

THE CODE OF THE PLATFORM

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Abstract

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 grow wildly successful. Despite that success, 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 behavioral science to mediate user transactions. After providing a more complete descriptive account of how platform companies operate and succeed than is available in the current literature, including an in-depth analysis of the choice architecture platforms employ to structure almost every decision made on the platform, the 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. The Article then offers a path forward, an ethical code to be used by platforms, users, and regulators aimed at reducing manipulative practices—a new Code of the Platform.

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, you were likely on one. If you tweeted something, liked something, or bought something, you may have been too. And if you searched for anything on the Internet, you were definitely on one. That is because platforms—or more accurately, digital platform-based businesses—are hard to avoid these days.¹ 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.² Their omnipresence comes from their ability to effectively harness technology to facilitate a multi-sided value exchange, with the platform at the center.³

¹ Throughout this Article we use the terms “platforms” and “platform companies” interchangeably to identify platform-based businesses. We use the term “platform” when describing a digital space in which two or more users on opposite sides of a social or economic transaction interact.

² DAVID S. EVANS & RICHARD SCHMALENSEE, MATCHMAKERS: THE NEW ECONOMICS OF MULTISIDED PLATFORMS (2016).

³ 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 Feb. 9, 2019)

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 deem indispensable.⁴ Indeed, the combined market capitalization of the top twenty platform companies is roughly \$6 trillion, more than a quarter of the size of the U.S. economy.⁵ 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 (some have topped \$1 trillion in value), spanning twenty-two countries and public and private ownership models.⁶ Platforms also make up some of the fastest growing companies within the tech sector.⁷ For every Amazon and Apple, there are hundreds, maybe thousands, more platforms across the world vying to connect homebuyers with mortgages (Morty), neighbors with rental goods (Fat Lama), or cannabis industry workers with dispensaries and grow houses (Vangst).⁸ 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 three billion platform users.⁹

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 users to interact, which then reduces transaction costs and minimizes information asymmetries, thereby facilitating exchange and creating economic value.¹⁰ As users increase, so do network effects—the phenomenon whereby a product or service gains additional value as more people use it—making the platform more attractive to new users and more difficult for existing users to leave.¹¹ This

(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”).

⁴ Facebook and Google (via its parent company, Alphabet) are Fortune 100 companies, as are Amazon, Apple, and Microsoft, which are also platforms. See Fortune 500, FORTUNE, <http://fortune.com/fortune500/list/> (last visited Feb. 9, 2019).

⁵ Jeff Desjardins, *Tech’s 20 Largest Companies Are Based in 2 Countries*, BUSINESS INSIDER (July 9, 2018, 7:30 AM), <https://www.businessinsider.com/techs-20-largest-companies-are-based-in-2-countries-2018-7>.

⁶ Peter C. Evans & Annabelle Gawer, *The Ride of the Platform Enterprise: A Global Survey*, CTR. FOR GLOBAL ENTER., 10, 14 (2016), https://www.thecge.net/app/uploads/2016/01/PDF-WEB-Platform-Survey_01_12.pdf.

⁷ For example, GrubHub, the food delivery platform that services 50,000 restaurants in the U.S., had average sales growth above 50 percent in 2017. Alex Konrad, *Meet the Fastest Growing Public Tech Companies In 2017*, FORBES (May 3, 2017), <https://www.forbes.com/sites/alexkonrad/2017/05/23/fastest-growing-public-tech-companies-in-2017/#46fcdf111ea7>.

⁸ This is especially true in China. KAI-FU LEE, *AI SUPER-POWERS: CHINA, SILICON VALLEY, AND THE NEW WORLD ORDER* (2018). See Joanna Glasner, *Startups Are (Still) Making Weird Name Choices*, TECHCRUNCH, <https://techcrunch.com/2018/02/10/startups-are-still-making-weird-name-choices/>; Courtney Connley, *Meet the 24-year-old Founder Behind the Career Site for Cannabis Jobs*, CNBC (Oct. 18, 2017, 11:18 AM), <https://www.cnn.com/2017/10/18/meet-the-24-year-old-founder-behind-the-career-site-for-cannabis-jobs.html>.

⁹ 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 that three billion number relates *only* to social media platform users; total platform users are much higher.

¹⁰ Sangeet Paul Choudary, *The Architecture of Digital Labour Platforms: Policy Recommendations on Platform Design for Worker Well-Being*, INT’L LABOR ORG. 1—2 (2018), https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_630603.pdf.

¹¹ See David S. Evans, *Antitrust Issues Raised by the Emerging Global Internet Economy*, 102 NW. U.L. REV. 1987, 1995 (2008) (explaining network effects as follows: the “value that a customer on one side realizes from the platform increases with the number of customers on the other side”). See also Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93 (1994).

propels successful platform companies toward monopolies, which is “intoxicating to investors” and leads to additional cycles of investment, growth, and success.¹² Some have called platforms the perfect business model.¹³

Despite these positives, however, platforms are beginning to face criticism. Recent public outcry concerning data breaches at Uber, LinkedIn, and TicketFly is one example.¹⁴ Congressional inquiry into election meddling through social media platforms such as Facebook and Twitter is another.¹⁵ And a third is growing discord among platform company employees over working for distasteful clients, most notably occurring at Google.¹⁶

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, but from a viewpoint that is novel in the business and legal literature.¹⁷ First, it provides a more complete descriptive account of platforms than is currently available. 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. But 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.¹⁸ Also

¹² John Herman, *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>; Gregory Day & Abbey Stemler, *Supracompetitive Privacy* (forthcoming, 2019) (paper on file with authors).

¹³ The term “holy grail” is 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>. See also Herman, *supra* note 12 (reporting that platforms have been the “subject of rapturous popular business writing”).

¹⁴ Jade Scipioni, *A List of the Biggest Data Leaks*, FOX BUS. (Nov. 30, 2018), <https://www.foxbusiness.com/features/a-list-of-the-biggest-data-leaks>.

¹⁵ 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>.

¹⁶ See Brittany De Lea, *Google Code of Ethics on Military Contracts Could Hinder Pentagon Work*, FOX NEWS (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).

¹⁷ While digital market manipulation in the sharing economy has been the subject of some scholarly attention, see e.g., Ryan Calo & Alex Rosenblat, *The Taking Economy: Uber, Information, and Power*, 117 COLUM. L. REV. 1623 (2017); Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995 (2014), as has legal violations committed by platform companies, see Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87 (2016), 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.

¹⁸ See Abbey Stemler, *The Myth of the Sharing Economy and Its Implications for Regulating Innovation*, 67 EMORY L.J. 101 (2017) [hereinafter, *Myth*]; Abbey Stemler, *Feedback Loop Failure: Implications for the Self-Regulation of the Sharing Economy*, 18 MINN J.L. SCI. TECH. 673 (2017).

critical to this discussion is how platform companies use technology to deliver the powerful tools of behavioral science to 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 inputs to users so as to almost guarantee the outputs—the “response, behavior, [and] beliefs” of anyone using the platform.¹⁹

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, the Article finds that much of what platforms do is indeed manipulative to users, on all sides of the mediated transaction. Platform companies, through an increasingly sophisticated nexus of computing and behavioral science technology, are able to influence users to act against their long-term interests, often without users’ knowledge. This imposes an impermissible cost on user autonomy in violation of accepted ethical standards.

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.²⁰ Thus, situating platform company actions on a manipulation matrix serves the second function of highlighting autonomy cost outliers, *i.e.*, those actions imposing significant costs to one’s agency that many stakeholders would deem problematic. These 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, the Article turns to a more promising route: an ethical code 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 platforms users that requires a new Code of the Platform.

I. The Composition of Platforms

Throughout human history, platforms have helped people connect. From farmers’ markets to newspaper classified ads, any real or virtual space that facilitates transactions is a

¹⁹ Brett Frischmann & Deven Desai, *The Promise and Peril of Personalization*, CTR. INTERNET TECH. (Nov. 29, 2018), <http://cyberlaw.stanford.edu/blog/2018/11/promise-and-peril-personalization>.

²⁰ 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 choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives”).

platform. 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.²¹ They 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 utilize a simple but highly effective business model: they generate revenue by using technology to facilitate transactions among users. With Google it is 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 one group of users access to another group (*e.g.*, Google, Facebook).²² It follows then, that to both generate transactions and revenue, platforms must attract and retain users. This is done through traditional means—creating a product that people want to use—but also through network effects, a phenomenon that causes a product or service to gain additional value as more people use it.²³

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.²⁴ While it sounds simple, this type of facilitating function can be crucial for an efficient marketplace. When parties interested in transacting cannot easily find one another to exchange goods and services, it disrupts the desirability of a particular market.²⁵

By way of example, remember life before eBay? If a person sought a rare used item, they would have to scour the newspapers, local flea markets, or antique shops in hope of finding the item, then negotiate the sale in person, hoping the item lived up to the seller's promises. At each step there were transaction costs lessening the likelihood of a value-creating exchange. But eBay's digital platform reduces those burdens, and at an unprecedented scale.²⁶ Now millions of buyers can find, review, and purchase items on their phones, using the platform's rating system and payment features to ensure a smooth and less costly transaction with sellers. eBay exacts a fee on each exchange and everyone—buyer, seller, and the company—is happy.²⁷

The second way platforms attract users is less intuitive, but more important in terms of growth and dominance: network effects. At their most basic level, network effects occur when platforms reach a critical mass of users, thereby making the platform more desirable for each

²¹ Lobel, *supra* note 17, at 94.

²² Kaleigh Rogers, *Let's Talk About Mark Zuckerberg's Claim that Facebook 'Doesn't Sell Data'*, MOTHERBOARD (Apr. 22, 2018, 11:12 AM), https://motherboard.vice.com/en_us/article/8xkdz4/does-facebook-sell-data.

²³ See, Stephen P. Borgatti et al., *Network Analysis in the Social Sciences*, 323 SCI. 892, 892–93 (2009).

²⁴ See Harold Demsetz, *The Cost of Transacting*, 82 Q.J. ECON. 33, 35 (1968) (empirical study of transaction costs at the New York Stock Exchange). A transaction cost is defined as a cost in making any economic trade when participating in a market. *Id.* See also EVANS & SCHMALENSEE, *supra* note 2, at 15, 77. (discussing how platforms facilitate transactions).

²⁵ *Id.*

²⁶ 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).

²⁷ See R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 387 (1937) (asserting that the purpose of firms is to reduce transaction costs).

additional user that joins.²⁸ The more people that use Instagram, the more people will want to use Instagram because there will be more content on the platform for everyone to view.

