THE TAKING ECONOMY: UBER, INFORMATION, AND POWER

WORKING PAPER

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Sharing economy firms such as Uber and Airbnb facilitate trusted transactions between strangers on digital platforms. This creates economic and other value and raises a set of concerns around racial bias, safety, and fairness to competitors and workers that legal scholarship has begun to address. Missing from the literature, however, is a fundamental critique of the sharing economy grounded in asymmetries of information and power. This Article, coauthored by a law professor and a technology ethnographer who studies the ride-hailing community, furnishes such a critique and indicates a path toward a meaningful response.

Commercial firms have long used what they know about consumers to shape their behavior and maximize profits. By virtue of sitting between consumers and providers of services, however, sharing economy firms have a unique capacity to monitor and nudge all participants—including people whose livelihood may depend on the platform. Much activity is hidden away from view, but preliminary evidence suggests that sharing economy firms may already be leveraging their access to information about users and their control over the user experience to mislead, coerce, or otherwise disadvantage sharing economy participants.

This Article argues that consumer protection law, with its longtime emphasis of asymmetries of information and power, is relatively well positioned to address this under-examined aspect of the sharing economy. But the regulatory response to date seems outdated and superficial. To be effective, legal interventions must (1) reflect a deeper understanding of the acts and practices of digital platforms and (2) interrupt the incentives of sharing economy firms to abuse their position.

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INTRODUCTION

Each time you hail a ride with Uber or book a room through Airbnb you are participating in the so-called sharing economy. The sharing economy and its sister terms—"collaborative," "platform," or "gig" economy—refer to a set of techniques and practices that facilitate trusted transactions between strangers on a digital platform.[1] Instead of hailing taxis or booking hotel rooms, today's consumers can download an app or visit a website and connect with individuals willing to provide access to their private cars or homes. The sharing economy, of course, did not emerge spontaneously. Antecedents include everything from Internet classifieds such as Craigslist

[1] Orly Lobel, *The Law of the Platform*, 101 MINN. L. REV. 87, 89 (2016).

to the carpools of the 1950s.[2] What distinguishes today's services is the widespread availability of smart phones and other connected devices as well as technologies, like rating systems, that facilitate trust among strangers.

The upsides of this multibillion dollar phenomenon are obvious. The sharing economy helps people leverage more of their personal resources and make better use of what Yochai Benkler calls the "excess capacity" of many goods and services.[3] When used only by their owners, goods like computers and cars will spend a lot of time not idle.[4] By making it easy and cheap to connect to others, we can "share" this excess capacity with the world. Assuming a degree of trust, we might even invite others to share our private spaces—our extra bedroom (Airbnb), our car (Uber or Lyft), or our dinner table (Feastly or EatWith).[5] Sharing economy firms also create new ways to earn income, especially for those who cannot or do not wish to work a traditional shift or otherwise face impediments to entering the mainstream workforce.[6] And sharing economy analogs can place competitive pressure on legacy services, presumably lowering consumer costs and increasing quality. Taxi companies, for instance, have responded to the convenience of Uber and Lyft by offering consumers the ability to hail cabs through an app instead of calling into a dispatch.

Concerns are also evident. Many argue that sharing economy firms do not compete on a level playing field. Uber and Airbnb, for example, offer the functional equivalent of taxi and hotel services but, by characterizing themselves as mere providers of a software app, avoid many of the safety, hygiene, and other regulatory requirements that apply to taxis and hotels. A number of class action lawsuits on behalf of Uber and Lyft drivers allege that ride-hailing services skirt labor protections by characterizing drivers as independent contractors entitled to fewer protections. Another lawsuit argues, conversely, that Uber drivers *are* independent contractors whom the platform requires to engage in a form of algorithmic price-fixing by setting the prices for each ride and preventing competition. Together these concerns amount to a claim of regulatory arbitrage;[7] sharing economy firms

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[2] *See infra*, Part I.A.

[3] Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production*, 114 YALE L.J. 273, 277 (2004).

[4] *Id.*

[5] Feastly, About, https://eatfeastly.com/info/about (chefs serve meals for profit in their own homes by connecting with interested diners through Feastly); NeighborGoods, About, http://neighborgoods.net/about (community members loan out their tools, vehicles, electronics, and other equipment as available for free).

[6] *See infra*, Part I.B.

