York Times Article about How It Psychologically Manipulates Drivers*, TECHCRUNCH (Apr. 6, 2017, 12:51 AM), <https://techcrunch.com/2017/04/05/uber-responds-to-the-new-york-times-article-about-how-it-psychologically-manipulates-drivers/> (describing Uber's defensive response).

¹⁷⁹ See Scheiber, *supra* note 74 ("Over the past 20 years, behavioral economists have found evidence for a phenomenon known as income targeting, in which workers who can decide how long to work each day, like cabdrivers, do so with a goal in mind—say, \$100—much the way marathon runners try to get their time below four hours or three hours."); see also Sarah Mason, *High Score, Low Pay: Why the Gig-Economy Loves Gamification*, GUARDIAN (Nov. 20, 2018), <https://www.theguardian.com/business/2018/nov/20/high-score-low-pay-gamification-lyft-uber-drivers-ride-hailing-gig-economy> (describing how Lyft drivers can become hooked to game elements in their apps including checking their customer rating score and completing bonus "challenges" for a certain number of rides in a set time period).

¹⁸⁰ Scheiber, *supra* note 74.

¹⁸¹ Vedantam & Penman, *supra* note 84.

¹⁸² *Id.* Uber, however, denies using these capabilities to influence rider decisions. *Id.*

Uber has the ability to increase the price it will charge her for a ride. Furthermore, Uber recently applied for a patent to detect whether or not passengers are drunk based on how they spell words, the movement of their phone, and their location.¹⁸³ This type of nudging for higher fares is obviously targeting the automatic thinking system; it is attempting to trigger a purchasing decision based on fear for personal safety or impaired judgment.

Greyball, discussed in Section II.C.2, also shows how Uber's choice architecture can influence regulators as demand-side users.¹⁸⁴ Similar to Google's conduct with advertisers, Uber created a type of choice architecture that was extremely difficult to avoid and completely altered user behavior by ensuring non-use of the company's product by subterfuge.¹⁸⁵

When the *New York Times* uncovered Uber's activities, the company admitted to it, and the public—not to mention the Justice Department—was outraged.¹⁸⁶ In fact, the city of London did not renew Uber's license to operate, in part because of the company's practices.¹⁸⁷

3. Airbnb.

Supply side. Airbnb is a master at experimenting on users to increase desired behavior and facilitate more transactions.¹⁸⁸ For example, the home-sharing company consistently tests the way it

¹⁸³ Jordan Crook, *Uber Applies for Patent that Would Detect Drunk Passengers*, TECHCRUNCH (June 11, 2018, 8:45 AM), <https://techcrunch.com/2018/06/11/uber-applies-for-patent-that-would-detect-drunk-passengers/> (describing Uber's attempts to learn more about passengers, including through a patent application).

¹⁸⁴ See *supra* notes 88–92 and accompanying text.

¹⁸⁵ See *supra* notes 88–92 and accompanying text.

¹⁸⁶ Marco della Cava, *Uber Admits Its Ghost Driver 'Greyball' Tool Was Used to Thwart Regulators, Vows to Stop*, USA TODAY (Mar. 9, 2017, 7:08 AM), <https://www.usatoday.com/story/tech/talkingtech/2017/03/08/uber-stop-using-greyball-target-regulators/98930282/>; Elizabeth Dwoskin & Craig Timberg, *Justice Department Opens Criminal Probe into Uber*, WASH. POST (May 4, 2017, 9:41 PM), <https://www.washingtonpost.com/news/the-switch/wp/2017/05/04/justice-department-opens-criminal-probe-into-uber/>.

¹⁸⁷ *Licensing Decision on Uber London Limited*, TRANSPORT FOR LONDON (Sept. 22, 2017), <https://tfl.gov.uk/info-for/media/press-releases/2017/september/licensing-decision-on-uber-london-limited?intemp=50167/> (“[Transportation for London] considers that Uber's approach and conduct demonstrate a lack of corporate responsibility in relation to a number of issues which have potential public safety and security implications.”).

¹⁸⁸ Gaurav Makkar, *Airbnb and the Art of Behavioral Influence*, UX COLLECTIVE (Sept. 7, 2018), <https://uxdesign.cc/how-airbnb-com-uses-behavioral-psychology-123dd50f5cf> (describing Airbnb's efforts to influence consumer behavior).

presents information to hosts to determine its business strategies.¹⁸⁹ Are hosts likely to lower their prices if they see that demand is low in their town? Does it encourage hosts to increase their availability if they can see how much they could earn for doing so, or how much money they are leaving on the table? Furthermore, similar to Uber’s gamification techniques, Airbnb creates various achievements, such as “superhost status,” to induce hosts to increase amenities, respond quickly to guest requests, and obtain higher reviews—all nudges aimed at increasing System 1 decisionmaking.¹⁹⁰

Demand side. Like Uber, Airbnb modifies its choice architecture to prevent regulators from seeing the locations of rental properties.¹⁹¹ This makes it difficult for housing inspectors to assess whether or not a host is properly licensed or in compliance with zoning and housing requirements.¹⁹² Such obfuscation deters regulators from holding supply-side users accountable for their unlawful actions. It also allows Airbnb to avoid lawsuits, because the platform appears to be a mere facilitator, as opposed to taking a more active role in mediating transactions.

C. A FRAMEWORK TO EVALUATE MANIPULATIVE PLATFORM NUDGING

The above examples confirm a number of things. First, choice architecture is ubiquitous within platform conduct. Virtually every aspect of a user’s experience is mediated through technology that influences choice. Second, the behavioral tools used by platforms appear to sit on a continuum, ranging from good nudges that benefit users to potentially “evil” sludge.¹⁹³ But how does one evaluate the

¹⁸⁹ *Id.*

¹⁹⁰ See Katie Benner, *Airbnb Tries to Behave More Like a Hotel*, N.Y. TIMES (June 17, 2017), <https://www.nytimes.com/2017/06/17/technology/airbnbs-hosts-professional-hotels.html> (providing examples of how hosts feel pressured by Airbnb to provide their services in particular ways).

¹⁹¹ See Paris Martineau, *Inside Airbnb’s “Guerrilla War” Against Local Governments*, WIRED (Mar. 20, 2019, 7:00 AM), <https://www.wired.com/story/inside-airbnbs-guerrilla-war-against-local-governments/> (“[T]he company periodically tweaks the site in ways that impede tax collectors and enforcement agencies.”).

¹⁹² See, e.g., *id.*; First Amended Complaint of Airbnb at ¶ 52, *Airbnb, Inc. v. City of Santa Monica*, No. 2:16-cv-6645-ODW-AFM, 2017 WL 9565588 (C.D. Cal. Dec. 13, 2017); First Amended Complaint of Airbnb at ¶ 54–56, *Airbnb, Inc. v. City & Cty. of San Francisco*, No. 3:16-cv-03615-JD, 2016 WL 8808846 (N.D. Cal. Sept. 6, 2016).

¹⁹³ Thaler, *supra* note 154, at 431 (discussing the difference between “helpful nudges” and “nudging for evil”).

difference in a disciplined way to answer this Article's central question: whether platforms are manipulating their users?

The only way to do so is by considering the specific uses of choice architecture by platform companies from a grounded normative standpoint. This assessment must consider the "autonomy costs" platform nudges place on users and balance those costs against the beneficial ends to users that such nudges may afford.¹⁹⁴ If certain nudges are effective at increasing positive user experience and overall welfare, then they may be justified even if they reduce user autonomy. This analysis results in a framework that allows stakeholders concerned with platform manipulation (including platforms themselves) to evaluate and eliminate ethically problematic conduct. It also forms the normative core of an ethical code governing platforms.¹⁹⁵

1. *The Autonomy Costs of Platform Nudging.*

To begin, it is important to recognize the ground on which we are treading. In many ways, it is new. While there have been a number of expositions in legal scholarship of consumer manipulation,¹⁹⁶ and even ones focused on companies' use of behavioral science,¹⁹⁷ only a few have focused their attention on "digital market

¹⁹⁴ Haugh, *supra* note 97, at 715 ("This requires an evaluation of how private nudges impact employee autonomy, balancing autonomy costs against the ends achieved.").