While powerful, this is just one aspect of network effects. Studies have shown that when networks not only have many users participating, but also more *groups* on each side of the transaction, additional positive externalities arise. This means that the more individual users who join Instagram, all of us scrolling through pictures are better off, but so too are the advertisers who utilize the platform.²⁹ Because all sides of a transaction benefit as the network grows, network effects create inertia that furthers the platform's size and popularity.³⁰ Which of course creates more transactions for the platform company's benefit.³¹

Relatedly, if a platform company achieves a critical mass and network effects occur, it can make revenues quickly at very low marginal cost.³² Airbnb provides a good example. The company's product is a digital platform connecting renters and hosts, and it receives a percentage of each transaction. 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 a significant amount of additional work or cost. This is why in 2017, Airbnb was able to make \$2.6 billion in revenue with 3,100 employees,³³ while Hyatt Hotels made its \$4.4 billion in revenue but required over 31 times the workforce.³⁴ Generating more revenue for less cost than a competitor provides a significant market advantage.³⁵

In addition to the "standard" network effects explained above, platforms also attract and

²⁸ See Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 423 (1985); Arun Sundararajan, *Network Effects* (2006), <http://oz.stern.nyu.edu/io/network.html> (last visited Apr. 2, 2018).

²⁹ Justus Haucap & Ulrich Heimeshoff, *Google, Facebook, Amazon eBay: Is the Internet Driving Competition or Market Monopolization?*, DICE Discussion Paper, No. 83 (Jan. 2013); EVANS & SCHMALENSEE, *supra* note 2.

³⁰ See Matthew Rosenberg, Nicholas Confessore & Carole Cadwalladr, *How Trump Consultants Exploited the Facebook Data of Millions*, N.Y. TIMES (Mar. 17, 2018), <https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-campaign.html>. But see FRANK PASQUALE, *THE BLACK BOX SOCIETY: THE SECRET ALGORITHMS THAT CONTROL MONEY AND INFORMATION* (2015).

³¹ Consider Facebook, which has over a billion users and droves of advertisers. An upstart competitor is unable to offer potential users the same ability to connect with (or market to) friends, family, and strangers. As a result, Facebook's network advantage creates and reinforces its market power. We do not claim, however, that is impossible for competition to enter into the marketplace (*see, e.g.*, Facebook versus MySpace, and Ask Jeeves! versus Google), only that it is unlikely for them to be successful. Stuart Dredge, *MySpace- What Went Wrong: "The Site Was a Massive Spaghetti-Ball Mess,"* GUARDIAN (Mar. 6, 2015, 4:04 AM), <https://www.theguardian.com/technology/2015/mar/06/myspace-what-went-wrong-sean-percival-spotify>; Kevin Ryan, *The Long, Sad Story of Ask.com*, ADAGE (Nov. 12, 2012), <https://adage.com/article/digitalnext/long-sad-story-jeeves/147091/>.

³² Diane Coyle, *Digital Platforms Force a Rethink in Competition Theory*, FINANCIAL TIMES (Aug. 17, 2017), <https://www.ft.com/content/9dc80408-81e1-11e7-94e2-c5b903247afd>. Marginal cost is the cost added by producing one additional unit of a product or service.

³³ Olivia Zaleski, *Inside Airbnb's Battle to Stay Private*, Bloomberg (Feb. 6, 2017; 3:24 PM), <https://www.bloomberg.com/news/articles/2018-02-06/inside-airbnb-s-battle-to-stay-private>; Craig Smith, *100 Amazing Airbnb Statistics*, DMR (March 31, 2018), <https://expandedramblings.com/index.php/airbnb-statistics/>.

³⁴ Hyatt Hotels Corporation (2018), <http://reviews.greatplacetowork.com/hyatt-hotels-corporation> (last visited April 12, 2018) (explaining that Hyatt has over 97,000 employees).

³⁵ None of this is destined, of course. If a platform builds a userbase too quickly, it is possible the platform may deteriorate. See Justus Haucap & Ulrich Heimeshoff, *Google, Facebook, Amazon, eBay: Is the Internet Driving Competition or Market Monopolization* 6 (Düsseldorf Institute for Competition Economics No. 83 2013), http://www.dice.hhu.de/fileadmin/redaktion/Fakultaeten/Wirtschaftswissenschaftliche_Fakultaet/DICE/Discussion_Paper/083_Haucap_Heimeshoff.pdf.

retain users by taking advantage of “data network effects.”³⁶ This occurs

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 to come back often and contribute more data—and so on and so forth.³⁷

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, which will swiftly cause the platform to collapse.³⁸ Design choices for these interfaces are not made by chance, however. Platform companies rely on sophisticated algorithms aimed at engaging users, and these algorithms live on data. 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. Over time, platform companies taking 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.³⁹

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. But a few platform companies have become something more. They have become dominant, reaching an unprecedented scale in terms of economic and social impact.⁴⁰ The three companies described below are ones that many of us could not imagine living without, and they serve as exemplars of the capabilities of platforms.⁴¹

Google. Ninety percent of the world’s Internet searches are facilitated via a Google-controlled portal.⁴² Economically, it is one of the most successful companies in the world with

³⁶ Matt Turck, *The Power of Data Network Effects*, MATTURCK.COM (Jan. 1, 2016), <http://mattturck.com/2016/01/04/the-power-of-data-network-effects>.

³⁷ *Id.*

³⁸ Mark Bonchek and Sangeet Paul Choudary describe this as “flow,” or “how well the platform fosters the exchange and co-creation of value.” *Three Elements of a Successful Platform Strategy*, HARVARD BUS. REV. (2013), <https://hbr.org/2013/01/three-elements-of-a-successful-platform>.

³⁹ Turck, *supra* note 36.

⁴⁰ The unprecedented ability to create and grow markets at exceptional speed is characterized as “supercharging.” This is enabled by powerful computer chips, the Internet, broadband, and modern programming languages. As a result, one or two platforms will emerge in each modality, many of which will eventually go public. *See* EVANS & SCHMALENSSEE, *supra* note 2, at 40-45.

⁴¹ Which of course makes potential manipulation by these platforms and ones like them all the more concerning.

⁴² Greg Ip, *The Antitrust Case Against Facebook, Google and Amazon* (Jan. 16, 2018, 11:52 AM), <https://www.wsj.com/articles/the-antitrust-case-against-facebook-google-amazon-and-apple-1516121561>. For a brief history of Google’s development, see generally John Battelle, *The Birth of Google*, WIRED (Aug. 01, 2005), <https://www.wired.com/2005/08/battelle/> (describing the origin of the PageRank algorithm).

profits topping \$20 billion per year.⁴³ Its revenue comes from connecting advertisers with consumers through highly efficient targeting. This targeting is made possible by the massive amounts of data Google collects from its on and offline products, the former of which includes Google search, Google Assist, Gmail, and Google Maps, and the latter of which includes Nest, Google Home, and Chromecast.⁴⁴

Uber. With a valuation in excess of \$100 billion and a market share approaching 80 percent, Uber is a leader among ridesharing platforms.⁴⁵ While not the first ridesharing company, Uber's commitment to growth (sometimes compromising profits and compliance with the law to do so) has resulted in its dominance.⁴⁶ Uber reduces transaction costs through its app, which helps drivers and riders connect with one another. It also processes payments and maintains reputation systems that puts pressure on both sets of users to interact appropriately and in good faith. 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. In particular, its food delivery service, Uber Eats, has become incredibly popular, quickly consuming first-moving firms.⁴⁷

Airbnb. Similar to Uber's model, Airbnb's platform facilitates short term and informal accommodations between hosts and guests.⁴⁸ Over the years it has seen exponential growth due to both standard and data network effects—raising the number of rentals on its platform from 47,000 to 17 million in just five years.⁴⁹ Beyond helping hosts and guests find one another, it provides payment services, insurance, reputation systems, and dispute resolution services, among other features.⁵⁰

Google, Uber, and Airbnb are just three of a vast array of platform companies.⁵¹ 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. 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.

⁴³ SCOTT GALLOWAY, *THE FOUR: THE HIDDEN DNA OF AMAZON, APPLE, FACEBOOK, AND GOOGLE 4* (2018).

⁴⁴ Nikhil Dandekar also outlines five ways Google became dominant: its search speed, deep indexing, PageRank algorithm, simple interface, and query-specific snippets. *How Did Google Surpass All Other Search Engines*, MEDIUM (March 8, 2017), <https://medium.com/@nikhilbd/how-did-google-surpass-all-the-other-search-engines-8a9fddc68631>.

⁴⁵ GALLOWAY, *supra* note 43, at 30 (2018). Liz Hoffman, Greg Bensinger & Maureen Farrel, *Uber Proposals Value Company at \$120 Billion in a Possible IPO* (Oct. 16, 2018, 1:28 PM), https://www.wsj.com/articles/uber-proposals-value-company-at-120-billion-in-a-possible-ipo-1539690343?mod=hp_lead_pos1.

⁴⁶ Eric Biber et al., *Regulating Business Innovation as Policy Disruption: From the Model T to Airbnb*, 70 VAND. L. REV. 1561 (2017).

⁴⁷ Ashley Sams, *Uber Eats is Using AI to Surpass its Competitors (And It's Working)* (Oct. 3, 2018), <https://www.marketingaiinstitute.com/blog/uber-eats-artificial-intelligence>.

⁴⁸ 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>.

⁴⁹ *Airbnb Summer Travel Report: 2015*, AIRBNB 3 (Sept. 9, 2015), <http://blog.atairbnb.com/wp-content/uploads/2015/09/Airbnb-Summer-Travel-Report-1.pdf>.

⁵⁰ *Payment*, AIRBNB, <https://www.airbnb.com/help/article/92/when-am-i-charged-for-a-reservation> (last visited Nov. 2, 2018); *Reviews*, AIRBNB, <https://www.airbnb.com/help/topic/1137/reviews> (last visited Nov. 2, 2018); *Help*, AIRBNB, <https://www.airbnb.com/help/> (last visited Nov. 2, 2018); *The \$1,000,000 Host Guarantee*, AIRBNB, <https://www.airbnb.com/guarantee> (last visited Nov. 8, 2018).

⁵¹ Evans & Gawer, *supra* note 6, at 14.

C. Platforms as Mediators

Dominant platforms are unmatched facilitators, that much is clear. But unlike traditional platforms that 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, observes, and ultimately influences almost every choice a user makes when interacting on or with the platform.⁵²

Exactly how platforms mediate users is described in detail below,⁵³ 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.⁵⁴ 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).⁵⁵ Sellers and sharers comprise the supply side of the equation, while demand side users can be broken into everyday consumers and regulators.

While legal and business scholars do not often categorize regulators as demand side users, this is an oversight.⁵⁶ As explained below, avoiding regulation is inherent in most platform company business models, and all three groups—sellers, buyers, and regulators—are mediated by platforms.⁵⁷

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. These game-like techniques keep drivers on the road.⁵⁸ 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.⁵⁹ These type of interface design choices play into drivers’ tendencies to avoid losses,⁶⁰ over value objects or rewards that are of limited availability,⁶¹ and repeat activities that follow irregular reward

⁵² Calo, *supra* note 17.