[7] *See* Victor Fleischer, *Regulatory Arbitrage*, 89 TEXAS L. REV. 227, 229 (2010) (defining regulatory arbitrage as exploiting the gap between economic substance and legal treatment).

flourish by reproducing existing services without the same societal restrictions.[8]

Disability advocates argue that the sharing economy's relative freedom from legal obligation entails fewer accommodations for disabilities such as wheelchair accessibility.[9] Others allege discrimination based on race or country of origin. A recent study commissioned by the National Bureau of Economic Research finds "significant evidence of racial discrimination" in that people of color face longer waiting times when hailing an Uber or Lyft.[10] Another paper (co-authored by Rosenblat) finds that the passenger-sourced rating system may facilitate employment discrimination against Uber drivers because it masks consumer bias, which can ultimately lead to lower pay, loss of employment, and other adverse employment outcomes for affected drivers.[11] Aaron Belzer and Nancy Leong go so far as to question the sufficiency of public accommodation laws under the Civil Rights Acts to address various instances of aggregated bias on Airbnb and other sharing economy platforms.[12]

These and related concerns are important and real. But they threaten to overshadow a fundamental critique of the sharing economy that has seen little attention to date. Put simply, platforms like Airbnb, Lyft, and Uber possess deeply asymmetric information about and power over consumers and other participants in the sharing economy. And they are beginning to leverage that power in problematic ways. The sharing economy seems poised to do a great deal of *taking*—extracting more and more value from participants while continuing to enjoy the veneer of a disruptive, socially-minded enterprise.

Today's companies relentlessly study consumer behavior and use what they discover to maximize their bottom line.[13] This is true in the mainstream economy. Items cost $9.99 because firms exploit a cognitive bias that

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[8] *See* Julia Tomassetti, *Does Uber Redefine the Firm? The Postindustrial Corporation and Advanced Information Technology*, 34 HOFSTRA LAB. & EMP. L.J. __, *27 (forthcoming 2017) (arguing that sharing economy amounts to regulatory arbitrage).

[9] *See* Thomas P. Murphy, *Legal Rights of Individuals with Disabilities* Chapter 8: Ensuring Equal Access to Public Accommodations § 8.3.5 (2015). *See* Ramos v. Uber Technologies, Inc, 2015 WL 758087 (W.D. Tex. 2015) (unpublished opinion); Salovitz v. Uber Technologies, Inc., 2014 WL 5318031 (W.D. Tex. 2014) (unpublished opinion).

[10] Yanbo Ge et al., *Racial and Gender Discrimination in Transportation Network Companies*, NBER Working Paper No. 22776 (Oct. 2016).

[11] Alex Rosenblat et al., *Discriminating Tastes: Customer Ratings as Vehicles for Bias*, DATA & SOCIETY (Oct. 2016). Uber hopes to avoid anti-discrimination law by classifying its drivers as "independent contractors." *See infra*, Part I.

[12] Aaron Belzer & Nancy Leong, *The New Public Accommodation*, 105 GEO. L.J. (forthcoming 2017).

[13] *See infra*, Part II.A.

causes consumers to perceive the price as closer to $9.00 than to $10.00.[14] Grocery stores place sugary cereal at eye level for a toddler hoping to increase the nag factor.[15] As recent work (by Calo) argues, the *digital* transactions provide especially significant opportunities for firms to discover and exploit the limits of each consumer's ability to pursue his or her rational self-interest.[16] When a company can design an environment from scratch, track consumer behavior in that environment, and change the conditions throughout that environment based on what the firm observes, the possibilities to manipulate are legion. Companies can reach consumers at their most vulnerable, nudge them into overconsumption, and charge each consumer the most he or she may be willing to pay.[17]

Sharing economy firms, by virtue of sitting between the consumers and providers of services under the scaffolding of a software app, can monitor and channel the behavior of all users. This is partly how they manage to deliver new value to consumers. But their position as all-knowing intermediaries also presents unique opportunities for market manipulation. The stakes are greater too: for many participants, the sharing economy represents a primary or important supplementary source of income.[18] Experimentation by the platform is not just annoying but affects their livelihood. Meanwhile, consumers may understand that they "pay" for free Internet services such as Facebook with their data, and yet assume that sharing economy firms are different because of the distinct experiences and rhetoric that surrounds these services.

Although difficult to verify without behind-the-scenes access, there is evidence that sharing economy firms are already taking advantage of their power over participants. Uber sometimes operates in a legal gray area such that drivers or the company risk citation by local authority for operating without a taxi license. In March of 2017, the New York Times revealed that Uber systematically targets law enforcement officers—identified by the phones they use, their location, and other factors through a tool called "Greyball"—and purposely makes it difficult for those riders to find Uber drivers to whom to issue a citation.[19] The company went so far to create a "fake version of the app "populated by ghost cars."[20]

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[14] Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999).

[15] *See* Aviva Musicus, Aner Tal & Brian Wansink, *Eyes in the Aisles: Why is Cap'n Crunch Looking Down at my Child?*, ENVIRON. & BEHAV. 2015, Vol. 47(7) 715, 725.

[16] Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995 (2014).

[17] *Id.*

[18] *See infra*.

[19] Mike Isaac, *How Uber Deceives the Authorities Worldwide*, N.Y. TIMES (Mar. 3, 2017).