¹⁹⁵ See *infra* Part IV.

¹⁹⁶ See generally, e.g., Micah L. Berman, *Manipulative Marketing and the First Amendment*, 103 GEO. L.J. 497 (2015) (discussing the history of the commercial speech doctrine and examples of "manipulative marketing"); Richard Craswell, *Interpreting Deceptive Advertising*, 65 B.U. L. REV. 657 (1985) (discussing deception in advertising); David A. Hoffman, *The Best Puffery Article Ever*, 91 IOWA L. REV. 1395 (2006) (discussing the puffery doctrine).

¹⁹⁷ See generally, e.g., Shmuel I. Becher & Yuval Feldman, *Manipulating, Fast and Slow: The Law of Non-Verbal Market Manipulations*, 38 CARDOZO L. REV. 459 (2016) (discussing the non-verbal marketing methods that consumers are largely unaware of and how they can be used for manipulation); Sarah C. Haan, *The "Persuasion Route" of the Law: Advertising and Legal Persuasion*, 100 COLUM. L. REV. 1281 (2000) (discussing how the rational processing of information has become less important to commercial persuasion and to consumer decisionmaking); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420 (1999) (presenting evidence of manufacturers and marketers manipulating the risk perceptions of consumers); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999) (arguing that market manipulation will come to characterize consumer market products).

manipulation.”¹⁹⁸ Of those, none have focused specifically on platform companies and their use of the choice architecture tool of nudging. Nor does there appear to be any normative analysis of both the legality and ethicality of such practices. Yet at the same time, much has been written in the legal literature and elsewhere regarding the ethics of nudging as it relates to shaping public policy.¹⁹⁹ Because this is the deepest literature most relevant to our topic,²⁰⁰ it is worth quickly surveying for some key points.

First, every scholar in the debate agrees that nudges have the potential to negatively impact individual autonomy, including impacting autonomy so much as to render a nudge unethical.²⁰¹ Indeed, any discussion of nudges quickly turns to concerns over their potential to coerce behavior in a way that impermissibly reduces individual autonomy.²⁰² Second, autonomy is partly a function of transparency, and non-transparency negatively impacts

¹⁹⁸ See, e.g., Calo & Rosenblat, *supra* note 20, at 1650–54 (discussing the theory of market manipulation and the exploitation by firms of the cognitive biases of consumers). See generally Calo, *supra* note 20 (discussing an impending sea change in the way firms use data to persuade).

¹⁹⁹ See, e.g., SUNSTEIN, *supra* note 142, at 53–72 (discussing how governments use behavioral science to promote efficient governance and how this interest works with the interest of personal autonomy); Cass R. Sunstein, *The Ethics of Nudging*, 32 YALE J. ON REG. 413, 415 (2015) (discussing how the ethics of nudging interplay with the necessities of efficient governance).

²⁰⁰ See generally Calo, *supra* note 20 (discussing nudging in the context of market manipulation to address the way marketing firms use data); Hansen & Jespersen, *supra* note 116 (criticizing nudging as falling short of preserving liberty and attacking the concept in general); John Hasnas, *Some Nudging about Nudging: Four Questions about Libertarian Paternalism*, 14 GEO. J.L. & PUB. POL’Y 645 (2016) (highlighting the interplay between nudging and libertarian values as well as questioning the support for nudging); Daniel M. Hausman & Brynn Welch, *Debate: To Nudge or Not to Nudge*, 18 J. POL. PHIL. 123 (2010) (arguing that nudging is a variety of paternalism); Riccardo Rebonato, *A Critical Assessment of Libertarian Paternalism*, 37 J. CONSUMER POL’Y 357 (2014); Kevin Vallier, *On the Inevitability of Nudging*, 14 GEO. J.L. & PUB. POL’Y 817 (2016) (arguing that a key premise to nudging, that there is no alternative, is based on a mistaken assumption); see also Symposium, *The Ethics of Nudging, Evaluating Libertarian Paternalism*, 14 GEO. J.L. & PUB. POL’Y 645 (2016) (collecting articles by various authors justifying nudging and libertarian paternalism, as well as providing alternative views).

²⁰¹ See Sunstein, *supra* note 199, at 415 (demonstrating that even though nudges are inevitable, they must be justified because they can hinder personal autonomy).

²⁰² SUNSTEIN, *supra* note 142, at 53–72 (discussing the relationship between nudging and personal autonomy and responding to paternalism objections); THALER & SUNSTEIN, *supra* note 25, at 11, 236–37. *But see* Vallier, *supra* note 200, at 823–24 (suggesting that the justification of nudging “reduces to a cost-benefit analysis,” which means there is no “built-in commitment” to liberty or autonomy).

autonomy.²⁰³ Again, all agree that without meaningful monitoring of the choice architect and the methods used to influence the “nudgee,” there is a high likelihood that autonomy will be compromised.²⁰⁴ Bringing these two points together, the collective concerns represent the potential “autonomy costs” of nudging.²⁰⁵

Identifying that nudging may impose autonomy costs at a level that is normatively impermissible is critical to evaluating platform manipulation. But in order to appreciate why nudging may be too costly, it is necessary to define autonomy. Although described somewhat differently by legal, business, and ethics scholars, autonomy is “generally understood to refer to the capacity to be one’s own person, to live one’s own life according to reasons and motives that one takes to be one’s own and not the product of manipulative or distorting external forces.”²⁰⁶ Put another way, autonomy allows actions that are guided by reasons an individual can “underwrite” (i.e., reasons the individual can explain by reference to his or her own ideas, values, and principles).²⁰⁷ This results in autonomous decisions that are “arrived at through a process of rational self-deliberation, so that the agent’s chosen outcome can be justified and explained by reference to reasons that the agent has identified and endorsed.”²⁰⁸

It should be noted that those legal scholars considering behavioral manipulation appear to adopt a similar set of principles. Although he would likely not agree to a firm definition of autonomy, Ryan Calo, who has written most on digital market manipulation,

²⁰³ Karen Yeung, *Nudge as Fudge*, 75 MODERN L. REV. 122, 144 (2012) (showing agreement that “the principle of transparency operates as an important limitation on the use of nudges by the state”). This stems from the concern that nontransparent choice architecture is “highly vulnerable to abuse.” *Id.*

²⁰⁴ See Rebonato, *supra* note 200, at 360 (“The weaker the ability to monitor, the more the electorate has to rely on the benevolence of the ruler.”).

²⁰⁵ Haugh, *supra* note 97, at 688 (analyzing nudging as “autonomy costs” through “both an empirical and normative lens”).

²⁰⁶ Yeung, *supra* note 203, at 135 (citing J. RAZ, *THE MORALITY OF FREEDOM* (Oxford University Press 1986)). There are many competing definitions of autonomy, all of which have their adherents. See, e.g., Christian Schubert, *On the Ethics of Public Nudging: Autonomy and Agency* 9–10 (Univ. of Marburg, Working Paper No. 33-2015, 2015), <https://www.econstor.eu/bitstream/10419/125535/1/837886600.pdf> (highlighting two competing definitions impacting the ethics of nudges). *But see* Calo, *supra* note 20, at 1032 (suggesting there is no stable definition of autonomy in moral or political theory).

²⁰⁷ Yeung, *supra* note 203, at 135 (citing Isaiah Berlin, *Two Concepts of Liberty*, in *THE PROPER STUDY OF MANKIND* 233 (Henry Hardy & Roger Hausheer eds., 1998)).