⁵³ See Part II.B., *infra*.

⁵⁴ These we recognize that their sometimes will be more than one side as is the case with sites like Facebook, which connects users and advertisers, users with users, and users wishing to sell things and users wishing to buy things on Facebook marketplace. EVANS & SCHMALENSEE, *supra* note 2.

⁵⁵ 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), and 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.

⁵⁶ See, *e.g.*, Calo, *supra* note 17 (describing users as either supply or demand side, and not including regulators).

⁵⁷ And as will be seen below, this subjects all to potential manipulation. See Part III.B., *infra*.

⁵⁸ Eva Feng & Zhenyu Zhao, *Building an Intelligent Experimentation Platform with Uber Engineering* (May 4, 2017), <https://eng.uber.com/experimentation-platform/>.

⁵⁹ *Id.*

⁶⁰ Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263 (1979).

⁶¹ ROBERT B. CIALDINI, *INFLUENCE: THE PSYCHOLOGY OF PERSUASION* (Harper Business ed., 2006).

patterns.⁶² 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.⁶³ 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 such experimentation to tweak the design of the interface—adding features, adjusting text, improving graphics, etc.—to encourage more transactions.⁶⁴

Second, platforms can use individual and demographic data about demand side users to modify design choices. This is possible because platforms’ views into the individual lives of their users is surprisingly clear and deep, and it extends far beyond collecting data within the platform’s app or website. With the use of cookies and background data collection, platforms can record GPS coordinates, picture information, phone data, and more to gain insights into each user’s patterns and preferences.⁶⁵ Uber, for example, can charge different rates based on how loyal their users are (do they frequently toggle back and forth between Uber and 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.⁶⁶

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. One is that regulators are also members of the public who engage in many personal social and financial transactions. As such, they come into contact with platforms all the time as users, hardly a surprising fact given how difficult dominant platforms are to avoid in daily life.⁶⁷ In addition, 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.⁶⁸

Platforms, however, 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 regulator interaction with the platform. This mediation can lead to changes in how regulators perceive platform operations, including the dangers they present.

⁶² Ronald Lee, Peter Sturmeijer & Lanny Fields, *Schedule-Induced and Operant Mechanisms That Influence Response Variability: A Review and Implications for Future Investigations*, 57 THE PSYCHOL. REC. 429 (2007).

⁶³ 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>.

⁶⁴ Jan Overgoor, *Experiments at Airbnb*, MEDIUM (May 27, 2014), <https://medium.com/airbnb-engineering/experiments-at-airbnb-e2db3abf39e7>.

⁶⁵ 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/>.

⁶⁶ 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>.

⁶⁷ 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 difficulties she experienced as she tried to live life without Facebook, Google, Apple, Microsoft, and Amazon).

⁶⁸ 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>.

To understand this more completely, consider Uber’s recent Greyball scandal. In March 2017, *The New York Times* exposed a program designed by Uber that made drivers inaccessible to regulators.⁶⁹ Dubbed “Greyball” by the company, the program identified users who were likely to be law enforcement officers based on their location, phone type, social media history, and credit card data.⁷⁰ When users were flagged as law enforcement by Uber’s algorithms, they were Greyballed—meaning when the presumed law enforcement officers attempted to get an Uber ride, they saw a law enforcement *version* of the app, populated with ghost cars. Presumably, Greyball was intended to preclude sting operations in locations where regulators were active by manipulating what those regulators saw.⁷¹

This type of conduct—using asymmetries of information afforded by a platform interface to avoid regulation—is seemingly an extreme example of mediation. But it is difficult to know 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.

II. 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.⁷² To do that, one must delve into the behavioral science at the heart of platform mediation. Once that is understood, which includes understanding how platforms use technologically delivered choice architecture to influence user decisions, the true conduct of platforms is revealed. This understanding will also serve as the foundation to assess the question at the core of this Article: 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 choice is made.⁷³ When a choice is presented to a person, *how* it is presented can have great impacts on their decision making.⁷⁴ That would make the person or entity “responsib[le] for organizing the context in which people make decisions” the “choice architect.”⁷⁵

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, we must start by considering the behavioral and cognitive science that underlies choice architecture itself.

⁶⁹ *Id.*

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² Matt Ward, *Product to Platform—Inside Amazon’s Dominance: How to Build a Powerful, Profitable Platform from Scratch*, MEDIUM (Apr. 18, 2018), <https://thinkgrowth.org/product-to-platform-inside-amazons-dominance-bacef9e80585>.

⁷³ THALER & SUNSTEIN, *supra* note 20, at 3–4, 6.

⁷⁴ *Id.* at 3.

⁷⁵ *Id.*

1. The Behavioral Science Underlying Choice Architecture

Behavioral science has a long history going back to the work of Max Weber, B.F. Skinner, and others.⁷⁶ Over this history, researchers in behavioral psychology have come to understand how systems of thinking and reasoning impact individual behavior.⁷⁷ Most recently, this work has been advanced and strengthened principally by two groundbreaking psychologists: Daniel Kahneman and Amos Trevrsky.⁷⁸ Kahneman and Trevrsky's "dual system theory," which has been validated through numerous studies across disciplines, is considered one of the great advancements in understanding how people make decisions when facing uncertainty.⁷⁹

Dual system theory explains that there are two separate cognitive systems underlying reasoning and decision making. The intuitive, or System 1, process is "fast, automatic, effortless, associative, and often emotionally charged."⁸⁰ Because it operates by associative memory, it is "governed by habit and therefore difficult to control or modify."⁸¹ This system of thinking, sometimes called the Automatic System, often does not seem like thinking at all.⁸² 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.⁸³ The speed and ease in which System 1 operates means that "most of the work of associative thinking is silent, hidden from our conscious selves."⁸⁴ 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."⁸⁵ Essentially, this type of cognition is instinctive, making behaviors feel as if they are "innately programmed."⁸⁶

In contrast, System 2, or the reasoning process, operates much more slowly and carefully.⁸⁷ It is "serial, effortful, and deliberately controlled," subject to logic and rules.⁸⁸

⁷⁶ See John Langton, *The Behavioural Theory of Evolution and the Weber Thesis*, 16 *SOCIOLOGY* 341, 343 (1982) (discussing Max Weber's reliance on behavioral psychology).

⁷⁷ See Jonathan St. B.T. Evans, *In Two Minds: Dual-Process Accounts of Reasoning*, 17 *COG. 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").

⁷⁸ The term "groundbreaking" is no hyperbole here. Kahneman, a psychologist, was awarded the Nobel Prize in economics, one of the few non-economists to have received it. Stephanie Denning, *How Kahneman Won The Nobel Prize*, *ECONOMIST* (Dec. 28, 2016), <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), <https://economix.blogs.nytimes.com/2009/10/14/are-non-economists-suddenly-taking-over-the-economics-nobel/>.

⁷⁹ 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 BEHAV. ECONOM. GUIDE 2016* 106 (Alian 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 the concept of two systems of reasoning is "at the core of extensive research in behavioral law and economics").

⁸⁰ Kahneman, *supra* note 79, at 1451. System 1 is actually not a single system, but a "set of sub-systems that operate with some autonomy." Evans, *supra* note 77, at 454.

⁸¹ Kahneman, *supra* note 79, at 1451.

⁸² THALER & SUNSTEIN, *supra* note 20, at 19.

⁸³ DANIEL KAHNEMAN, *THINKING, FAST AND SLOW* 52 (2011).

⁸⁴ *Id.* Kahneman suggests that the capabilities of System 1 include "innate skills that we share with other animals," such as to perceive the world we live in, recognize objects, orient our attention, avoid losses, and fear things that may hurt us. *Id.* at 21–22.

⁸⁵ Evans, *supra* note 77, at 454.

⁸⁶ *Id.*

⁸⁷ See Cass R. Sunstein, *Do People Like Nudges?*, 68 *ADMIN. L. REV.* 177, 206 (2016); Keith E. Stanovich &

System 2 thinking, also referred to 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.⁸⁹ Indeed, this system is able to engage in abstract hypothetical thinking its counterpart cannot.⁹⁰ Not surprisingly, then, System 2 thinking requires significantly more cognitive load than System 1.⁹¹ A person using their System 2 process at “full tilt” can only do so for a very short time.⁹² 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.⁹³ Notably, this type of thinking is what gives us the feeling and “experience of agency, autonomy, and volition,”⁹⁴ making System 2 thinking a “distinctly human facility . . . of great importance.”⁹⁵ The features of each thinking system are shown in Table 1.⁹⁶

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

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. Because System 1 thinking is effortless and highly efficient, it is suitable for making the vast majority of our routine decisions—imagine if we had to make a deliberate choice for each one of our daily activities.⁹⁷ And in fact, there is some evidence that System 1 thinking can lead to better decisions even in non-routine contexts.⁹⁸

Richard F. West, *Individual Differences in Reasoning: Implications for the Rationality Debate?*, 23 BEHAV. & BRAIN SCI. 645, 658 (2000).

⁸⁸ Kahneman, *supra* note 79, at 1451.

⁸⁹ THALER & SUNSTEIN, *supra* note 20, at 20.

⁹⁰ Evans, *supra* note 77, at 454.

⁹¹ Sunstein, *supra* note 87, at 206. Heightened cognitive load is likely a product of the brain sifting through working memory, which is limited.

⁹² KAHNEMAN, *supra* note 83, at 31.

⁹³ *Id.* at 36–37. Part of this process is by constructing mental models or simulations, *i.e.*, hypothetical thinking. Evans, *supra* note 77, at 454.

⁹⁴ Pelle Guldberg Hansen & Andreas Maaloe 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 83, at 21.

⁹⁵ Evans, *supra* note 77, at 454.

⁹⁶ THALER & SUNSTEIN, *supra* note 20, at 21.

⁹⁷ KAHNEMAN, *supra* note 83, at 36.

⁹⁸ This appears to be limited to situations in which there may be gains in decision making efficiency without sacrificing analytical quality, which may happen as expertise increases and makes even difficult decisions somewhat intuitive. *See* Katherine L. Milkman, Dolly Chugh & Max H. Bazerman, *How Can Decision Making Be*

Yet for most of our difficult and important decisions, particularly those we have not encountered before, System 2 thinking is required to ensure a thoughtful, and likely more accurate, outcome.⁹⁹ There is a problem, however. Because of the greater cognitive load required to employ System 2, it is often supplanted by the less effortful System 1. 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.”¹⁰⁰ Thus, System 1 reactive thinking tends to proliferate anytime we are under significant cognitive load.¹⁰¹

This last point hints at the actual versus the perceived relationship between our two thinking systems. While most of us genuinely believe that we make decisions deliberately, the research tells us 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 susceptible to the automatic system taking over.¹⁰² In other words, because the brain is continually offloading decision making 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.¹⁰³

It should come as no surprise, then, that which thinking system is activated can have profound effects on decision making and behavior.¹⁰⁴ 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.