[20] *Id.*

These manipulations may be part of a broader pattern. Consider, for instance, claims that Uber is manipulating the perceptions of consumers on its popular ride-hailing app. Some consumers report opening the application on their phone and seeing plenty of cars driving around their pick-up location, visualized with icons. But after the consumer clicks to request an Uber, these "phantom cars" disappear and the consumer faces a wait.[21] Or consider the experiments Uber is running on what ride-hailers might be willing to pay. Apparently, in studying its consumers, the Uber data science team discovered that people whose phone batteries are low are more willing to pay inflated or "surge" pricing—leading to concerns that the company is interested in what amounts to contextual or individualized price-gauging.[22]

The opportunity and incentive to manipulate service providers is even more pronounced. While Uber drivers use the system, they may be offered a plethora of temporary contracts around price and other factors, and they are perennially forced to agree to new terms of service such as new commission structures when they log in to work.[23] As contract scholars explore in other contexts, Uber stands to profit from the inability of the driver to keep up both with the dizzying complexity of such documents and their high rate of change.[24]

Even where the terms are fairly clear, the mechanism of the interaction can be inscrutable. For example, drivers understand that Uber will guarantee them an hourly rate if they accept a certain percentage of ride requests, along with meeting other conditions. On rare occasions, drivers will report that these ride requests flash so fast the driver is unable to click on them in time to meet Uber's criteria.[25] Or, more commonly, a driver will wait for five minutes at a pick up location for a missing Uber rider so as to recuperate a cancellation fee, only to be told that Uber's internal measurement of time disagrees with that of the driver's app.[26] Some issues

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[21] Alex Rosenblat, *Uber's Phantom Cabs*, VICE MOTHERBOARD (Jul. 25, 2015), online at https://motherboard.vice.com/en_us/article/ubers-phantom-cabs. Uber acknowledges that vehicle icons do not always represent the real position of Uber drivers but denies that this is a purposive tactic to manipulate users. *Id.*

[22] Biz Carson, *You're more likely to order a pricey Uber ride if your phone is about to die*, BUSINESS INSIDER (May 17, 2016). Uber denies using phone battery information to select pricing at this time. *Id.*

[23] *See infra,* Part II.B.

[24] OREN BAR-GILL, SEDUCTION BY CONTRACT: LAW, ECONOMICS, AND PSYCHOLOGY IN CONSUMER MARKETS (2012) 141-45 (describing the inability of consumers to manage increasing contractual complexity); David Horton, *The Shadow Terms: Contract Procedure and Unilateral Amendments*, 57 UCLA L. REV. 605 (2010) (arguing that consumers cannot keep up with later changes to boilerplate or other contracts).

[25] *See infra*, Part II.B.

[26] *Id.* There may be technical reasons for these issues but this does not necessarily absolve Uber of fault under existing law. See infra, Part III (discussing the Federal Trade

are subtler still: Uber presumably fuels its ambitious mapping and driverless car programs with data it gets from monitoring participants.[27] This may mean that Uber drivers are unwittingly training their own replacements.[28]

While the sharing economy presents new factual challenges, we are not necessarily in uncharted legal territory. The law of consumer protection has long concerned itself with information and power asymmetries among market participants.[29] Indeed, given the area's history and focus, it is notable that the burgeoning legal literature around the sharing economy has scarcely engaged with consumer protection law.[30] A central aim of this Article is to address this gap and put forward a positive vision of how consumer protection law should engage with the sharing economy.

This is not to say regulators have ignored the sharing economy. In a recent and lengthy report, the Federal Trade Commission—a federal agency with responsibility for preserving the conditions of free and fair trade—heaped praise on sharing economy companies for offering new affordances to consumers and disrupting existing markets through novel means of competition.[31] A few months later, the other shoe dropped: the FTC settled a complaint with Uber alleging that the company misrepresented how much drivers (whom the Commission called "entrepreneurial consumers" consistent with Uber's own designation of drivers as "entrepreneurs") could earn in public recruitment advertisements.[32]

Commission's unfairness authority under Section V of the FTC Act).

[27] See Alex Rosenblat & Tim Hwang, *The Wisdom of the Captured*, DATA & SOCIETY *7 (Sept. 2016).

[28] *Id.*

[29] *See infra*, Part III.A.

[30] *E.g.*, Stephen R. Miller, *First Principles for Regulating the Sharing Economy*, 53 HARV. J. ON LEGIS. 147 (2016); Jenny Kassan & Janelle Orsi, *The Legal Landscape of the Sharing Economy*, 27 J. ENVTL. L. & LITIG. 1 (2012); Lobel, *supra*, note 1; Brishen Rogers, *The Social Costs of Uber*, 82 U. CHI. L. REV. DIALOGUE 85 (2015). Among the only work specifically to address consumer protection argues that existing regulations are outmoded and should not apply to the innovative new sharing economy. Christopher Koopman, Matthew Mitchell & Adam Thierer, *The Sharing Economy and Consumer Protection Regulation*, 8 J. BUS. ENTREPR. & L. 529, 532 (2015).