²⁰⁸ *Id.* This sounds very similar to Thaler and Sunstein’s “as judged by themselves” standard for nudges. See THALER & SUNSTEIN, *supra* note 25, at 5.

sees problematic autonomy costs as “measurable departures from the self-interested course that autonomous agents generally follow.”²⁰⁹ He warns that the tools of behavioral science, as aided by technology, are being used systematically to take advantage of consumer vulnerability—moments of irrational decisionmaking that limits each consumer’s “ability to pursue his or her own self-interest.”²¹⁰ Thus, Calo’s concerns seem to be infused with the same notions of autonomy shared by others.²¹¹

What type of nudges, then, negatively impact autonomous decisionmaking and pose the biggest threat of manipulation? Based on the discussion above, the most problematic would be those “intended to work deliberately . . . to by-pass the individual’s rational decision-making processes in order to channel behaviour [sic] in the direction preferred by the choice architect.”²¹² Nudges that operate by exploiting an individual’s tendency to act unreflectively via System 1 are likely inconsistent with demonstrating respect for individual autonomy²¹³ because

[they] entail not letting . . . actions be guided by principles that [an individual] can underwrite They can be said to be irrational in so far as what is driving [the individual’s] action does not constitute a reason for [his or her] action (ie [sic] not a feature of the action that [they] endorse as a feature that makes the action desirable).²¹⁴

²⁰⁹ Calo, *supra* note 20, at 1032–33 (citing Amitai Etzioni, *Behavioral Economics: Toward a New Paradigm*, 545 AM. BEHAV. SCIENTIST 1099, 1100 (2011)).

²¹⁰ *Id.* at 999.

²¹¹ This includes other legal scholars focused specifically on nudges. See SUNSTEIN, *supra* note 142, at 427 (describing legitimate nudges as ones that increase “people’s own powers of agency”).

²¹² Yeung, *supra* note 203, at 136.

²¹³ Luc Bovens, *The Ethics of Nudge* (showing how nudging leads people to make choices they would not make otherwise), in PREFERENCE CHANGE: APPROACHES FROM PHILOSOPHY, ECONOMICS AND PSYCHOLOGY 2017 (Till Grüne-Yanoff & Sven Ove Hansson eds., 2008).

²¹⁴ Yeung, *supra* note 203, at 136 (emphasis omitted) (quoting Bovens, *supra* note 213, at 210).

Such nudges are therefore “irrationality-exploiting” and impose high autonomy costs that may constitute behavioral manipulation.²¹⁵

Not all nudges exploit irrationality, however. In fact, many nudges are “autonomy-respecting” because they aim to correct cognitive defects and biases that promote more informed decisionmaking.²¹⁶ For example, choice architecture that helps individuals comprehend the full range of options available to them or slow down their reflective judgments may increase agency by aiding their ability to underwrite choice.²¹⁷ These “deliberation tools” sit opposite irrationality-exploiting nudges; rather than taking advantage of cognitive faults, they “appeal[] to individual reason.”²¹⁸ These are low autonomy cost nudges and are less problematic in terms of manipulation.

As mentioned above, autonomy costs are also partly determined by the transparency of the nudge. The greater transparency, the greater respect for autonomy. This follows from the definition of autonomous decisionmaking; it would be difficult to argue that a nontransparent nudge allows a “fully informed agent” to arrive at his or her decision “through a process of rational self-deliberation.”²¹⁹ All nudges have some weaknesses in this regard.²²⁰ While a lack of transparency does not necessarily mean a nudge is manipulative, it does increase the potential that it negatively impacts autonomy.²²¹ This concern would appear to be especially salient in the context of companies attempting to nudge consumers or their employees.²²²

²¹⁵ See Hansen & Jespersen, *supra* note 116, at 23, 25–26 (describing how manipulation related to nudges influencing automated behaviors might be mitigated through transparency).

²¹⁶ See SUNSTEIN, *supra* note 142, at 427 (describing “educative nudges”).

²¹⁷ See Yeung, *supra* note 203, at 132–33 (suggesting that government information campaigns, mandatory disclosure laws, and mandatory cooling off periods are examples of autonomy respecting nudges).

²¹⁸ *Id.* at 137–38.

²¹⁹ *Id.* at 135.

²²⁰ See Haugh, *supra* note 97, at 727–28 (discussing how public policy nudges are implemented by agencies and not often subject to advanced disclosure or debate).

²²¹ See Rebonato, *supra* note 200, at 360 (noting that the “libertarian paternalistic intervention can be particularly pronounced” when an intervention program is not transparent); Yeung, *supra* note 203, at 144 (explaining that transparency is an “important limitation on the use of nudges” and is a tool to “allow meaningful monitoring” of their use).

²²² Haugh, *supra* note 97, at 728.

Additionally, nudges are often considered most effective when they are nontransparent to the nudgee. Although some recent studies suggest otherwise,²²³ alerting people to nudges may undermine their ability to influence behavior.²²⁴ Nudges “work best in the dark,” as Luc Bovens puts it.²²⁵ While that may be true as an empirical proposition, it nevertheless heightens the concern that nontransparent nudges increase autonomy costs and therefore increase manipulation.

2. *The Beneficial Ends of Nudges to Users.*

A consideration of autonomy costs does not necessarily end the normative analysis regarding platform manipulation. Even if platform nudges impinge on user autonomy, they should not automatically be foreclosed as unethical uses of choice architecture.²²⁶ Each platform nudge must be evaluated on a case-by-case basis “in light of the broader context in which it is proposed.”²²⁷ That is because a nudge’s intended purpose helps assess the relationship between means and ends. In other words, the ethicality of a specific nudge depends on the autonomy costs to users (the means employed) weighed against the benefit it provides to those same users (the ends).²²⁸

Unfortunately, the analysis here is hamstrung by a lack of specific data. While there are numerous examples of nudges being used in the public sphere to increase organ donation, savings rates,

²²³ See Hendrik Bruns et al., *Can Nudges Be Transparent and Yet Effective?*, 65 J. ECON. PSYCHOL. 41, 49 (2018) (finding that a default nudge increased contributions to climate protection); George Lowenstein et al., *Warning: You Are About to Be Nudged*, 1 BEHAV. SCI. & POL’Y 35, 35–36 (2015) (reporting similar findings regarding defaults for advanced medical directives).

²²⁴ See THALER & SUNSTEIN, *supra* note 25, at 37–39 (reasoning that white lines painted on sections of Lake Shore Drive in Chicago intended to nudge slower driving may be consciously ignored by drivers once alerted to their presence); Selinger & Whyte, *supra* note 140, at 932 (relating that a GPS device that flashes red and notes updated projected trip time when speeding occurs prompts some to drive faster).

²²⁵ Bovens, *supra* note 213, at 217.

²²⁶ Even outright opponents of nudges say that “the autonomy-diminishing character of irrationality-exploiting nudges does not, in and of itself, warrant rejecting all nudge proposals as illegitimate.” Yeung, *supra* note 203, at 139.

²²⁷ *Id.* at 138.

²²⁸ See Bovens, *supra* note 213, at 217; Yeung, *supra* note 203, at 139. Considering this type of consequentialist perspective is important for a complete normative evaluation of ethicality. See R.C. SEKCHAR, *ETHICAL CHOICES IN BUSINESS* 39–40 (2d ed. 2002) (describing consequentialist analysis, specifically utilitarianism, as “the guiding principle of much modern welfare economics” and locating it in the theories of Mill, Bentham, and Kant).

and education,²²⁹ which would suggest a positive means-ends calculus, no real world data exists demonstrating that platform users benefit from mediated nudges.²³⁰ In fact, the evidence seems to suggest otherwise.²³¹ But generalizations only go so far. When evaluating the ethicality of a company using a behavioral tool—one that has the potential to manipulate—a “consequence sensitive evaluation” of the specific nudge is required.²³² Accordingly, we turn to a few of the platform nudges highlighted above.²³³

3. *The Platform Manipulation Matrix.*

The following provides an integrated framework that platform company stakeholders—users, regulators, the public, and platform companies themselves—can use when contemplating whether to employ specific behavioral nudges to mediate users. The construct is a *platform manipulation matrix*, which provides a visual representation of the autonomy costs and beneficial ends to users of platform nudges.