Take an example drawn from the public policy sphere. It turns out that enrolling in a 401(k) plan is an obstacle for many Americans, who on the whole do not save enough for retirement.¹⁰⁵ Roughly thirty percent of eligible employees fail to enroll in their company’s 401(k) plans.¹⁰⁶ 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.¹⁰⁷ Because these tasks

Improved?, 4 PERSPECTIVES 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).

⁹⁹ THALER & SUNSTEIN, *supra* note 20, at 21–22. This is especially true when we face decisions that are known to suffer from bias, such as “when evaluating diverse job candidates, estimating our percent contribution to a group project, or choosing between spending and saving. Milkman, Chugh & Brazerman, *supra* note 98, at 380.

¹⁰⁰ Kahneman, *supra* note 79, at 1451. Kahneman puts this more colloquially, calling System 2 “lazy.” KAHNEMAN, *supra* note 83, at 44. A third way is to say that System 2 has “low processing capacity and this requires high effort and the exclusion of attention to other matters.” Evans, *supra* note 77, at 456.

¹⁰¹ *Id.* See also, John Beshears & Francesca Gino, *Leaders as Decision Architects: Structure Your Organization’s Work to Encourage Wise Choices*, HARV. BUS. REV., May 2015, at 52, 52 (“As the cognitive energy needed to exercise System 2 is depleted, problems of bias and inadequate motivation may arise.”).

¹⁰² KAHNEMAN, *supra* note 83, at 31, 41 (explaining that people who are “cognitively busy” are less able to control their impulses).

¹⁰³ See *id.* at 1467 (citing experiments showing that “people mostly don’t think very hard and that System 2 monitors judgments quite lightly”). Even more troubling is that when a decision is arrived at through the automatic system, we often support it after-the-fact with the reflective system. We use System 2 to justify our System 1 conclusions. KAHNEMAN, *supra* note 83, at 45. A great example of this is how adamantly test subjects will argue that the surfaces in the “two tables” optical illusion are not the same length, even after measuring them. See THALER & SUNSTEIN, *supra* note 20, at 17–18.

¹⁰⁴ Milkman, Chugh & Brazerman, , *supra* note 98, at 381.

¹⁰⁵ THALER & SUNSTEIN, *supra* note 20, at 103, 106–07.

¹⁰⁶ *Id.* at 107.

¹⁰⁷ *Id.* at 108-09

were “a headache . . . many employees just put them aside.”¹⁰⁸ 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. Unfortunately, enrolling in a 401(k) is a task that requires a System 2 mind to complete.¹⁰⁹

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.¹¹⁰ Under this regime, enrollment rates skyrocketed, up to 98 percent in some cases.¹¹¹ Switching 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.

2. Choice Architecture’s Primary Tool—The Nudge

Although the concept of choice architecture has been around for many years,¹¹² 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.¹¹³ In what quickly became a bestseller, Thaler and Sunstein made the affirmative case for using choice architecture to alter individual behavior.¹¹⁴ They argued that deliberately structuring choice could help people make better decisions and cure irrational biases, benefiting themselves and society in the process.¹¹⁵ Thaler and Sunstein encouraged choice architects, particularly in the public policy realm, 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.”¹¹⁶ They labeled these devices *nudges*.¹¹⁷

The term “nudge” has entered the popular lexicon since the publishing of Thaler and Sunstein’s book, and now serves as a blanket term for many aspects of choice architecture.¹¹⁸ But as originally conceptualized, a nudge possesses three necessary attributes. First, a nudge has

¹⁰⁸ *Id.* at 109.

¹⁰⁹ THALER & SUNSTEIN, *supra* note 20, at 108.

¹¹⁰ *Id.* at 109.

¹¹¹ *Id.*

¹¹² See FELDMAN, *supra* note 79, at 89 (describing choice architecture approaches of debiasing and framing). See also, Eric J. Johnson & Daniel Goldstein, *Do Defaults Save Lives?*, 302 SCI. 1338, 1338 (2003) (explaining how defaults can influence choice in multiple ways).

¹¹³ THALER & SUNSTEIN, *supra* note 20.

¹¹⁴ 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”).

¹¹⁵ *Id.* at 6.

¹¹⁶ *Id.* at 3, 6.

¹¹⁷ *Id.* at 4.

¹¹⁸ Evan Selinger & Kyle Powys Whyte, *Nudging Cannot Solve Complex Policy Problems* 3 EURO. J. RISK REG. 26, 26 (2012). See also, BEHAVIORAL SCIENCE AROUND THE WORLD: PROFILES OF 10 COUNTRIES, WORLD BANK 8 (numerous uses of the word nudge in the context of a placing behavioral insights on the hype cycle).

to preserve freedom of choice. 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.”¹¹⁹ Thus, bans and mandates are not nudges, nor are many other familiar legal and regulatory tools like subsidies, taxes, fines, or criminal penalties.¹²⁰ In order to be a true nudge, a choice intervention must “allow [individuals] to go their own way.”¹²¹ What is left for choice architects intent on changing behavior are reminders, warnings, prompts, anchors, frames, and default rules.¹²²

Second, nudges must increase the welfare of the people subject to them. Thaler and Sunstein are not Pollyannaish here; they understand that nudging may be used to do harm.¹²³ 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.”¹²⁴ 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.”¹²⁵ Put another way, nudges should aid individuals in becoming more rational decision makers, thereby aligning their choices with their long-term self-interests.¹²⁶

The concept of nudging, then, can best be encapsulated as follows:

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.¹²⁷

Before moving on, one critical point remains: who determines what is a desirable choice or a better decision, and by what measure? While some believe this fundamental question has

¹¹⁹ Sunstein, *supra* note 87, at 417.

¹²⁰ *Id.*; THALER & SUNSTEIN, *supra* note 20, at 6.

¹²¹ Sunstein, *supra* note 87, at 417. That said, a nudge is free to “steer[] people in a particular direction.” *Id.* Not allowing someone to easily choose another path might transform a nudge into a “shove.” Richard J. Arneson, *Nudge and Shove*, 41 SOC. THEORY & PRAC. 668, 691 (2015).

¹²² *Id.* at 417, 428.

¹²³ *Id.* at 417, 420; THALER & SUNSTEIN, *supra* note 20, at 239–41.

¹²⁴ 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> [hereinafter, *Power of Nudges*]. Notably, Thaler and Sunstein highlight the special dangers of private nudges, although not necessarily those employed by platforms per se. See THALER & SUNSTEIN, *supra* note 20, at 239–40 (discussing private nudges aimed at consumers).

¹²⁵ THALER & SUNSTEIN, *supra* note 20, at 5.

¹²⁶ *Id.* at 6. See On Amir & Orly Lobel, *Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy*, 108 COLUM. L. REV. 2098, 2106–07 (2008) for a detailed discussion of the difference between *homo economicus*, who always makes rational decisions, and “the real ‘Human.’” See also Meredith J. Harbach, *Nudging Parents*, 19 J. GENDER, RACE & JUST. 73, 89–90 (2016). For purposes of this Article, it is assumed that making decisions as *homo economicus* is a positive for most people, and those peoples’ long-term preferences follow suit. These are admittedly significant assumptions. See Riccardo Rebonato, *A Critical Assessment of Libertarian Paternalism*, 37 J. CONSUMER POL’Y 357, 364 (2014).

¹²⁷ Scott Killingsworth, *Behavioral Ethics: From Nudges to Norms*, BRYANCAVE.COM 3 (2017), <http://ethicalsystems.org/content/behavioral-ethics-nudges-norms> (internal citations omitted).

not been adequately answered,¹²⁸ Thaler and Sunstein attempt to preempt it altogether by defining nudges as interventions that influence choices to make individuals better off “*as judged by themselves*.”¹²⁹ This standard, they argue, coupled with the ease in which nudges can be avoided, makes nudges autonomy respecting.¹³⁰

Choice architecture that fails to conform to these standards might be characterized as “sludge.”¹³¹ This is the use of behavioral science tools to “muck[] things up and make[] wise decision-making and prosocial activity more difficult.”¹³² 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.”¹³³

For example, in the public policy space, Thaler cites the IRS’s requirement that taxpayers fill out a lengthy form to claim the earned income tax credit, despite the agency already having the necessary information to automatically provide the credit.¹³⁴ This step results in many eligible taxpayers failing to get a tax break that Congress intended as a way to help the working poor. In the private sector, sludge is present when firms “encourage buyers to order [goods] to maximize profits rather than improve the buyer’s welfare.”¹³⁵ 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 package¹³⁶), causing the consumer to give up before claiming what is ultimately only an “illusion of a rebate.”¹³⁷ Thaler calls these type of activities “nudging for evil.”¹³⁸

B. Platforms Are 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.¹³⁹ Be it a function of mission, technological prowess, or fortuitous timing, platforms

¹²⁸ For example, a libertarian blog in the U.K. declared a “war on nudge” based largely on this issue, with many academics following suit. Pelle Guldborg Hansen & Andreas Maaloe Jespersen, *supra* note 94, at 3 (2013).

¹²⁹ THALER & SUNSTEIN, *supra* note 20, at 5.

¹³⁰ *Id.* at 6.

¹³¹ Richard H. Thaler, *Nudge, Not Sludge*, 361 SCI. 431, 431 (2018) [hereinafter, *Sludge*].

¹³² *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, *Power of Nudges*, *supra* note 124. 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).

¹³³ *Id.* See also, Thaler, *Power of Nudges*, *supra* note 124 (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”).

¹³⁴ Thaler, *Sludge*, *supra* note 131, at 431.

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.* Thaler provided 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, *Power of Nudges*, *supra* note 124. 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).

¹³⁹ See Todd Haugh, *Nudging Corporate Compliance*, 54 AM. BUS. L.J. 683, 699-700 (2017) [hereinafter *Nudging*]. See also, MAPI, *Just a Nudge: Behavioral Economics at the Office*, MANUFACTURERS ALLIANCE FOR

have incorporated this behavioral tool in almost all aspects of their business models.¹⁴⁰

The following provides a series of examples drawn from the platforms described in Part I.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").¹⁴¹ Because only six percent of all clicks on Google come from the second page of search results, search rank—getting on the first page—is critical for advertisers.¹⁴² However, Google 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.¹⁴³

Relatedly, Google has been accused of burying competitors in its search results.¹⁴⁴ For example, Kayak.com asserted that Google lowered Kayak's placement in favor of its own travel services, despite Kayak's popularity, which presumably would drive links to the company's site.¹⁴⁵ By contrast, when Google wants advertisers to pay more for local user traffic,¹⁴⁶ it

PRODUCTIVITY AND INNOVATION (Feb. 1, 2016), <http://www.mapi.net/blog/2016/02/just-nudgebehavioral-economics-office> (stating that the "idea of prodding people into making better decisions is a beguiling idea gaining traction with governments and employers alike" and discussing examples of nudging within corporations); Tanjim Hossain & John A. List, *The Behavioralist Visits the Factory: Increasing Productivity Using Simple Framing Manipulations*, 58 MGMT. SCI. 2151 (2012) (first field experiment using framing nudges to increase worker productivity).