[31] From the report: "Many Workshop participants described how entrepreneurial activity in the sharing economy generally enhances competition and consumer welfare by enabling the entry of new sources of supply." *The "Sharing" Economy: Issues Facing Platforms, Participants, and Regulators*, Federal Trade Commission Staff Report, at 14 (Nov. 2016) (hereinafter, "FTC Sharing Economy Report"). *See also id.*, at 23-24 (describing advantages of platform-based markets). The FTC Sharing Economy Report also raised a variety of regulatory challenges, especially for state and local policymakers. *Id.*, at 14, 53-58.

[32] Federal Trade Commission v. Uber Technologies, Inc., Complaint for Permanent Injunction and other Equitable Relief, 3:17-cv-00261 p.9 (N.D. Cal. Jan. 2017) (hereinafter, "FTC Uber Complaint").

Such interventions, however, while welcome, have evolved little over the previous half-century and feel antiquated in an age of digital platforms. Indeed, the FTC's approach to Uber in 2017 is strikingly similar to its handling of the 1979 case involving the multilevel marketer Amway.[33] As with Uber, the FTC praised Amway for its innovative model of consumer-driven sales of home goods, a technique which permitted Amway to "interject a vigorous new competitive presence" into a market dominated by a few major distributors such as Proctor & Gamble.[34] And as with Uber, the FTC restrained Amway from overestimating in published materials how much an Amway consumer-salesperson could make selling its goods.[35]

But there are key differences between the Amway of 1979 and the Uber of today. Amway governed its network of distributors through written materials, the terms of which seldom changed. Its business model was different from its competitors' but straightforward: consumers bought goods from Amway, redistributed them in local neighborhoods, and recruited new consumers in exchange for a commission. This remains Amway's model thirty years later.[36] Uber is, by contrast, a multivalent digital platform with ambitions to revolutionize global logistics.[37] It meticulously tracks participants in real-time, constantly iterating on approach and design.[38] In light of these new affordances, it defies imagination that the only problematic practice Uber engages in happens to be the same, plainly visible sin of Amway: overestimating incomes in recruitment ads.

The thesis of this Article, coauthored by a legal scholar and an ethnographer of technology who studies ride-hailing in the sharing economy, is that the advantages of information and power that platforms like Uber possess over participants merit a deeper response from consumer protection law.

Regulators face two key challenges in crafting this response. First, regulators must gain a deeper understating of the acts and practices of digital platforms. This can be accomplished, we argue, by exercising existing authority to demand more granular information from firms about their practices and by incentivizing these practices by third parties such as

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[33] In the Matter of Amway Corporation, Inc. et al., Final Order, Opinion, Etc., [sic] in Regard to Alleged Violation of the Federal Trade Commission Act, 93 F.T.C. 618 (May 8, 1979) (hereinafter, "FTC Amway Order").

[34] *Id.*, at 710.

[35] *Id.* The Commission also placed limits on Uber's car leasing partnerships. FTC Uber Complaint, at 27-33.

[36] See *How Amway Works-Sales and Marketing Plan*, YOUTUBE, https://www.youtube.com/watch?v=n8bCcSi2V4g.

[37] *See infra*, Part II.B.

[38] *Id.*

the research team that uncovered the Volkswagen emissions scandal.[39] Second, regulators must find ways to characterize and address problematic behavior. This can be accomplished by drawing lines between acceptable and unacceptable (or harmful) conduct, as the law must often do, or else by attempting to better align the incentives of sharing economy firms with other participants.[40] Consumer protection law must be capable of restoring a sensible balance between sharing and taking.

Our Article proceeds as follows. Part I offers a more nuanced conception of the sharing economy than presently exists in the legal literature. While there is no stable, consensus definition of the sharing economy, this Part identifies a set of core claims, practices, antecedents, and technologies that underpin ride-hailing and other contemporary sharing services. Part I also canvasses in greater detail the benefits and costs of the sharing economy that have been identified by commentators to date.

Missing from the standard recitation of benefits and concerns is a fundamental critique of the sharing economy grounded in asymmetries of information and power. Part II advances such a critique. We draw from the theory of digital market manipulation and other work to argue for recognition of a greater range and complexity of dangers. Many of the concerns we emphasize in Part II are necessarily speculative in nature, in part because sharing economy practices occur behind the digital scenes. We therefore ground the discussion in a case study of Uber, which we select for its unique visibility among sharing economy firms and because one of us (Rosenblat) has studied Uber extensively in her fieldwork. Our concerns, of course, apply beyond this single company and across the sharing economy of today and tomorrow.

Part III advances the argument that consumer protection law—with its long emphasis on asymmetries of information and power—represents a critical but oddly missing lens by which to understand and address the full complexity of the sharing and taking economy. Part III concludes by suggesting ways consumer protection law can evolve to address the techniques used by sharing economy firms.

I. THE STORY OF THE SHARING ECONOMY

[39] *See* GREGORY J. THOMPSON, DANIEL K. CARDER, MARC C. BESCH, ARVIND THIRUVENGADAM & HEMANTH K. KAPPANNA, IN-USE EMISSIONS TESTING OF LIGHT-DUTY DIESEL VEHICLES IN THE UNITED STATES 106–08 (2014), online at http://www.theicct.org/sites/default/files/publications/WVU_LDDV_in-use_ICCT_Report_Final_may2014.pdf. *See also* infra, Part III.