The matrix is organized so that autonomy costs are aligned low to high (A_L to A_H) on the horizontal axis and beneficial user ends are aligned low to high (E_L to E_H) on the vertical axis. As a nudge increases in autonomy costs, either because it becomes less transparent or more directly harnesses cognitive irrationalities, it moves from low to high (left to right) along the A axis. As that same nudge is judged to have increasing benefits to the user, it moves from low to high (bottom to top) along the E axis. This places the nudge in one of four quadrants, with the upper left being the least

²²⁹ See THALER & SUNSTEIN, *supra* note 25, at 112, 157–58, 175–82, 199–206.

²³⁰ It is important to note that the analysis is *not* whether nudging offers beneficial ends to platform companies or society at large. Certainly, platforms have created incredible economic value, and arguably much social value, although a debate rages as to how much and on what precise basis. See Chavie Leiber, *Tech Companies Use “Persuasive Design” to Get Us Hooked. Psychologists Say It’s Unethical*, VOX (Aug. 8, 2018, 2:30 PM), <https://www.vox.com/2018/8/8/17664580/persuasive-technology-psychology>. But this Article’s focus is narrower. Because nudges are premised on the idea that they “improve the welfare of those being nudged,” the means-ends analysis focuses on the nudgee. Thaler, *supra* note 147. Of course, a nudge that benefits a user may also benefit the platform and increase welfare overall. See Nguyen, *supra* note 171.

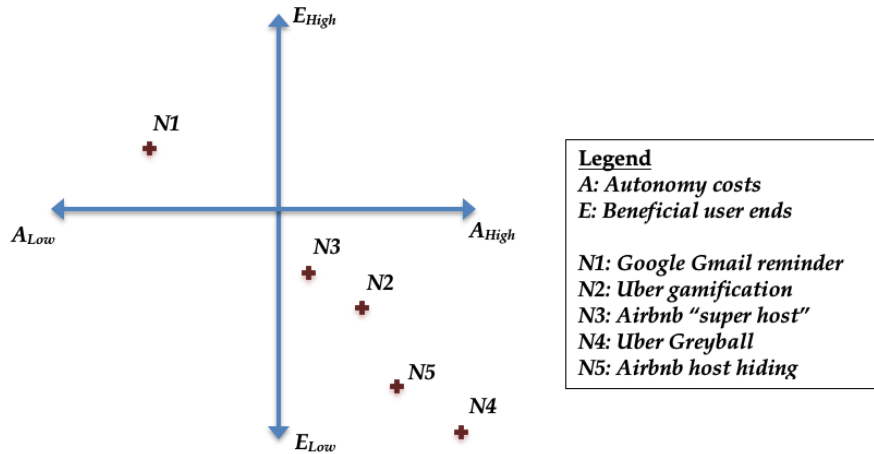
²³¹ Indeed, the more Uber gamifies its driving experience and gets drivers “hooked” on their games, the number of driving hours will increase. This will in turn lower the cost for riders and lead to lower fees and thus income for drivers. See Scheiber, *supra* note 74.

²³² Yeung, *supra* note 203, at 138.

²³³ See *supra* Section III.B.

manipulative, and the lower right being the most manipulative. The matrix is depicted in Graph 1 below.

Graph 1: Platform Manipulation Matrix



Graph 1 represents five nudges that are currently being used by platforms, as discussed in Section III.B. First is Google's demand-side nudge prompting users to respond to certain emails (*N1*). This nudge is placed in the upper left quadrant because it is low in autonomy costs and high in potential user benefits. This classic reminder-type nudge is highly transparent and operates by checking inattentiveness or busyness (which causes nonreflective thinking) through System 2—it is a deliberation prompt. And it appears to be highly beneficial to users. While there is some benefit to Google too, most users would deem a reminder that can easily be ignored as positive as judged by themselves.

Next is Uber's supply side gamification nudges aimed at keeping drivers on the road (*N2*). These nudges have much higher autonomy costs than Google's reminder. While they are transparent in a sense because the drivers can see they are being rewarded in various ways, there are many hidden aspects, including fake hotspots and meaningless awards for longer shifts. Further, these nudges are designed to trigger System 1 responses; while not entirely irrationality-exploiting, they are close. The choice architecture also would seem to benefit demand-side riders and Uber itself more than (and perhaps to the detriment of) supply-side drivers. For these

reasons, such nudges are relatively high in autonomy costs and low in beneficial user ends, placing them in the lower right quadrant. Airbnb's "super host" supply-side nudge (*N3*) would likely fall nearby for similar reasons.

The most striking use of choice architecture is undoubtedly Uber's Greyball program (*N4*). The company created an entirely different platform interface for one type of demand-side users—law enforcement officers with the power to regulate the company.²³⁴ This goes beyond a nudge and constitutes the worst kind of sludge. The nudge is nontransparent—it actively changes the perception of the user by subterfuge—and would never be considered in the user's interests as judged by themselves. This appears to be an autonomy cost outlier compared to most nudges; therefore, it is at the extreme bottom right of the manipulation matrix. Airbnb's mediation of its demand-side regulators (*N5*) would likely be categorized similarly, although there may be legitimate privacy interests for hosts furthered by the practice.

Lastly is Uber's demand-side price discrimination based on user information such as phone battery life, gender, location, or intoxication levels. We do not fully evaluate the practice or place it on the matrix because it is unclear whether the company has actually nudged a user to pay a higher fare in this manner (although Uber has the capability to alter prices based on these factors, and indeed can change the entire platform interface to reflect them). However, if such a nudge were used, it would be highly problematic from an autonomy cost perspective. Nudging to capitalize on fear or incapacity for higher revenues is the definition of irrationality-exploiting sludge.²³⁵

IV. THE CODE OF THE PLATFORM

Having surveyed the composition of platforms and evaluated various nudges along the manipulation matrix—some of which are highly problematic—this Article now considers platform regulation. Existing legal and regulatory frameworks fail to offer much

²³⁴ Isaac, *supra* note 86.

²³⁵ This charting of nudges approach is consistent with behavioral science research. See Mark E. Haskins & James G. Clawson, *Making It Sticky: How to Facilitate the Transfer of Executive Education Experiences Back to the Workplace*, 25 J. MGMT. DEV. 850, 859 (2006) (suggesting people tend to favor visual, auditory, or kinesthetic learning channels).

protection to users.²³⁶ Thus, this Article relies on ethics as a guide to individual and organizational behavior. Intending to spur more robust debate from the variety of stakeholders impacted by platforms, this Article proposes an ethical code as a guide indicating how platform technologies may continue to be deployed, but in a responsible and sustainable manner.

A. LIMITATIONS OF EXISTING LAW

Given that platforms mediate users in a variety of ways, some of which are manipulative, the question then becomes: how do we mitigate these potential harms to human agency? Current United States law speaks little to this because of severe regulatory lags, which are often a result of ignorance of platforms' manipulative capabilities or lack of political will.²³⁷ In addition, regulatory bodies, such as the Federal Trade Commission (FTC) and the Federal Communications Commission (FCC), have yet to use their existing mandates to mitigate the exploitation of behavioral science to harm consumers.

To manipulate its users, a platform must first observe user behavior. In this regard, platforms enjoy relatively free reign because the United States does not have a comprehensive privacy regime to protect users from companies wishing to access user data. Instead, most privacy laws pertain only to specific types of data collection and govern its use in relatively narrow contexts, such as consumer credit (through the Fair Credit Reporting Act) or health data (through the Health Insurance Portability and Accountability Act).²³⁸ Notably, this lax approach to privacy vis-à-vis consumers and private firms contrasts dramatically with European approaches. European regulators, especially those in Germany,

²³⁶ See generally Lawrence Lessig, *Law Regulating Code Regulating Law*, 35 LOY. U. CHI. L.J. 1 (2003) (observing that the interaction between legal or regulatory rules and technical or digital structures is one that has challenged policy makers since the earliest days of the Internet, especially in the realm of privacy and intellectual property protections).