¹⁴⁰ The examples to follow adequately support this claim, but another metric does as well: how many behavioral scientists are 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, <https://peoplescience.maritz.com/Articles/2018/How-Do-I-Get-Into-Behavioural-Economics?> (Nov. 29, 2018) (discussing Google's behavioral science teams). Google has been particularly outspoken regarding its use of behavioral science and nudging. See Evan Nesterak, *Google re:Work: Shaping the Future of HR*, BEHAVIORAL SCI. (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).

¹⁴¹ 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>.

¹⁴² *Id.* Google allows for only ten non-ad websites to appear on each search page.

¹⁴³ Indeed, there is an entire cottage industry for search engine optimization (SEO), which helps supply side users improve their rankings on Google. See generally (describing a consultant's strategies for improving placement on Google). 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>.

¹⁴⁴ 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>

¹⁴⁵ *Id.*

¹⁴⁶ 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).

intentionally drives down its own review pages (similar to TripAdvisor or Yelp) to increase revenue from local advertisers.¹⁴⁷ Since advertisers have little say about how Google ranks them, they must try to 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 non-transparent 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.¹⁴⁸ To do this, Google scans user emails for those that likely warrant a response and pushes them to the top of users’ email queues. Next to the emails’ subject lines, Google asks whether or not the user would like to respond.¹⁴⁹ Google does this, presumably, because it wants to make Gmail more user-friendly, which will in turn 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 I.B, Uber designs its choice architecture in surprising ways. It gamifies driver’s experiences on the app and modifies the screens drivers see according to the company’s preferences. 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.¹⁵⁰ Drivers, however, are often disappointed to find no riders at the ready when they arrive at these locations. Apparently, the drivers’ presence only helps Uber reduce wait times for riders, which improves the rider’s experience at the expense of the drivers.¹⁵¹

Uber looks at their mediation techniques as a benefit to drivers. The company claims “it feels like a game, not work.” 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 Uber’s games?¹⁵² Despite this, Uber spokesperson Michael Amodeo states that we “incentivize [drivers] to drive more But any driver can stop work literally at the tap of a

¹⁴⁷ “[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.” Ethan Wolff-Mann, *Google Might be Hiding the Fact That Its Own Reviews are Shoddy*, YAHOO! FINANCE (August 23, 2018), <https://finance.yahoo.com/news/google-might-hiding-fact-reviews-shoddy-135640955.html>.

¹⁴⁸ *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) (describing Google’s new Gmail nudging tool).

¹⁴⁹ G SUITE UPDATES, *supra* note 148.

¹⁵⁰ Scheiber, *supra* note 63.

¹⁵¹ *Id.*

¹⁵² *Id.* “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.” *Id.* 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>.

button—the decision whether or not to drive is 100 percent theirs.”¹⁵³ While that is true in a literal sense, it 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 your location and assess your reputation, it has additional information about everything from your phone battery levels and hardware models to your mobile network information. This “hidden” data can be used to predict how much you would be willing to pay for a ride through its “surge pricing” feature.¹⁵⁴ For example, if you are a young woman, with a low phone battery, in an area with high crime levels, Uber can increase the price it will charge you for a ride. Furthermore, Uber recently acquired a patent to detect whether or not a passenger is drunk based on how they spell words, the movement of the phone, and their location.¹⁵⁵ This type of nudging for higher fares is obviously targeting the automatic thinking system; it is attempting to trigger a decision based on fear for personal safety or impaired judgment.

Greyball, as mentioned in Part I.C.2., also shows how Uber’s choice architecture can influence regulators as demand side users. Similar to Google’s conduct with advertisers, Uber created a type of choice architecture that was extremely difficult to avoid and that completely altered user behavior—here by ensuring non-use of the company’s product by subterfuge. It is worth nothing that Uber was aware of the influence of its mediation, even if regulators initially were not. When *The New York Times* uncovered Uber’s activities, the company admitted to it; the public, not to mention the Justice Department,¹⁵⁶ was outraged. And the city of London did not renew Uber’s license to operate, in part because of the company’s practices.¹⁵⁷

3. Airbnb

Supply side. Airbnb is a master at experimenting on users to increase desired behavior and facilitate more transactions.¹⁵⁸ For example, it consistently tests the way it presents information to hosts to determine business strategies. “Are they 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? How much money they are leaving on the table?” Furthermore, similar to Uber’s gamification techniques, Airbnb creates various arbitrary 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

¹⁵³ Scheiber, *supra* note 63.

¹⁵⁴ Vedantam & Penman, *supra* note 66. Uber, however, denies using these capabilities to influence rider decisions. *Id.*

¹⁵⁵ Jordan Crook, *Uber Applies for Patent That Would Detect Drunk Passengers*, TECHCRUNCH <https://techcrunch.com/2018/06/11/uber-applies-for-patent-that-would-detect-drunk-passengers/> (last visited Feb. 19, 2019).

¹⁵⁶ Elizabeth Dwoskin & Craig Timberg, *Justice Department Opens Criminal Probe Into Uber*, WASH. POST (May 4, 2017), https://www.washingtonpost.com/news/the-switch/wp/2017/05/04/justice-department-opens-criminal-probe-into-uber/?utm_term=.17baaed8ea17.

¹⁵⁷ *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?intcmp=50167/>.

¹⁵⁸ Guarav Makkar, *Airbnb and the Art of Behavioral Influence*, UX COLLECTIVE (Sep. 7, 2018), <https://uxdesign.cc/how-airbnb-com-uses-behavioral-psychology-123dd50f5cf>.

decision making.

Demand Side. Like Uber, Airbnb modifies its choice architecture to prevent regulators from seeing the locations of rental properties. 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.¹⁵⁹ 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. One is the ubiquity of choice architecture within platform conduct. Virtually every aspect of a user's experience is mediated through technology that influences choice. The other is that the behavioral tools platforms are using appear to sit on a continuum, ranging from good nudges that benefit users to potentially "evil" sludge.¹⁶⁰ But how does one evaluate the 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, while balancing those costs against the beneficial ends to users that such nudges may afford.¹⁶¹ If it turns out that certain nudges are an effective way to increase 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.¹⁶²

1. The Autonomy Costs of Platform Nudging

To begin, it is important to recognize the ground on which are treading. In many ways it is new. While there have been a number of expositions in legal scholarship of consumer manipulation,¹⁶³ and even ones focused on companies' use of behavioral science,¹⁶⁴ only a few have focused their attention on "digital market manipulation."¹⁶⁵ Of those, none have focused

¹⁵⁹ See, e.g., 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).

¹⁶⁰ Thaler, *Sludge*, *supra* note 131, at 431.

¹⁶¹ Haugh, *Nudging*, *supra* note 139, at 715.

¹⁶² See Part III, *infra*.

¹⁶³ See, e.g., David A. Hoffman, *The Best Puffery Article Ever*, 91 IOWA L. REV. 1395 (2006); Micah L. Berman, *Manipulative Marketing and the First Amendment*, 103 GEO. L.J. 497 (2015); Richard Craswell, *Interpreting Deceptive Advertising*, 65 B.U.L. REV. 657 (1985).

¹⁶⁴ See, e.g., Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420 (1999); Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999); Shmuel I. Becher & Yuval Feldman, *Manipulating, Fast and Slow: The Law of Non-Verbal Market Manipulations*, 38 CARDOZO L. REV. 459 (2016); Sarah C. Haan, *The "Persuasion Route" of the Law: Advertising and Legal Persuasion*, 100 COLUM. L. REV. 1281 (2000).

¹⁶⁵ See, e.g., Calo & Rosenblat, *supra* note 17; Calo, *supra* note 17.

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. Because this is the deepest literature most relevant to our topic,¹⁶⁶ it is worth quickly surveying for some key points.

The first is that every scholar in the debate agrees that nudges have the potential to negatively impact individual autonomy. This includes impacting autonomy so much as to render a nudge unethical.¹⁶⁷ Indeed, any discussion of nudges quickly turns to concerns over their potential to coerce behavior in a way that impermissibly reduces individual autonomy.¹⁶⁸ The second is that autonomy is partly a function of transparency, and that non-transparency negatively impacts autonomy.¹⁶⁹ 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.¹⁷⁰ Bringing these two points together, the collective concerns represent the potential “autonomy costs” of nudging.¹⁷¹

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.”¹⁷² 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 her own ideas, values, and principles.¹⁷³ 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

¹⁶⁶ See, *e.g.*, Hansen & Jespersen, *supra* note 94; Calo, *supra* note 17; Rebonato, *supra* note 126, at 357; Daniel M. Hausman & Brynn Welch, *Debate: To Nudge or Not to Nudge*, 18 J. POL. PHIL. 123 (2010); John Hasnas, *Some Nudging About Nudging*, REGULATION, Summer 2016, <https://object.cato.org/sites/cato.org/files/serials/files/regulation/2016/6/regulation-v39n2-2.pdf>; Kevin Vallier, *On the Inevitability of Nudging*, 14 GEO. J. L. & PUB. POL’Y 817 (2016). 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).

¹⁶⁷ See Cass R. Sunstein, *The Ethics of Nudging*, 32 YALE J. ON REG. 413, 415 (2015) [hereinafter, *Ethics*].

¹⁶⁸ THALER & SUNSTEIN, *supra* note 20, at 11, 237; CASS R. SUNSTEIN, *THE ETHICS OF INFLUENCE: GOVERNMENT IN THE AGE OF BEHAVIORAL SCIENCE* 53–72 (2016). But see Vallier, *supra* note 166, 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).

¹⁶⁹ Karen Yeung, *Nudge as Fudge*, 75 MODERN L. REV. 122, 144 (2012). This stems from the concern that nontransparent choice architecture is “highly vulnerable to abuse.” *Id.*

¹⁷⁰ See Rebonato, *supra* note 126, at 360 (“The weaker the ability to monitor, the more the electorate has to rely on the benevolence of the ruler.”).

¹⁷¹ Haugh, *Nudging*, *supra* note 139, at 688.

¹⁷² Yeung, *supra* note 169, at 135. 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 (Faculty of Bus. Admin. and Econ., Univ. of Marburg, Joint Discussion Paper Series in Econ., No. 33-2015), <https://www.econstor.eu/bitstream/10419/125535/1/837886600.pdf> (highlighting two competing definitions impacting the ethics of nudges). But see, Calo, *supra* note 17, at 1032 (suggesting there is no stable definition of autonomy in moral or political theory).