[40] *Id.*

There is no stable consensus definition of the sharing economy.[41] We have defined the sharing economy loosely as a set of practices and techniques that leverage digital architectures to facilitate trusted transactions between strangers. But at base the sharing economy and its sister terminology represent a rhetorical device, a story that proponents tell in service of some business or political purpose such as attracting participants and funding or minimizing government intervention.[42] On this view, the sharing economy poses as a social movement even as it engages in what Elizabeth Pollman and Jordan Barry term regulatory entrepreneurship (or, more pejoratively, regulatory arbitrage).[43] This Part begins by telling the story of the sharing economy from the vantage of its proponents and then describes the considerable concrete benefits and real dangers that sharing economy commentators have identified to date. This Part presages Part II where we introduce and contrast our own novel critique grounded in asymmetries of information and power.

A. Why "Sharing"?

The gist of the sharing economy narrative is that technology helps people collaborate economically at scale. Consider the classic carpool of the 1950s. Many people need to get from the suburbs to downtown. If everyone drives, there is traffic congestion and no one can read the newspaper. Meanwhile, cars are designed to hold four or five people, and so that extra space and gas is wasted. Carpooling by neighbors, who generally know and trust each other, adds value by sharing the responsibility and resources needed to get to work. Broader carpooling might be even better but would introduce search and transaction costs. Worse yet, it could introduce the prospect of unreliable or undesirable drivers or riders. Sharing economy firms address these perceived problems of scaling by introducing apps and rating systems to find, connect, and assess people. Not only can you get downtown via Uber but you can invite a stranger to dinner (Feastly), let your spare bedroom for the week (Airbnb), or even rent out your power tools (NeighborGoods). People trade or purchase resources from one another; the platform acts as an impartial intermediary to help them connect.

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[41] FTC Uber Report, at 10-11; Lobel, *supra* note 1, at 89.

[42] *See* Natasha Singer, *Twisting Words to Make 'Sharing' Apps Seem Selfless*, N.Y. TIMES (Aug. 8, 2015).

[43] Regulatory entrepreneurship refers to pursuing "a line of business that has a legal issue at is core," including "a significant uncertainly regarding how the law will apply to a main part of the business operations." Elizabeth Pollman & Jordan M. Barry, *Regulatory Entrepreneurship*, 90 S. CAL. L. REV. __, *9 (forthcoming 2017).

The sharing economy narrative emerges from a variety of sources, including our familiarity with online social networks and a general sense of economic urgency. But its intellectual home is really the notion of "commons-based peer production" put forward by Benkler as early as 2002.[44] Proponents initially envisioned that social values and notions of individual empowerment would flavor the missions of businesses under the sharing economy umbrella. This vision of the sharing economy gets its roots from advocacy groups interested in the structures and impact of decentralized impact of peer-to-peer technologies like the file-sharing service Napster or the virtual currency Bitcoin.[45] Prominent sharing economy advocates like Peers.org functioned both as a public relations machine for sharing economy firms, and later as an advocacy organization for workers.[46]

Today the promise of the sharing economy continues to be based on ideas of social reciprocity. Advocates of the sharing economy characterize digital platforms as trusted economic communities that enable commerce, while simultaneously responding to the needs of local communities or even addressing historical inequities. For example, Airbnb claims to build a community whenever it creates a marketplace for hosts to auction off their spare bedrooms to visiting tourists,[47] and Uber aims to provide alternative and more efficient transit access to underserved communities.[48] These platforms claim to leverage technology to connect people and create the infrastructure to support transactions with common social goals. The business practices of these platforms represent, to paraphrase Tom Slee, a marriage of commerce and cause.[49]

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[44] Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369, 375 (2002).

[45] *See* Michael Gowan, *Requiem for Napster*, PC WORLD, online R http://www.pcworld.idg.com.au/article/22380/requiem_napster (started in 1999, the first iteration of Napster enabled users to share music over the internet in the form of MP3 files until the service shut down following the Ninth Circuit's application of copyright law to its peer-to-peer system in *A&M Records v. Napster, Inc.*, 239 F.3d 1004 (2001)); BITCOIN FAQ, https://bitcoin.org/en/faq#what-is-bitcoin (digital currency network facilitating peer-to-peer payment without a central government or financial authority— "like cash for the Internet").

[46] *See* http://www.peers.org/about/ ("Peers' mission is to make the sharing economy work for the people who power it.").

[47] Megan Barber, *Airbnb vs. the city*, CURBED (Nov. 10, 2016), online at http://www.curbed.com/2016/11/10/13582982/airbnb-laws-us-cities.

[48] Gabrielle Gurley, *Underserved Communities Rely on Uber, But Challenges Remain*, THE AMERICAN PROSPECT (Aug. 5, 2016), online at http://prospect.org/article/underserved-communities-rely-uber-challenges-remain.