²³⁷ For example, during Mark Zuckerberg's (the CEO of Facebook) testimony before a joint session of the Senate Commerce and Judiciary Committees, Congress demonstrated a lack of understanding about how basic platform companies operate. See Kurt Wagner, *Congress Doesn't Know How Facebook Works and Other Things We Learned from Mark Zuckerberg's Testimony*, RECODE (April 11, 2018, 8:19 PM) <https://www.recode.net/2018/4/11/17226742/congress-senate-house-facebook-ceo-zuckerberg-testimony-hearing>.

²³⁸ Joel R. Reidenberg, *Privacy Wrongs in Search of Remedies*, 54 HASTINGS L.J. 877, 881 (2003).

would cut off some of the data collection necessary for manipulation at much earlier stages and in a broader array of situations.²³⁹

Platforms additionally must be able to assess which choice architecture design features can best exploit users' cognitive vulnerabilities and influence behavior. This type of experimentation is also untouched by regulatory oversight except in extremely limited circumstances. If, for instance, an experiment on users flows through a federally funded research institution, then human subjects regulations related to experimental design and consent would come into play.²⁴⁰

Beyond data collection and experimentation, the presentation of information and a platform's overall choice architecture could come under the purview of the FTC's truth-in-advertising rules²⁴¹ or Section 5 of the Federal Trade Commission Act, which prohibits unfair and deceptive trade practices.²⁴² The FTC, however, has yet to fully assert its authority broadly under either law.²⁴³ The agency has come close to punishing platforms for observation and experimentation when platforms violate their *own* privacy

²³⁹ David Meyer, *Opinion: How Europe Is Better at Protecting Data than the U.S.—and What the Stasi and Nazis Have to Do with It*, MARKETWATCH (Mar. 21, 2018, 1:34 PM), <https://www.marketwatch.com/story/why-europe-does-a-better-job-of-protecting-online-privacy-than-the-us-does-2018-03-20>.

²⁴⁰ For experimentation on mediated users, a rule applicable to federally funded research requires review of the experiment, set up by an institutional review board, and user consent. See James Grimmelmann, *The Law and Ethics of Experiments on Social Media Users*, 13 COLO. TECH. L.J. 219, 250–51 (2015); see also 45 C.F.R. § 46.103 (2014).

²⁴¹ See *Truth in Advertising and Marketing and Other FTC Regulations*, HG.ORG, <https://www.hg.org/legal-articles/truth-in-advertising-and-marketing-and-other-ftc-regulations-31217> (last visited Nov. 17, 2019) (summarizing FTC truth-in-advertising rules).

²⁴² See Jamie Luguri & Lior Strahilevitz, *Shining a Light on Dark Patterns* 1, 29–37 (U. of Chi., Working Paper No. 719, 2019) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3431205 (discussing the FTC's prohibitions on dark patterns).

²⁴³ See 15 U.S.C. § 45(a)(1) (2012) (“Unfair methods of competition in or affecting commerce, and unfair or deceptive acts or practices in or affecting commerce, are hereby declared unlawful.”); see also Letter from James Grimmelmann & Leslie Meltzer Henry, Professors of Law, Francis King Carey School of Law, to Edith Ramirez, Chairwoman, Fed. Trade Comm’n (July 17, 2014), <http://james.grimmelmann.net/files/legal/facebook/FTC.pdf> (describing how Section 5 could be used to prevent manipulation). See generally *Big Data: A Tool for Inclusion or Exclusion?*, FED. TRADE COMMISSION (Jan. 2016), <https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf>.

policies.²⁴⁴ For example, the FTC penalized Uber pursuant to its Section 5 power when it learned that the company was using a “god view” to track celebrities and politicians.²⁴⁵ Courts, too, have found that certain forms of manipulative choice architecture are deceptive trade practices.²⁴⁶ But overall, regulation and case law remain extremely limited.

Finally, U.S. law says very little about manipulation of users itself.²⁴⁷ Some prior interpretations of the FTC and FCC regulations of subliminal advertising, product placement, and bait-and-switch advertising are tangentially, but not directly, related to digital manipulation.²⁴⁸ Both agencies would have to take great strides to engage in any form of modernization in terms of regulating a platform-based market.²⁴⁹

Private causes of action could work under various tort law claims to curtail manipulative conduct, but because users do not often know they are being manipulated, it is unlikely that this remedy would be effective enough to deter platform companies’ behavior. And even if users were aware, it would be difficult for them to recover without paying large legal fees, as most platforms require arbitration in their terms of service, thereby foreclosing the

²⁴⁴ See, e.g., Marisa Kendall, *Uber Settles Federal Probe over ‘God View,’ Other Alleged Privacy Violations*, SILICONBEAT (Aug. 15, 2017, 9:22 AM), <http://www.siliconbeat.com/2017/08/15/uber-settles-federal-probe-over-god-view-other-privacy-violations/> (discussing penalties imposed for Uber’s violation of its own privacy policies).

²⁴⁵ See *id.*

²⁴⁶ See Luguri & Strahilevitz, *supra* note 242, at 29–36 (“[T]here is little case law discussing unfairness and dark patterns in depth, especially in comparison to the development of the deceptive acts and practices precedents.”).

²⁴⁷ See *id.*

²⁴⁸ Peter S. Sloane & Rachel M. Weiss, *Advertising: Overview*, PRAC. L. (2013), http://www.leasonellis.com/wp-content/uploads/2013/11/Advertising-Overview_Marketing.pdf (explaining various advertising techniques’ regulation by the FCC and FTC).

²⁴⁹ Note, however, that there is some initial investigation into this space. See *FTC Hearing 12: April 9 Session 1 Opening Remarks by FTC Chairman Joe Simons Followed by Panels on the Goals of Privacy Protection and the Data Risk Spectrum*, FED. TRADE COMMISSION (Apr. 9, 2019), <https://www.ftc.gov/news-events/audio-video/video/ftc-hearing-12-april-9-session-1-opening-remarks-ftc-chairman-joe> (documenting an FTC hearing that gathered expert opinions on privacy of consumer data); *FTC Hearing 12: April 9 Session 2 Remarks by FTC Commissioner Noah Joshua Phillips Followed by Panels on Consumer Demand and Expectations for Privacy and Current Approaches to Privacy*, FED. TRADE COMMISSION (Apr. 9, 2019), <https://www.ftc.gov/news-events/audio-video/video/ftc-hearing-12-april-9-session-2-remarks-ftc-commissioner-noah-joshua> (documenting an FTC hearing on privacy of consumer data).

possibility of class actions.²⁵⁰ In the end, there is little to no direct legal route for protecting users from manipulation.

B. THE ROLE FOR ETHICS

Given the paucity of legal protections, those seeking to limit manipulative platform conduct must find alternatives. This Article argues that an ethical code can serve this function. The value of ethics as a means of constraining the conduct of platform-based companies is demonstrated along three dimensions—extrinsic, intrinsic, and strategic—that together justify serious consideration of an ethical code, particularly in the absence of clear legal or regulatory controls.

Attention to ethics is good for businesses along many extrinsic dimensions—bottom lines, such as financial considerations—and intrinsic dimensions—less measurable impacts, such as corporate culture and employee well-being.²⁵¹ Both extrinsic and intrinsic foci are linked.²⁵² Margolis and Walsh, for instance, examined eighty different studies compiled over the last thirty years of the twentieth century and found financial performance positively correlated with “corporate social performance,” like corporate ethical behavior, in a majority of the studies.²⁵³ Summarizing their research to the Business Roundtable Institute for Corporate Ethics, the researchers argued that “[p]aying attention to ethics issues and initiatives does

²⁵⁰ See Jean R. Sternlight & Elizabeth J. Jenson, *Using Arbitration to Eliminate Consumer Class Actions: Efficient Business Practice or Unconscionable Abuse?*, 67 L. & CONTEMP. PROBS. 75, 75 (2004) (“Companies are increasingly drafting arbitration clauses worded to prevent consumers from bringing class actions against them in either litigation or arbitration.”).

²⁵¹ Silke Astrid Eisenbeiss, Daan Van Knippenberg & Clemens Maximilian Fahrback, *Doing Well by Doing Good? Analyzing the Relationship Between CEO Ethical Leadership and Firm Performance*, 128 J. BUS. ETHICS 635, 645 (2015) (finding empirical evidence “organizational ethical culture interacts with the corporate ethics program such that organizational ethical culture is positively related to firm performance”).