¹⁷³ Yeung, *supra* note 169, at 135 (citing Isaiah Berlin, *Two Concepts of Liberty*, in *THE PROPER STUDY OF MANKIND* (Henry Hardy & Roger Hausheer eds., 1998)).

reference to reasons that the agent has identified and endorsed.”¹⁷⁴

It should be noted that those legal scholars considering behavioral manipulation appear to adopt a similar set of principles. Although he would not agree to a firm definition of autonomy, Ryan Calo, who has written most on digital market manipulation, sees problematic autonomy costs as “measurable departures from the self-interested course that autonomous agents generally follow.”¹⁷⁵ 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 decision making that limits each consumer’s “ability to pursue his or her own self-interest.”¹⁷⁶ Thus, Calo’s concerns seem to be infused with the same notions of autonomy shared by others.¹⁷⁷

What type of nudges, then, negatively impact autonomous decision-making 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 in the direction preferred by the choice architect.”¹⁷⁸ Nudges that operate by exploiting an individual’s tendency to act unreflectively via System 1 thinking are likely inconsistent with demonstrating respect for individual autonomy.¹⁷⁹ The reason is

[they] entail not letting . . . actions be guided by principles that [an individual] can underwrite . . . [t]hey can be said to be irrational in so far as what is driving [the individual’s] action does not constitute a reason for [their] action (i.e. not a feature of the action that [they] endorse as a feature that makes the action desirable).¹⁸⁰

Such nudges are therefore “irrationality-exploiting” and impose high autonomy costs that may constitute behavioral manipulation.¹⁸¹

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 decision-making.¹⁸² 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 one’s ability to underwrite choice.¹⁸³ These “deliberation tools” sit opposite irrationality-exploiting nudges; rather than taking advantage of cognitive faults, they “appeal[] to individual reason.”¹⁸⁴ These are low autonomy cost nudges and are less problematic in terms of

¹⁷⁴ *Id.* This sounds very similar to Thaler and Sunstein’s “as judged by themselves” standard for nudges. See THALER & SUNSTEIN, *supra* note 20, at 5.

¹⁷⁵ Calo, *supra* note 17, at 1033 (citing Amitai Etzioni, *Behavioral Economics: Toward a New Paradigm*, 545 AM. BEHAV. SCIENTIST 1099, 1100 (2011)).

¹⁷⁶ *Id.* at 999.

¹⁷⁷ This includes other legal scholars focused specifically on nudges. See Sunstein, *Ethics*, *supra* note 167, at 427 (describing legitimate nudges as ones that increase “people’s own powers of agency”).

¹⁷⁸ Yeung, *supra* note 169, at 135–36.

¹⁷⁹ Luc Bovens, *The Ethics of Nudge*, in PREFERENCE CHANGE: APPROACHES FROM PHILOSOPHY, ECONOMICS AND PSYCHOLOGY 2017 (Till Grune-Yanoff & Sven Ove Hansson eds., 2009).

¹⁸⁰ Yeung, *supra* note 169, at 136 (citing Bovens, *supra* note 179, at 210) (emphasis added).

¹⁸¹ Hansen & Jespersen, *supra* note 94, at 23.

¹⁸² See Sunstein, *Ethics*, *supra* note 167, at 427 (describing “educative nudges”).

¹⁸³ See Yeung, *supra* note 169, at 132–33 (suggesting that government information campaigns, mandatory disclosure laws, and mandatory cooling off periods are examples of autonomy respecting nudges).

¹⁸⁴ *Id.* at 137–38.

manipulation.¹⁸⁵

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 decision-making; it would be difficult to argue that a nontransparent nudge allows a “fully informed agent” to arrive at their decision “through a process of rational self-deliberation.”¹⁸⁶ All nudges have some weaknesses in this regard.¹⁸⁷ While a lack of transparency does not necessarily mean a nudge is manipulative, it does increase the potential that it negatively impacts autonomy.¹⁸⁸ This concern would appear to be especially salient in the context of companies attempting to nudge consumers or their employees.¹⁸⁹

Additionally, nudges are generally considered most effective when they are least transparent to the person being nudged. Although some recent studies suggest otherwise,¹⁹⁰ alerting people to nudges may undermine their ability to influence behavior.¹⁹¹ As Luc Bovens puts it, nudges “work best in the dark.”¹⁹² That is likely true as an empirical proposition, and it also heightens the concern that nontransparent nudges increase autonomy costs and potential manipulation.

2. The Beneficial Ends to Users that Nudges May Provide

A consideration of autonomy costs does not end the normative analysis concerning platform manipulation. Even if platform nudges impinge on user autonomy, that does not necessarily foreclose them as unethical uses of choice architecture.¹⁹³ To avoid what Sunstein

¹⁸⁵ Some would disagree, arguing that almost any intervention in decision making is manipulation. *See, e.g.,* William Glod, *How Nudges Often Fail to Treat People According to Their Own Preferences*, 41 *SOC. THEORY & PRAC.* 599, 601 (2015) (cataloging arguments against nudging by arguing, in part, that all nudges raise transaction costs to the nudgee and thereby limit autonomy).

¹⁸⁶ *Id.* at 135.

¹⁸⁷ *See* Haugh, *supra* note 139, at 727-28 (discussing how public policy nudges are implemented by agencies and not often subject to advanced disclosure or debate).

¹⁸⁸ Yeung, *supra* note 169, at 143-44; Rebonato, *supra* note 126, at 360. Thaler and Sunstein appreciate the concerns raised by non-transparency and address it by “endorsing” Rawls’ publicity principle, which “[i]n its simplest form . . . bans government from selecting a policy that it would not be able or willing to defend publicly to its own citizens.” THALER & SUNSTEIN, *supra* note 20, at 244.

¹⁸⁹ Haugh, *supra* note 139, at 728.

¹⁹⁰ *See* Hendrik Bruns, et al., *Can Nudges Be Transparent and Yet Effective?*, 65 *J. ECON. PSYCHOL.* 41, 49 (2018) (finding through various experiments that a defaults nudge increased contributions to climate protection even when complemented by disclosures regarding the potential influence of the default, its purpose, or both); George Lowenstein, et al., *Warning: You Are About to Be Nudged*, 1 *BEHAV. SCI. & POL’Y* 35 (2015) (similar finding regarding defaults for advanced medical directives).

¹⁹¹ For example, when you explain to drivers that the white lines painted on sections of Lake Shore Drive in Chicago are a visual trick intended to nudge slower driving, they may consciously ignore the trick the next time and speed as they did before the nudge was implemented. *See* THALER & SUNSTEIN, *supra* note 20, at 37-39, 239-41 (the lines work by making drivers feel as if they are traveling faster, causing them to slow down around the dangerous turn). In fact, some transparent nudges may backfire and decrease the desired behavior. *See* Selinger & Whyte, *supra* note 118, at 932 (relating that a GPS device that flashes red and notes updated projected trip time when speeding occurs prompts some to drive faster).

¹⁹² Bovens, *supra* note 179, at 217.

¹⁹³ 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 169, at 139.

calls the trap of abstraction,¹⁹⁴ each platform nudge must be evaluated on a case-by-case basis and “in light of the broader context in which it is proposed.”¹⁹⁵ The reason is that 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).¹⁹⁶

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, and literacy,¹⁹⁷ which would suggest a positive means-ends calculus, no real world data exists demonstrating that platform users benefit from mediated nudges.¹⁹⁸ In fact, the evidence would seem to be going the other way.¹⁹⁹ 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.²⁰⁰ Accordingly, we turn to a few of the platform nudges highlighted above.²⁰¹

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 employing 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 (up) the E axis. This places the nudge in one of four quadrants, with the upper left being the least manipulative, and the lower right being the most manipulative. The matrix is depicted in Graph 1, below.

¹⁹⁴ SUNSTEIN, *supra* note 168, at 23.

¹⁹⁵ Yeung, *supra* note 169, at 138.

¹⁹⁶ See Bovens, *supra* note 179, at 217; Yeung, *supra* note 169, at 139. Considering this type of consequentialist perspective is important for a complete normative evaluation of ethicality. See R.C. SEKHAR, *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).

¹⁹⁷ See THALER & SUNSTEIN, *supra* note 20, at 157, 112, 199.

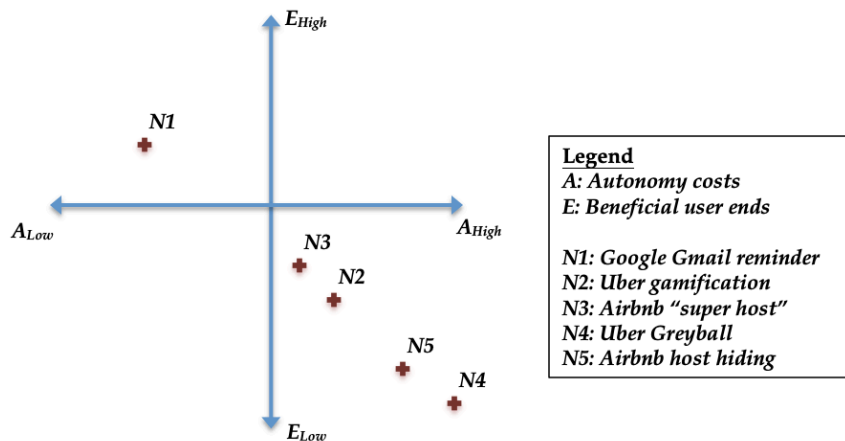
¹⁹⁸ It is important to note that the analysis is *not* whether nudging offers beneficial ends to platform companies or society at large. Certainly, platforms have created incredible economic value, and arguably much social value (although a debate rages as to how much and on what precise basis). See Chavie Leiber, *Tech Companies Use “Persuasive Design” to Get Us Hooked. Psychologists Say It’s Unethical*, VOX (Aug. 8, 2018), <https://www.vox.com/2018/8/8/17664580/persuasive-technology-psychology>. But our focus is narrower. Because nudges are premised on the idea that they “improve the welfare of those being nudged,” the means-ends analysis is targeted there. Thaler, *supra* note 124. Of course, a nudge that benefits a user may also benefit the platform and increase welfare overall. See Chuong Nguyen, *Need a Nudge? Gmail’s New Email Reminder System Goes Live*, DIGITAL TRENDS (May 14, 2018), <https://www.digitaltrends.com/computing/google-gmail-nudge/>.

¹⁹⁹ 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. Scheiber, *supra* note 63.

²⁰⁰ Yeung, *supra* note 169, at 138.

²⁰¹ See Part II.B., *supra*.

Graph 1: Platform manipulation matrix



By way of illustration, five nudges currently being used by platforms that were analyzed earlier are represented in Graph 1. 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. Also, 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. For one, while they are transparent in a sense because the drivers can see they are being rewarded in various ways, there are many hidden aspects. This includes 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. And the choice architecture would seem to benefit demand side users and Uber more than 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 would likely fall nearby for similar reasons (N3).