[49] Barber, *supra* note 47 (quoting Tom Slee). *See also* TOM SLEE, WHAT'S YOURS IS MINE: AGAINST THE SHARING ECONOMY (2015).

The sharing economy walks an interesting line: the model is spun as both novel and also having many antecedents, which makes it feel simultaneously innovative and familiar. Business professor Arun Sundararajan argues that the sharing economy represents a series of familiar practices—borrowing and lending under-used goods, lending a helping hand for services, or self-employment for side-work—and reorganizes them digitally in monetizable ways.[50] For Sundararajan, the rapid growth of the sharing economy is partly a function of this familiarity, which renders the model more palatable to consumers.[51] Just as Amazon is an extension of brick and mortar or catalogue retail, sharing economy firms draw from the phenomena of couch-surfing and carpooling.

Another building block of the sharing economy narrative is the increasingly centrality of service-based consumption, such as listening to the music services Pandora or Spotify instead of purchasing songs.[52] The rhetoric of sharing contrasts with ideals of ownership and possession, and the sharing economy ideology takes aim at exclusive individual ownership of goods in particular, contending that idle, underutilized assets, like power drills, spare bedrooms, or spare time contain value that can be "unlocked" efficiently for monetary (and even non-monetary) benefits.[53]

As sociologist Juliet Schor observes, socio-economic factors, like a general increase in the consumption habits of consumers, helped to evolve the secondary digital markets for the redistribution of used goods and later, services.[54] By facilitating connectivity and trust between strangers, sharing economy businesses offer a more mature version of their most familiar antecedents, Craigslist and eBay, which both started in 1995 and initially provided a digital space for the re-circulation of goods in the nascent

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[50] ARUN SUNDARARAJAN, THE SHARING ECONOMY: THE END OF EMPLOYMENT AND THE RISE OF CROWD-BASED CAPITALISM (2016).

[51] *Id.*

[52] Pandora, About, http://www.pandora.com/about (users create free personalized radio stations online by inputting their preferred artists, songs and genres); Spotify, About, https://www.spotify.com/us/about-us/contact (users stream music through Spotify, either for free with ads online or with a paid Premium account that allows them to download music and listen offline).

[53] *See* Leon Kaye, *Why Sharing Makes Sense in an Over-consuming World*, THE GUARDIAN (Jan. 12., 2012), online at https://www.theguardian.com/sustainable-business/collaborative-consumption-sharing. For a meticulous and accessible discussion of the consequences of moving from a property to consumption-based economic model, see AARON PERZANOWSKI & JASON SCHULTZ, THE END OF OWNERSHIP: PERSONAL PROPERTY IN THE DIGITAL AGE (2016).

[54] Juliet B. Schor, *Collaborating and Connecting: The Emergence of the Sharing Economy*, in HANDBOOK ON RESEARCH & SUSTAINABLE CONSUMPTION 7 (Lucia Reisch & John Thogersen, eds.) (2015).

growth and popularity of the Internet and Internet exchanges.[55]

Sharing economy firms are diverse and yet carefully consistent in their terminology. They call themselves "platforms" or "technologies" and do not typically own the physical assets, such as homes, cars, or tools, used in the transactions they mediate; although they may offer resources that enable individuals to own or care for their assets, such as car leases, or cleaning services.[56] They also speak of promoting freedom, flexibility, and independence.[57] This narrative of worker (and consumer) empowerment through networks similarly reinforces the identity of platforms as neutral arbiters of technological transactions, like a credit card processor, rather than traditional employers with social obligations toward their employees. Many workers in the sharing economy are classified as independent contractors, so their employers often communicate job expectations in the language of suggestions or recommendations.[58] This framing draws on sharing economy values that redefine workers as free, independent, entrepreneurs who can work for multiple, competing employers, such as driving for Uber and Lyft.

The prospect that the sharing economy generates new, more flexible opportunities for income is particularly exciting in the face of societal anxiety about dwindling economic opportunities for growth following the financial crisis of 2007. In a 2015 survey co-authored by Uber economist Jonathan Hall and economist Alan Krueger, 85% of surveyed drivers indicated that flexibility was a driving motivation for their work on the platform.[59] The promise of freedom and flexibility are perceived as a benefit of the sharing economy more broadly because it fits into a more utopian vision of workers who work by "uncoerced choice."[60]

The story, then, is one of evolving technological and consumption habits that, along with techniques of trust facilitation, such as rating mechanisms, empower new modalities of consumption and work just in time to cushion the economic fall out of the financial crisis. For a modest fee to offset the value they are adding, sharing economy firms act as neutral community marketplaces where people in society can come together and purchase or sell excess capacity in the form of rides, tasks, rooms, and other

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[55] *Id.*, at 6.

[56] Lobel, *supra* note 1, at 94-101.

[57] Alex Rosenblat & Luke Stark, *Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers*, 10 INT. J. COMM. 3758 (2016).

[58] *Id.*, at 3761.