²⁵² See, e.g., *id.* at 647 (“Challenging the traditional . . . belief that business ethics and financial performance are mutually exclusive[,] . . . we show that CEO ethical leadership and firm performance can go well together.”).

²⁵³ JOSHUA DANIEL MARGOLIS & JAMES PATRICK WALSH, PEOPLE AND PROFITS? THE SEARCH FOR A LINK BETWEEN A COMPANY’S SOCIAL AND FINANCIAL PERFORMANCE 16 (2001). Only four studies indicated an adverse financial impact, with the remainder of the studies reporting no relationship or mixed results. See *id.*

not destroy financial value and does not distract managers from creating value for the company's stakeholders."²⁵⁴

Recent research conducted by the Ethics & Compliance Initiative (ECI) also identified a multitude of benefits flowing to businesses that take ethics seriously.²⁵⁵ Specifically, the ECI found that companies with an ethics and compliance culture, including an integrated commitment to stated ethical values and a prioritization of organizational integrity, reported that their employees were far less likely to partake in or fail to report wrongdoing.²⁵⁶ Not surprisingly, employees who rate their organization and its leadership as committed to ethics report higher rates of satisfaction and commitment, resulting in less turnover and greater productivity.²⁵⁷ Higher rates of creativity and innovation are also found in organizations where trust levels result in perceptions of more openness and concern for employee well-being.²⁵⁸ While examples can surely be found where unethical organizations have prospered, an overwhelming body of evidence demonstrates that fostering an ethical climate yields successful returns along a number of organizational dimensions.²⁵⁹

²⁵⁴ JOSHUA MARGOLIS, JAMES WALSH & DEAN KREHMEYER, *BUS. ROUNDTABLE INST. FOR CORP. ETHICS, BUILDING THE BUSINESS CASE FOR ETHICS* 9 (2006).

²⁵⁵ ETHICS & COMPLIANCE INITIATIVE, *THE STATE OF ETHICS & COMPLIANCE IN THE WORKPLACE* 4 (2018), <http://www.boeingsuppliers.com/GBES2018-Final.pdf>.

²⁵⁶ ETHICS & COMPLIANCE INITIATIVE, *MEASURING THE IMPACT OF ETHICS & COMPLIANCE PROGRAMS* 6 n.2 (2018), https://acua.org/ACUA/media/files_members/rise/webinars/Measuring-the-Impact-of-Ethics-and-Compliance-Programs-June-2018.pdf ("Employees in stronger cultures (83%) were more likely to report misconduct compared with those in weaker cultures (58%).").

²⁵⁷ Anne L. Davis & Hannah R. Rothstein, *The Effects of the Perceived Behavioral Integrity of Managers on Employee Attitudes: A Meta-Analysis*, 67 *J. BUS. ETHICS* 407, 408 (2006).

²⁵⁸ Craig E. Johnson, Paul M. Shelton & Laurie Yates, *Nice Guys (and Gals) Finish First: Ethical Leadership and Organizational Trust, Satisfaction and Effectiveness*, 4 *INT'L LEADERSHIP J.* 3, 5–8 (2012); Tu Yidong & Lu Xinxin, *How Ethical Leadership Influences Employees' Innovative Work Behavior: A Perspective of Intrinsic Motivation*, 116 *J. BUS. ETHICS* 441, 449 (2013).

²⁵⁹ See, e.g., Michael E. Brown & Linda K. Trevino, *Socialized Charismatic Leadership, Values Congruence, and Deviance in Work Groups*, 91 *J. APPLIED PSYCHOL.* 954, 958–62 (2006) ("The relationship between socialized charismatic leadership and employee deviance reaffirms the strong influence supervisors have . . . [This study also] demonstrate[s] a relationship between socialized charismatic leadership and reduced deviance in work groups."); Mitchell J. Neubert et al., *The Virtuous Influence of Ethical Leadership Behavior: Evidence from the Field*, 90 *J. BUS. ETHICS* 157, 160–70 (2009) ("[W]hen managers behave in a fair, honest, trustworthy, and considerate manner these virtuous behaviors seem to create a virtuous cycle in which ethical leadership behavior perpetuates an ethical work climate that

The value gained by taking ethical considerations seriously is equally robust in terms of corporate strategy vis-à-vis creating and maintaining trust with customers.²⁶⁰ Customer trust is critical to capturing and maintaining market share, but it can be fragile.²⁶¹ It does not take long for product safety breaches or deficient services to erode customer confidence and willingness to continue the business relationship.²⁶² As business ethicist Timothy Fort explains, “trust in business” is about

aligning rewards and incentives[;] . . . garnering the confidence of stakeholders because you keep your word, tell the truth, and produce high-quality goods and services[;] putting your money where your mouth is, so that when a crunch time comes, you deliver on ethics rather than weaseling out of commitments[;] making sure that in conducting business, one doesn't trample on the interests of stakeholders who, at the moment of the action, can't protect themselves that well and who trust a company not to do so.²⁶³

In other words, trust in business is about ethics, and various platform-based practices warrant serious ethical analysis.²⁶⁴ Platforms' use of sophisticated nudging techniques, which raise concerns about manipulation due to their high autonomy costs and low user benefits, are problematic to the extent they threaten users' willingness or ability to trust the platform.²⁶⁵

allows subordinates to flourish.”). Specifically, a focus on organizational trust has been shown to yield a number of positive outcomes, including more frequent collaboration and communication, lower operating costs, reduced employee turnover, and greater work effort. See Kurt T. Dirks, *The Effects of Interpersonal Trust on Work Group Performance*, 84 J. APPLIED PSYCHOL. 445, 453 (1999).

²⁶⁰ See *supra* notes 237–38 and accompanying text.

²⁶¹ See *supra* note 238 and accompanying text.

²⁶² On the fragility of trust, Warren Buffett perhaps said it best: “It takes 20 years to build a reputation and five minutes to ruin it.” ROBERT L. BLOCH, *MY WARREN BUFFETT BIBLE* 106 (2015).

²⁶³ TIMOTHY L. FORT, *THE VISION OF THE FIRM* 204 (2d ed. 2017).

²⁶⁴ See *supra* Part II.

²⁶⁵ See Olivia Solon, *Is Lyft Really the ‘Woke’ Alternative to Uber?*, GUARDIAN (Mar. 29, 2017, 7:00 AM), <https://www.theguardian.com/technology/2017/mar/29/is-lyft-really-the-woke-alternative-to-uber> (explaining that Uber drivers are switching to Lyft because of ethical reasons).

Of course, ethics can be a squishy terrain upon which to operate one's business. Values are not uniform across an industry; depending on the intensity of one's competitive landscape, cutting corners in ways that do not bolster the trust of customers or recalibrating the business's moral compass to justify a reevaluation of previously-held ethical positions may be temptations too great to avoid. As the last forty years of research on human behavior has demonstrated, ethical fading²⁶⁶ and moral disengagement²⁶⁷ are frequent phenomena among both individuals and organizations.

Given these realities, the boundaries of tolerable platform conduct will eventually be subject to legal restrictions and regulatory oversight. It is only a matter of time before state and federal lawmakers catch up to the conduct of platform companies.²⁶⁸ Thus, the final value-add provided by a robust embrace of an ethical code among those operating in the platform economy is a pragmatic one, as it will hold regulators at bay for as long as possible and set the tone for eventual regulation by preemptive self-policing.²⁶⁹ Following the lead of healthcare and financial services industries, platform companies would be especially well-served to self-regulate pursuant to an agreed-upon ethical code for not only all of the intrinsic and extrinsic reasons set forth above, but also as a

²⁶⁶ See Robert A. Prentice, *Behavioral Ethics: Can It Help Lawyers (and Others) Be Their Best Selves?*, 29 NOTRE DAME J.L. ETHICS & PUB. POL'Y 35, 52–57 (2015) (describing moral awareness and the role that firms and individuals can play in limiting the effects ethical fading). See generally MAX H. BAZERMAN & ANN E. TENBRUNSEL, *BLIND SPOTS: WHY WE FAIL TO DO WHAT'S RIGHT AND WHAT TO DO ABOUT IT* (2011). For a discussion of ethical fading and its role in the ethical failures of businesses, see Ann E. Tenbrunsel & David M. Messick, *Ethical Fading: The Role of Self-Deception in Unethical Behavior*, 17 SOC. JUST. RES. 223 (2004).