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 and code enforcement officers with the power to regulate the company. This goes beyond a nudge and can be considered the worst kind of sludge. The nudge is nontransparent, 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 would likely be categorized similarly, although there may be legitimate privacy interests for hosts furthered by the practice (N5).

Lastly is Uber’s demand side price discrimination based on user information such as phone battery life, gender, location, or intoxication levels. While Uber has the capability to alter prices based on these factors, and indeed can change the entire platform interface to reflect them, because it is unclear whether the company has actually nudged a user to pay a higher fare in this

manner, we will not fully evaluate the practice. However, if such a nudge was 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.²⁰²

III. The Code of the Platform

Having surveyed the composition of platforms and evaluated various nudges that along our manipulation matrix—some of which are clearly problematic—we now consider platform regulation. As we will note briefly, existing legal and regulatory frameworks fail to offer much protection to users.²⁰³ Thus, we turn to ethics as a guide to individual and organizational behavior. Intending to spur more robust debate from the variety of stakeholders impacted by platforms, we introduce an ethical code intended to prompt reflection upon ways in which platform technologies can continue to be deployed, but in a responsible and sustainable manner.

A. Limitations of Existing Law

Consistent with what we have shown throughout this Article, 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 U.S. 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.²⁰⁴ 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.

In order to manipulate users, a platform must first observe user behavior. In this regard, platforms enjoy relatively free reign because the U.S. does not have a comprehensive privacy regime to protect users from companies wishing to access their data.²⁰⁵ Instead, most privacy laws in the U.S. pertain only to specific types of data collection and govern its use in relatively narrow contexts, such as consumer credit (the Fair Credit Reporting Act) or health data (Health Insurance Portability and Accountability Act).²⁰⁶ Notably, this lax approach to privacy vis-à-vis

²⁰² 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) (the principles of neurolinguistic programming suggest that people tend to favor visual, auditory, or kinesthetic learning channels).

²⁰³ See generally, Lawrence Lessig, *Law Regulating Code Regulating Law*, 35 LOY. U. CHI. L.J. 1, 1 (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).

²⁰⁴ For example, the CEO of Facebook, Mark Zuckerberg's testimony before a joint session of the Senate commerce and judiciary committees demonstrated Congress's lack of understanding about how basic platform companies operate. 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>. Lack of political will also comes from innovation exceptionalism, which is pervasive in American politics. Innovation exceptionalism is the notion that regulators must first do no harm to innovators and that the technologies of today that improve our life could have only occurred in the U.S. with its relatively free and unregulated marketplace. Abbey Stemler, *Innovation Exceptionalism* (2019) (on file with the author).

²⁰⁵ Various provisions in the U.S. Constitution and state constitutions, of course, operate to protect individuals from privacy invasion by the government, but they do not speak to invasions by other private individuals or companies.

²⁰⁶ Joel R. Reidenberg, *Privacy Wrongs in Search of Remedies*, 54 HASTINGS L.J. 877, 881 (2003).

consumers and private firms contrasts dramatically with European approaches. European regulators, especially those in Germany, would cut off some of the data collection necessary for manipulation at much earlier stages and in a broader array of situations.²⁰⁷

Second, platforms 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. For example, if by chance 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.²⁰⁸

Third, beyond data collection and experimentation, the presentation of information and a platform's overall choice architecture could possibly come under the purview of the FTC's truth in advertising rules.²⁰⁹ Or possibly Section 5 of the Federal Trade Commission Act, which prohibits unfair and deceptive trade practices. However, for both sets of laws, the FTC has yet to assert its authority so broadly.²¹⁰ In fact, the FTC really has only come close to punishing platforms for observation and experimentation when platforms violate their *own* privacy policies. For example, when the FTC learned that Uber was using a "god view" to track celebrities and politicians, the commission stepped in to regulate under its Section 5 power.²¹¹

Finally, as for manipulation of users itself, U.S. law says very little. Some prior interpretations of the FTC and FCC rules regulating subliminal advertising, product placement, and bait and switch advertising are tangentially, but not directly, related to digital manipulation.²¹² Both agencies would have to take great strides to engage in any form of modernization in terms of regulating a platform-based market.

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 possibilities for class actions.²¹³ In the end, there is no direct legal route for protecting users from manipulation.

²⁰⁷ 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>.

²⁰⁸ For analysis of experimentation on mediated users a rule for federally funded research that requires review of the experiment set up by an institutional review board and user consent see James Grimmelman, *Law and Ethics of Experiments on Social Media Users*, 13 COLO. TECH. J. 29 (2015); 45 C.F.R. § 46.103 (2014).

²⁰⁹ *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 Feb. 2, 2019).

²¹⁰ 15 U.S.C. § 45(a)(1). See generally, *Big Data: A Tool for Inclusion or Exclusion?*, FTC (Jan. 2016), <https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf>. See also, Letter from James Grimmelman & Leslie Meltzer Henry, Professors of Law, Univ. of Md. To Edith Ramirez, Chairwoman, Fed. Trade Comm'n (July 17, 2014), <http://james.grimmelman.net/files/legal/facebook/FTC.pdf> (describing how Section 5 could be used to prevent manipulation).

²¹¹ 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/>.

²¹² Peter S. Sloane & Rachel M. Weiss, *Advertising: Overview*, PRACTICAL LAW (2013), http://www.leasonellis.com/wp-content/uploads/2013/11/Advertising-Overview_Marketing.pdf.

²¹³ Jean R. Sternlight & Elizabeth J. Jenson, *Using Arbitration to Eliminate Consumer Class Actions: Efficient Business Practice or Unconscionable Abuse?*, 67 L. CONTEMPORARY PROBLEMS 75 (2004).

B. The Role for Ethics

Given the paucity of legal protections, those seeking to limit manipulative platform conduct must find alternatives. We argue that an ethical code can serve this function. But it is incumbent upon us to first prove the value of ethics as a means of constraining platform conduct. Fortunately, the value proposition for adoption and integration of an ethical code by a platform-based company is demonstrated along three dimensions: extrinsic, intrinsic, and strategic. Each has independent merit, but taken in the aggregate, the rationale for serious consideration of an ethical code—particularly in the absence of clear legal or regulatory controls—is compelling.

Paying attention to ethics is “good” for business along a number of extrinsic and intrinsic dimensions.²¹⁴ By extrinsic, we mean the bottom line, *i.e.*, financial considerations, and by intrinsic, we mean less precisely measurable impacts such as corporate culture and employee well-being. Both extrinsic and intrinsic foci, the research reveals, are linked. Margolis and Walsh examined 80 different studies compiled over the last 30 years of the twentieth century, finding that financial performance was positively correlated with “corporate social performance” (*i.e.*, corporate ethical behavior) in a majority of the studies.²¹⁵ Summarizing their research for a report to the Business Roundtable Institute for Corporate Ethics, the researchers argued that “paying attention to ethics issues and initiatives does not destroy financial value and does not distract managers from creating value for the company’s stakeholders.”²¹⁶

Recent research conducted by the Ethics & Compliance Initiative (ECI) has also identified a multitude of benefits flowing to businesses that take ethics seriously.²¹⁷ Specifically, ECI found that those 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 wrongdoing or fail to report it.²¹⁸ Not surprisingly, employees who rate their organization and its leadership as committed to ethics report higher rates of satisfaction and commitment, which results in less turnover and greater productivity.²¹⁹ Higher rates of creativity and innovation are also found in organizations where trust levels result in perceptions of more openness and concern for employee wellbeing.²²⁰ While we acknowledge that examples can surely be found where unethical organizations have

²¹⁴ Silke Astrid Eisenbeiss, Daan Van Knippenberg, & Clemens Maximilian Fahrbach, *Doing Well by Doing Good? Analyzing the Relationship Between CEO Ethical Leadership and Firm Performance*, 128 J. BUS. ETHICS 635, 636-646 (2015).

²¹⁵ JOSHUA D. MARGOLIS AND JAMES P. WALSH, *PEOPLE AND PROFITS? THE SEARCH FOR A LINK BETWEEN A COMPANY’S SOCIAL AND FINANCIAL PERFORMANCE* (2001). Only 4% of the studies indicated an adverse financial impact, with the remainder of the studies reporting no relationship or mixed results.

²¹⁶ JOSHUA MARGOLIS, JAMES WALSH, AND DEAN KREHMEYER, *BUILDING THE BUSINESS CASE FOR ETHICS* 9 (Business Roundtable Institute for Corporate Ethics) (2006).

²¹⁷ *The State of Ethics & Compliance in the Workplace*, GLOBAL BUSINESS ETHICS SURVEY (Ethics & Compliance Initiative, Arlington, VA), March 2018, at 5.

²¹⁸ *Measuring the Impact of Ethics & Compliance Programs*, GLOBAL BUSINESS ETHICS SURVEY (Ethics & Compliance Initiative, Arlington, VA), June 2018, at 6. (“Employees in stronger cultures (83%) were more likely to report misconduct compared with those in weaker cultures (58%)”).

²¹⁹ 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).

²²⁰ 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, 446-452 (2013).

prospered, an overwhelming body of evidence demonstrates that fostering an ethical climate yields successful returns along a number of organizational dimensions.²²¹

In terms of corporate strategy vis-à-vis creating and maintaining trust with customers, which of course is also related to the financial gains discussed above, the value to be gained by taking ethical considerations seriously is equally robust. In terms of capturing and maintaining market share, preserving the trust of customers is critical. Customer trust can be fragile, and it does not take long for breaches in product safety or deficient services to erode customer confidence and willingness to continue the business relationship.²²² As business ethicist Tim Fort describes it “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.²²³

In other words, trust in business is about ethics, and as documented earlier in this Article, various platform-based practices and strategies warrant serious ethical analysis. Platforms' use of sophisticated nudging techniques that 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.²²⁴

Of course, ethics can be a squishy terrain upon which to operate one's business. Values are not uniform across an industry, and depending on the intensity of one's competitive landscape, cutting corners in ways that do not bolster the trust of one's customers or recalibrating the corporation's moral compass to justify a reevaluation of previously-held ethical positions may be a temptation too great to avoid. As the last forty years of research on human behavior has demonstrated, ethical fading²²⁵ and moral disengagement²²⁶ are frequent phenomena among

²²¹ Michael E. Brown & Linda K. Trevino, *Socialized Charismatic Leadership, Values Congruence, and Deviance in Work Groups*, 91 J. APPLIED PSYCHOL. 954, 958-962 (2006); Mitchell J. Neubert, et al. *The Virtuous Influence of Ethical Leadership Behavior: Evidence From the Field*, 90 J. BUS. ETHICS 157, 160-170 (2009). 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. Kurt T. Dirks, *The Effects of Interpersonal Trust on Work Group Performance*, 84 J APPLIED PSYCHOL. 445 (1999).