[59] J. Hall & A.B. Krueger, *An analysis of the labor market for Uber's driver-partners in the United States* 11 (Jan. 22, 2015), online at https://s3.amazonaws.com/uber-static/comms/PDF/Uber_Driver-Partners_Hall_Kreuger_2015.pdf.

[60] L. Irani, *Difference and dependence among digital workers: The case of Amazon Mechanical Turk*. 114 S. ATLANTIC Q. 225, 234 (Jan. 2015).

resources. These new modalities are both familiar, in that they have recognizable antecedents, and powerfully disruptive of the less social or socially-minded patterns of commerce.

And this story seems to be working—at least for some. The ongoing popularity of the sharing economy as a business trope can be partly credited to the remarkable financial success of its leading symbols in garnering venture capital funding in Silicon Valley, and in their global scale: Airbnb, which was founded as a start-up in 2008, is valued at $30 billion[61] and has 3,000,000 home or room listings in 65,000 cities (as of January 2017),[62] and Uber, another start-up from 2009 that is valued at upwards of $68 billion,[63] with services in perhaps 527 cities worldwide.[64]

There is no central source of information on the measure of the sharing economy, although several reports make efforts to measure it by different metrics from a macroeconomic perspective. Studies by the Pew Research Center, the Brookings Institution, the JPMorgan Chase Institute, and others all report significant and growing participation.[65] (Notably absent is the Department of Labor, although it has announced an intention to attempt to survey contingent work in 2017 in light of the sharing economy.[66]) Although frequently billed as a national or global phenomenon, the sharing economy is largely centered around urban populations. The Pew study in May 2016 found that 73% of Americans still had not heard of the sharing economy and that only 15% of Americans have used ride-hailing apps like Uber or Lyft, which the study finds to be available primarily in and around metropolitan areas.[67]

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[61] Sara Ashley O'Brien, *Airbnb's Valuation Soars to $30 billion*, CNN (Aug. 8, 2016), online at http://money.cnn.com/2016/08/08/technology/airbnb-30-billion-valuation/.

[62] *See* https://www.airbnb.com/about/about-us.

[63] *But see* Julie Verhage, *An Expert In Valuation Says Uber is Only Worth $28 Billion, Not $62.5 Billion*, BLOOMBERG (Aug. 17, 2016), online at https://www.bloomberg.com/news/articles/2016-08-17/an-expert-in-valuation-says-uber-may-have-already-peaked.

[64] *See* https://www.uber.com/.

[65] Aaron Smith, *Shared, Collaborative and On Demand: The New Digital Economy*, May 19, 2016 Pew Research Center, http://www.pewinternet.org/2016/05/19/the-new-digital-economy/; Ian Hathaway & Mark Muro, *Tracking the gig economy: New numbers*, Oct. 13, 2016 The Brookings Institution, https://www.brookings.edu/research/tracking-the-gig-economy-new-numbers/; Diana Farrell & Fiona Greig, *Paychecks, Paydays, and the Online Platform Economy*, Feb. 2016 JPMorgan Chase & Co. Institute, https://www.jpmorganchase.com/corporate/institute/document/jpmc-institute-volatility-2-report.pdf.

[66] *See* U.S. Department of Labor, *The Future of Work: Diving into the Data*, June 17, 2016 U.S. Department of Labor Blog, https://blog.dol.gov/2016/06/17/the-future-of-work-diving-into-the-data/.

[67] *See* Smith, *supra* note __.

Meanwhile, sharing economy firms seem to confront fewer—or at least different—regulations than the taxi, hotel, restaurant, and other legacy firms with which they compete. As Pollman and Barry explore, sharing economy firms like Uber and Airbnb have proven adept at exploiting gray areas (or simply flouting laws) while growing to a size and popularity that gives them the political clout to combat efforts to regulate them.[68] These authors refer to this strategy as "regulatory entrepreneurship"—defined as a business model that acknowledges how "changing the law is a material part of the company's business plan and vision for success."[69] Crucial to this success is a strong rhetorical strategy that positions the sharing economy as familiar enough for consumers to adopt and enjoy it, but novel and "disruptive" enough to merit new regulatory strategies and to generate scorn for policymakers who stand in the way of its innovations.

B. Sharing's Rewards

The sharing economy is tied up in whimsical notions about a decentralized, social marketplace. But whether or not you credit this underlying narrative, any even handed assessment of the sharing economy must acknowledge a host of concrete benefits also emphasized by economists and regulators. They include: maximizing the utility of personal assets; flexible schedules for workers; (some) income security; increasing the quality and quantity of goods and services available through greater competition; and local access to new infrastructure resources. We canvass them briefly below. Many of the very same techniques and technologies that permit sharing economy firms to deliver this new value are also what allow them to engage in problematic manipulation.