²⁶⁷ See Albert Bandura et al., *Mechanisms of Moral Disengagement in the Exercise of Moral Agency*, 71 J. PERSONALITY SOC. PSYCHOL. 364, 368–74 (1996) (explaining the results and implications of a study on moral disengagement and its effects on detrimental conduct); James R. Detert, Linda Klebe Trevino & Vicki L. Sweitzer, *Moral Disengagement in Ethical Decisionmaking: A Study of Antecedents and Outcomes*, 93 J. APPLIED PSYCHOL. 374, 384 (2008) (discussing the role that moral disengagement plays on unethical decisionmaking and theorizing about individual differences that play a part in moral disengagement); Celia Moore et al., *Why Employees Do Bad Things: Moral Disengagement and Unethical Organizational Behavior*, 65 PERSONNEL PSYCHOL. 1, 3–6 (2012) (describing the theoretical background of the theory of moral disengagement and the eight main mechanisms that individuals employ when making decisions under the lens of moral disengagement).

²⁶⁸ See *supra* Section IV.A.

²⁶⁹ See Todd Haugh, *The Criminalization of Compliance*, 92 NOTRE DAME L. REV. 1215, 1224 (2017) (describing eras of corporate self-regulation).

pragmatic effort to establish the location and extent of regulatory restrictions surely on the horizon.

C. A PROPOSED MODEL CODE

In light of the above, this Article advocates for the adoption by all platform company stakeholders of an ethical code that will clearly, but broadly, demarcate the boundaries of acceptable platform behavior.²⁷⁰ We support that position by demonstrating the value of ethical codes of conduct and related best practices, and by the strength of our model ethical code itself.

Written codes of ethical conduct have been a staple of industries and business organizations since the mid-twentieth century.²⁷¹ By the 1980s, adoption of ethics codes had become widespread across industries in the wake of multiple international and domestic business scandals, and served as a means for corporate leaders to reassure stakeholders of companies' commitment to ethical practices.²⁷² These codes have always been multi-pronged in their aim, intended to improve both organizational climate and financial performance,²⁷³ while guiding action (or mitigating potential penalties) where legal and regulatory systems have for some reason proven ineffective or inadequate.²⁷⁴ The 1991 Organizational Sentencing Guidelines further incentivized creation of ethics codes as a "legal self-defense mechanism" and as a proxy for an

²⁷⁰ An organizational or industry-wide code of ethics is a written expression of governing norms and values, or, more broadly, a road map that guides business behavior. *See generally* O.C. Ferrell & Steven J. Skinner, *Ethical Behavior and Bureaucratic Structure in Marketing Research Organizations*, 25 J. MKTG. RES. 103 (1988); Sean Valentine & Tim Barnett, *Ethics Code Awareness, Perceived Ethical Values, and Organizational Commitment*, 23 J. PERS. SELLING & SALES MGMT. 359 (2003).

²⁷¹ *See* Janet S. Adams, Armen Tashchian & Ted H. Shore, *Codes of Ethics as Signals for Ethical Behavior*, 29 J. BUS. ETHICS 199, 199 (2001) (noting that the J.C. Penney Company launched its "Penney Idea" in 1913, Johnson & Johnson's famous statement of ethical values was codified in the 1940s, and by the 1950s between 15 and 40 percent of large companies reported adoption of an ethics code).

²⁷² *See* Patrick E. Murphy, *Corporate Ethics Statements: Current Status and Future Prospects*, 14 J. BUS. ETHICS 727, 729 (1995) (discussing the increase in ethics codes following incidents like Watergate).

²⁷³ *See generally* WILLIAM H. SHAW & VINCENT BARRY, *MORAL ISSUES IN BUSINESS* (13th ed. 2015).

²⁷⁴ *See generally* CHRISTOPHER D. STONE, *WHERE THE LAW ENDS* (1975); Kenneth J. Arrow, *Social Responsibility and Economic Efficiency*, 21 PUB. POL'Y 303 (1974).

organization's commitment to a comprehensive organizational focus on doing the right thing.²⁷⁵

As a general rule, the most effective ethical codes of conduct are structured at a high level and motivate compliance via inspiration rather than compulsion.²⁷⁶ In short, they “focus attention on important ethical standards, outline expectations, and help people act more appropriately.”²⁷⁷ The model ethical code proposed in this Article includes, among other things: guidance for the larger industry; the moral principles undergirding the code; encouragement of buy-in and stimulation of further discussion and modification; explanation of the distinction between ideals and minimum conditions; protection of the larger community; and identification of issues relevant to individual stakeholder groups.

With the above in mind, we reviewed hundreds of ethical codes housed in the Illinois Institute of Technology's *Ethics Codes Collection*, the largest available database of ethics codes and guidelines.²⁷⁸ This collection contains approximately 2,500 individual codes from 1,500 separate organizations.²⁷⁹ During our review, we paid special attention to codes addressing behavioral science and technology.

This Article's proposed model code relies heavily on Richard Thaler's pronouncements for what makes a “good” nudge.²⁸⁰ Thaler suggested three principles to guide the use of nudges by government and private actors: (1) nudges should be transparent and never misleading; (2) nudges should be as easy as possible to opt out of; and (3) nudges should encourage behavior that will improve the nudgee's welfare.²⁸¹ Though simple, these principles reflect concerns that nontransparent nudges can impose impermissible

²⁷⁵ See Adams, Tashchian & Shore, *supra* note 271, at 200 (discussing the implementation of the 1991 Federal Sentencing Guidelines and its effects on ethics codes); Robert J. Rafalko, *Remaking the Corporation: The 1991 Sentencing Guidelines*, 13 J. BUS. ETHICS 625, 634 (1994) (discussing two points about the coercion of ethical compliance as a result of the sentencing guidelines).

²⁷⁶ See generally Lynn S. Paine, *Managing for Organizational Integrity*, HARV. BUS. REV. (1994), <https://hbr.org/1994/03/managing-for-organizational-integrity> (discussing strategies for the most effective ethics management in a company).

²⁷⁷ CRAIG E. JOHNSON, MEETING THE ETHICAL CHALLENGES OF LEADERSHIP 349 (6th ed. 2018).

²⁷⁸ THE ETHICS CODES COLLECTION, <http://ethicscodescollection.org> (last visited Jan. 20, 2020).

²⁷⁹ *Id.*

²⁸⁰ See Thaler, *supra* note 147.

²⁸¹ *Id.*

autonomy costs on individuals, particularly when the benefits to the individuals are minimal.²⁸² Thaler’s overarching goal in advancing these principles is to reduce manipulative uses of behavioral science—the “sludge” mucking up decisionmaking—thereby “mak[ing] the world a better place.”²⁸³

Additionally, this Article’s suggested model code relies on the Association for Computing Machinery’s (ACM) “Code of Ethics and Professional Conduct.”²⁸⁴ Although the ACM’s code is more formally constructed than Thaler’s, it has a similar overarching goal to “consistently support[] the public good.”²⁸⁵ The ACM code is organized around seven general moral imperatives—ranging from contributing to society to avoiding harm—and nine specific professional responsibilities.²⁸⁶ This structure is intended to inspire the ethical conduct of computing professionals, as well as to provide guidance for specific action, all based on the fundamental notion “that the public good is always the primary consideration.”²⁸⁷ Unlike Thaler’s principles, the ACM code was a long-term collaborative effort with over 3,000 computing professionals contributing to various working drafts of the code to arrive at its current form, which was voted on by association members.²⁸⁸

Our proposed model code attempts to meld these two approaches in both substance and structure. It offers the best opportunity to motivate platform companies to avoid user manipulation through inspiration rather than compulsion, while also outlining clear standards for stakeholders to evaluate.²⁸⁹ Accordingly, the code is drafted as a series of high-level, memorably written principles, with a detailed explanatory statement, all targeted toward platform companies and users. While the code admittedly does not have the

²⁸² See *supra* Section III.A.2.