²²² On the fragility of trust, Warren Buffett perhaps said it best: “It takes twenty years to build a reputation and five minutes to ruin it.” ROBERT L. BLOCH, MY WARREN BUFFETT BIBLE (2015).

²²³ TIMOTHY L. FORT, THE VISION OF THE FIRM 2D 204 (2017).

²²⁴ See Olivia Solon, *Is Lyft Really the 'Woke' Alternative to Uber?*, GUARDIAN (Mar. 29, 2017), <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).

²²⁵ MAX H. BAZERMAN & ANN E. TENBRUNSEL, BLIND SPOTS: WHY WE FAIL TO DO WHAT'S RIGHT AND WHAT TO DO ABOUT IT (2011); Ann E. Tenbrunsel & David M. Messick, *Ethical Fading: The Role of Self-Deception in Unethical Behavior*, 17 SOCIAL JUSTICE RESEARCH 223-236 (2004); Robert B. 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).

²²⁶ Albert Bandura et al., *Mechanisms of Moral Disengagement in the Exercise of Moral Agency*, 71 J. PERSONALITY SOC. PSYCHOL. 364, 368-374 (1996); James R. Detert, Linda Klebe Trevino, & Vicki L. Sweitzer, *Moral Disengagement in Ethical Decision Making: A Study of Antecedents and Outcomes* 93 J. APPLIED PSYCHOL. 374 (2008); Celia Moore, et al., *Why Employees Do Bad Things: Moral Disengagement and Unethical Organizational*

both individuals and organizations.

Given these realities of human nature and organizational behavior, the boundaries of what is ultimately sanctioned as 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. 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: holding regulators at bay for as long as possible and setting the tone for eventual regulation by preemptive self-policing.²²⁷ 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 pragmatic effort to establish the location and extent of regulatory restrictions surely on the horizon.

C. A Model Code of the Platform

In light of the above, we advocate for the adoption by all platform company stakeholders of an ethical code that will clearly, but broadly, demarcate the boundaries of acceptable platform behavior.²²⁸ 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.

1. The Value of Ethical Codes of Conduct and Related Best Practices

Written codes of ethical conduct have been a staple of industries and business organizations since the mid-twentieth century.²²⁹ By the 1980s, adoption of ethics codes had become widespread across industries in the wake of multiple international and domestic business scandals, and as a means for corporate leaders to reassure stakeholders of companies' commitment to ethical practices.²³⁰ As noted above, these codes have always been multi-pronged in their aim, intended to both improve organizational climate and financial performance,²³¹ while also guiding action (or mitigate potential penalties) where legal and regulatory systems have for some reason proven ineffective or inadequate.²³² The 1991 Organizational Sentencing Guidelines further incentivized creation of ethics codes as a "legal

Behavior, 65 PERSONNEL PSYCHOL. 1, 3-6 (2012).

²²⁷ See Todd Haugh, *The Criminalization of Compliance*, 92 NOTRE DAME L. REV. 1215, 1224 (2017) (describing eras of corporate self-regulation).

²²⁸ 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. Sean Valentine and Tim Barnett, *Ethics Code Awareness, Perceived Ethical Values, and Organizational Commitment*, 23 J. PERSONAL SELLING & SALES MGMT. 359, 359 (2003); O.C. Ferrell & Steven J. Skinner, *Ethical Behavior and Bureaucratic Structure in Marketing Research Organizations*, 25 J. MKTG. RESEARCH 103 (1988);

²²⁹ 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. Penny Company launched its "Penny 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).

²³⁰ Patrick E. Murphy, *Corporate Ethics Statements: Current Status and Future Prospects*, 14 J. BUS. ETHICS 727 (1995).

²³¹ WILLIAM H. SHAW & VINCENT BARRY, MORAL ISSUES IN BUSINESS 13TH ED (2015).

²³² See generally Kenneth J. Arrow, *Social Responsibility and Economic Efficiency*, 21 PUBLIC POLICY 303 (1974); CHRISTOPHER D. STONE, WHERE THE LAW ENDS (1975).

self-defense mechanism,” and as a proxy for an organization’s commitment to a comprehensive organizational focus on doing the right thing.²³³

As a general rule, those ethical codes of conduct that work best are structured at a high level and motivate compliance via inspiration rather than compulsion.²³⁴ In short, the best ethical codes “focus attention on important ethical standards, outline expectations, and help people act more appropriately.”²³⁵ In the draft ethical code we sketch below, our foci have been informed by much of the best practice guidance offered by communication ethicists Richard Johannesen, Kathleen Valde, and Karen Whedbee: provide guidance for the larger industry; outline the moral principles undergirding the code; encourage buy-in and stimulate further discussion and modification; distinguish between ideals and minimum conditions; protect the larger community; emphasize issues relevant to individual stakeholder groups.²³⁶

2. A Model Code of the Platform

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.²³⁷ The IIT collection contains approximately 2,500 individual codes from 1,500 separate organizations.²³⁸ During our review, we paid special attention to codes addressing behavioral science and technology.

The model code we propose relies heavily on two primary sources, and tangentially on a host of secondary ones. The first primary source is Richard Thaler’s pronouncements for what makes a “good” nudge.²³⁹ Thaler suggested three principles that should guide the use of nudges by government and private actors: all nudging should be transparent and never misleading; nudges should be as easy as possible to opt out of; and there should be good reason to believe that the behavior being encouraged will improve the nudgee’s welfare.²⁴⁰ Although these principles are simple, they reflect the ethical concerns outlined earlier; that non-transparent nudges can impose impermissible autonomy costs on individuals, particularly when the benefits to the individuals are minimal.²⁴¹ Thaler’s overarching goal in advancing these principles is to reduce manipulative uses of behavioral science—the “sludge” mucking up decision making—thereby “mak[ing] the world a better place.”²⁴²

The second primary source is the Association for Computing Machinery’s “Code of Ethics and Professional Conduct.”²⁴³ Although the ACM’s code is more formally constructed

²³³ Janet S. Adams, Armen Tashchian, & Ted H. Shore, *Codes of Ethics as Signals for Ethical Behavior*, 29 J. BUS. ETHICS 199, 200 (2001); Robert J. Rafalko, *Remaking the Corporation: The 1991 Sentencing Guidelines*, 13 J. BUS. ETHICS 625 (1994).

²³⁴ Lynn Sharpe Paine, *Managing for Organizational Integrity*, HARV. BUS. REV., Mar-Apr 1994.

²³⁵ CRAIG E. JOHNSON, *MEETING THE ETHICAL CHALLENGES OF LEADERSHIP*, 6TH ED. 349 (2018).

²³⁶ RICHARD L. JOHANNESSEN, KATHLEEN S. VALDE, & KAREN E. WHEDBEE, *ETHICS IN HUMAN COMMUNICATION* 6TH ED. (2007).

²³⁷ ETHICS CODES COLLECTION, ILLINOIS INSTITUTE OF TECHNOLOGY’S CENTER FOR THE STUDY OF ETHICS IN THE PROFESSIONS, <http://ethics.iit.edu/ecodes/>.

²³⁸ *Id.*

²³⁹ Thaler, *supra* note 124.

²⁴⁰ *Id.*

²⁴¹ See Part II.A.2., *supra*.

²⁴² Thaler, *Sludge*, *supra* note 131.

²⁴³ 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

than Thaler’s, it has a similar overarching goal to “consistently support[] the public good.”²⁴⁴ The ACM code is organized around seven general moral imperatives—ranging from contribute to society to avoid harm—and nine specific professional responsibilities.²⁴⁵ This structure is intended to inspire the ethical conduct of computing professionals, as well as provide guidance for specific action, all based on the fundamental notion “that the public good is always the primary consideration.”²⁴⁶ Unlike Thaler’s principles, the ACM code was a long-term collaborative effort. Over 3,000 computing professionals commented on various working drafts of the code to arrive at its current form, which was voted on by association members.²⁴⁷

Our code, set forth below, 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.²⁴⁸ 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 benefit of years of review or thousands of industry commenters, it serves as a meaningful starting point for future discussion.²⁴⁹

THE CODE OF THE PLATFORM

Tenant 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. A platform user cannot make an autonomous decision if they are unaware of the choice architecture being used to influence their decisions and behavior. Platforms should disclose when they are using tools of behavioral science, including nudges, to influence users and 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. Non-transparent nudges are more likely to be manipulative.

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>.

²⁴⁴ ACM Code, *supra* note 243.

²⁴⁵ *Id.* It also includes provisions for ethical leadership and enforcement.

²⁴⁶ *Id.*

²⁴⁷ *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 process of drafting and adopting revised ACM code).

²⁴⁸ JOHNSON, *supra* note 235, at 349.

²⁴⁹ The model code we propose also draws inspiration from the recent tenants 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 AI 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* Tenants, P’ship on Artificial Intelligence to Benefit People and Soc’y, <https://www.partnershiponai.org/tenets/>; Alex Hern, ‘Partnership on AI’ Formed by Google, Facebook, Amazon, IBM and Microsoft, GUARDIAN (Sep 28, 2016), <https://www.theguardian.com/technology/2016/sep/28/google-facebook-amazon-ibm-microsoft-partnership-on-ai-tech-firms>.

Tenant 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, subsidies, tax, fine, or 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 their 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 non-manipulative, platform nudges must always preserve users’ freedom of choice.

Tenant 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 are inherently more costly to user autonomy because they operate by targeting subconscious biases and heuristics, which are difficult to control and lessen the decision-maker’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 tenant recognizes that some nudges may benefit users even though their automatic conative processes have been exploited, but platforms should engage such choice architecture with extreme care.

Tenant 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 greatly from the multi-sided markets they create and foster. The use of behavioral science and choice architecture is a key 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 so greatly. 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).

Tenant 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 decision making through manipulative sludge. Sludge, which is 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.

Conclusion

It has been said that we are in a behavioral science revolution, as advancements in the understanding of human decision making are changing the way we interact with government, business, and each other.²⁵⁰ 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.²⁵¹ If both are true, platform companies have positioned themselves perfectly at the intersection of a new age. These 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, we first provided a more complete descriptive account of how platform companies operate than is currently available in the legal and business literature. We took an in-depth look into the choice architecture that platforms employ to structure almost every decision users make on the platform. Next, we 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. This led us to review applicable law and regulation; recognizing the deficiencies here, we offered a path forward by introducing an ethical code for platform-based companies. This code serves as a starting point for all stakeholders interested in minimizing platform manipulation. Our hope that as we progress in these new ages of technological and behavioral progress, The Code of the Platform will influence users, regulators, the public, and platform companies themselves in a positive way.

²⁵⁰ 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/>.

²⁵¹ Martin Kenney & John Zysman, *The Rise of the Platform Economy*, 32 ISSUES SCI. & TECH (2016), <https://issues.org/the-rise-of-the-platform-economy/>.