²⁸³ See Thaler, *supra* note 154, at 431.

²⁸⁴ CODE OF ETHICS AND PROFESSIONAL CONDUCT, ASS’N FOR COMPUTING MACHINERY (2018), <https://www.acm.org/code-of-ethics> [hereinafter ACM CODE]. ACM is the largest and oldest professional association of computer programmers. All members must agree to be bound by the association’s code. See *About the ACM Organization*, ASS’N FOR COMPUTING MACHINERY, <https://www.acm.org/about-acm/about-the-acm-organization> (last visited Nov. 17, 2019).

²⁸⁵ ACM CODE, *supra* note 284.

²⁸⁶ *Id.* It also includes provisions for ethical leadership and enforcement.

²⁸⁷ *Id.*

²⁸⁸ See Marty J. Wolf, *Computing Ethics Gets an Update*, EE TIMES (Aug. 20, 2018), https://www.eetimes.com/author.asp?section_id=36&doc_id=1333605# (describing the process of drafting and adopting revised ACM code).

²⁸⁹ JOHNSON, *supra* note 277, at 349.

benefit of years of review or thousands of industry commenters, it serves as a meaningful starting point for future discussion.²⁹⁰

Tenet 1: All choice architecture should be fully transparent to users.

“Don’t nudge in the dark.”

Transparency is a central component of autonomy—“the capacity to be one’s own person, to live one’s own life according to reasons and motives that one takes to be one’s own and not the product of [manipulation].”²⁹¹ A platform user cannot make an autonomous decision if that user is unaware of the choice architecture being used to influence his or her decisions and behavior. Platforms should disclose when they are using tools of behavioral science, including nudges, to influence users and induce any intended behaviors. Well-designed choice architecture is not dependent on subterfuge, and users will reward platforms that openly nudge in ways that benefit users by improving their long-term welfare. Nontransparent nudges are more likely to be manipulative.

Tenet 2: All choice architecture should be easy to overcome by users.

“Don’t make nudges hard to avoid.”

The ethical use of choice architecture requires that users be able to make their own choices on the platform easily and freely. Platform activities that act to ban, mandate, subsidize, tax, fine, or

²⁹⁰ The model code we propose also draws inspiration from the recent tenets adopted by the Partnership on Artificial Intelligence to Benefit People and Society, which consists of some of the largest tech companies in the United States. The partnership conducts research, recommends best practices, and publishes white papers concerning the ethics of artificial intelligence and related technologies. We found the partnership model between leading companies, academics, non-profits, and policy experts to be compelling, and we would hope a similar structure forms around our model code. See *Tenets, PSHIP ON AI*, <https://www.partnershiponai.org/tenets/> (last visited Jan. 20, 2020); Alex Hern, *Partnership on AI Formed by Google, Facebook, Amazon, IBM and Microsoft*, *GUARDIAN* (Sept. 28, 2016, 5:00 PM), <https://www.theguardian.com/technology/2016/sep/28/google-facebook-amazon-ibm-microsoft-partnership-on-ai-tech-firms>.

²⁹¹ Yeung, *supra* note 203, at 135. See generally John Christman, *Saving Positive Freedom*, 33 *POL. THEORY* 79 (2005).

harshly penalize choice fail in this regard because users may not “go their own way” independent of the platform’s influence. Platform choice architects should limit behavioral interventions to reminders, warnings, prompts, anchors, frames, and default rules, which are easier for users to ignore and therefore less impactful to autonomy. To be nonmanipulative, platform nudges must always preserve users’ freedom of choice.

Tenet 3: Irrationality-exploiting nudges should only be used if deliberative nudges are unavailable.

“Don’t nudge for irrationality.”

On the matrix of manipulative choice architecture, nudges that exploit the automatic thinking system are more problematic than those triggering the deliberative thinking system. Such irrationality-exploiting nudges inherently are more costly to user autonomy because they target subconscious biases and heuristics, which are difficult to control and lessen the decisionmaker’s feelings of agency and volition. Platforms should be aware of the thinking system their choice architecture is employing and limit the use of irrationality-exploiting nudges to situations in which deliberative nudges are unavailable or ineffective, and when welfare-enhancing benefits to the user are high. This tenet recognizes that some nudges may benefit users even though their automatic cognitive processes have been exploited, but platforms should engage such choice architecture with extreme care.

Tenet 4: Choice architecture should not be used to create or perpetuate market failures.

“Don’t use nudges to harm the market you’ve created.”

Platform companies benefit significantly from the multi-sided markets they create and foster. The use of behavioral science and choice architecture is a critical component in growing those markets, which now encompass billions of users. Platforms must recognize their unique role in our social and economic landscape and the influence they possess. Platforms should use this role, and the economic power it provides, not only for their benefit, but for the

benefit of all stakeholders. Platforms should not use choice architecture, including nudges, to create or perpetuate failures in the markets from which they benefit. This includes nudging behavior that fosters information asymmetries between platform and user, opposition to regulation aimed at correcting market imperfections, and negative externalities (including those related to the costs of exploiting user autonomy).

Tenet 5: All choice architecture should be employed to benefit users as judged by themselves.

“Don’t create sludge.”

Behavioral science in the abstract is neither good nor bad, divine nor evil. Application determines ethicality. Thus, every platform nudge has the capacity to make the world better by improving user welfare or hinder autonomous decisionmaking through manipulative sludge. Sludge—any choice architecture that discourages a user from acting in their best interests as judged by themselves or encourages self-defeating behavior—should be avoided by platforms. When sludge is identified, it should be eliminated. Sludge that is purposefully used to manipulate user behavior should subject the offending platform company to intervention by an appropriate regulator and censure commensurate with the harm caused.

V. CONCLUSION

It has been said that we are in a behavioral science revolution, as advancements in the understanding of human decisionmaking are changing the way we interact with government, business, and each other.²⁹² It has also been said that we are in the midst of a new technological revolution, one in which a digital platform economy is emerging.²⁹³ If both are true, platform companies have positioned themselves perfectly at the intersection of a new age. These

²⁹² David Full, *The Behavioral Science Revolution Is Over-Hyped*, KENNEDY SCH. REV. (Dec. 29, 2017), <http://ksr.hkspublications.org/2017/12/29/the-behavioral-science-revolution-is-over-hyped/>.

²⁹³ See, e.g., Martin Kenney & John Zysman, *The Rise of the Platform Economy*, ISSUES SCI. & TECH (2016), <https://issues.org/the-rise-of-the-platform-economy/>.

companies, and the products they create, have become indispensable to billions of users. While much of platforms' success stems from their ability to lower transaction costs to facilitate value-creating exchange, platforms also benefit from powerful network effects that are a result of a heavily mediated userbase. Many see this as a triumph of multi-sided markets; others see platforms as manipulating the very users that allowed them to become so dominant.

This Article set out to evaluate these competing notions of platform conduct through a legal and ethical lens. To do so in a principled way, this Article first provided a more complete descriptive account of how platform companies operate than is currently available in the legal and business literature. It took an in-depth look into the choice architecture that platforms employ to structure almost every decision that users make on the platform. Next, this Article assessed and charted on a manipulation matrix the nudges that platforms employ to influence their users, finding that much platform conduct is indeed manipulative because it exacts impermissible autonomy costs on users. After a review of applicable law and regulations, this Article recognized deficiencies in the current regulatory scheme and offered a path forward: an ethical code for platform-based companies. This code serves as a starting point for all stakeholders interested in minimizing platform manipulation. As we progress in these new ages of technological and behavioral progress, the Code of the Platform hopefully will influence users, regulators, the public, and platform companies themselves in a positive way.