1. Efficiency and income flexibility

The sharing economy promises to unlock various resources with excess capacity such as a household's guestroom. The connectivity and trust mechanisms developed by platforms increase efficiency in the sense that underutilized resources can find a higher value use.[70] Sharing economy firms also promote efficiency by lowering search costs and by permitting consumers more and better options.[71] Discussing transportation, Brishen

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[68] Pollman & Barry, *supra* note __, at 16-19.

[69] *Id.*, at 4.

[70] Lobel, *supra* note 1, at 108 ("A key principle of the platform is putting idle capacity to work. The platform enables a more efficient use of private resources.").

[71] Rogers, *supra* note__, at 87 ("Uber's key innovation lies in having the reduced the transaction costs that otherwise plague the sector…")

Rogers offers the prospect that city dwellers could dispense with car ownership entirely.[72] In addition to freeing up resources for individuals or families, fewer cars on the road holds positive implications for the environment or traffic congestion.[73]

Among the most valuable resources is an individual's time. A central benefit of the sharing (or "gig" economy) is to provide more and more diverse opportunities to make money.[74] Many cannot work even a part time job due to the schedules and shifts that typify traditional employment.[75] Imagine a parent who drops his child off at public school and must pick her up again in the early afternoon. Some days this parent has errands to run, but others he is sitting at home. TaskRabbit, Amazon Turk, and Lyft all offer this person a flexible means to supplement the family income on his own schedule, driving from drop off to pick up while also saving for college.[76]

The sharing economy has a relatively low barrier to entry for job opportunities as well, which may be especially salient for marginalized populations excluded from the workplace by low education, a criminal record, or other factors.[77] Sharing economy workers can also switch around at will: they are generally classified as independent contractors who are free to work for multiple competing employers and labeled small business owners or entrepreneurs by sharing economy advocates.[78] Although there is high turnover within the industry, some offer this as proof that temporary employment in the sharing economy benefits those who are in career transition, or who incur an unexpected bill.[79] The sharing economy may

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[72] *Id.* at 90-91.

[73] *Id.*

[74] The "gig" or "on demand" economy is used when emphasizing the labor transformations of the sharing economy. See Benjamin Means & Joseph A. Seiner, *Navigating the Uber Economy*, 49 U.C. DAVIS L. REV. 1511, 1513, 1513 n.1 (2016).

[75] See Gillian B. White, *The Very Real Hardship of Unpredictable Work Schedules*, THE ATLANTIC (Apr. 15, 2015).

[76] TaskRabbit, About, https://www.taskrabbit.com/how-it-works (connecting workers willing to complete tasks such as cleaning, moving, and home repairs with users willing to pay for those services); Amazon Mechanical Turk, About, https://www.mturk.com/mturk/welcome (connecting businesses and developers with workers interested in performing "human intelligence tasks" such as transcribing text and rating the quality of translations for pay); Lyft, About, https://www.lyft.com/drive-with-lyft (a ride-hailing service that, like Uber, allows drivers to work whenever they want to).

[77] See Tawanna R. Dillahunt & Amelia R. Malone, *The Promise of the Sharing Economy among Disadvantaged Communities, Social Innovations*, available online at http://socialinnovations.us/assets/papers/pn0389-dillahuntv2.pdf.

[78] Rosenblat & Stark, *supra* note __, at 3761.

[79] Jonathan V. Hall & Alan B. Krueger, *An Analysis of the Labor Market for Uber Driver-Partners in the United States*, Princeton University Working Paper, 16 (Jan. 22, 2015), http://arks.princeton.edu/ark:/88435/dsp010z708z67d.

thus reduce overall income volatility, particularly for those who live paycheck to paycheck in an economic climate where real wages have declined since 2009 for most households, with the exception of the top 5th percentile.[80]

The sharing economy facilitates more transactions with greater efficiency between users through technology, but it can also have economic impact on related industry actors and consumer populations. Broadly accessible services can prompt industry specialization for legacy businesses (e.g. business travelers who want reliable experiences or families with kids might prefer to stay in a hotel rather than in a stranger's home), which presents a more variable experience, and the chauffeur industry can cater to specialized, niche or luxury services for high-end consumers.

2. Greater competition

Although some worry that sharing economy firms compete unfairly by performing the functional equivalent service under fewer constraints, it is economics 101 that the introduction of new competitors into existing markets should have a positive effect on price and quality.[81] Many commentators, among them regulatory bodies, have praised the innovative means by which sharing economy firms complete in legacy markets. More competition presumably drives down price and increases quality—although few studies have shown these effects.[82] Particularly visible, however, are the changes to legacy firms as they face shifting consumer expectations. Today, taxi services have apps that permit consumers to call for a car and pay for the service at the push of the button, just like they can on Uber and Lyft. The sharing economy platforms may also popularize the use of transit and accommodations services without unseating existing businesses. For example, one study found that the rise of Uber changed the make-up of the labor market within the transportation services industry, but that it also

[80] J.P. Morgan Chase & Co. Institute, Paychecks, Paydays, and the Online Platform Economy 3 (Feb. 2016).

[81] *See, e.g.,* Jerry Hausman & Ephraim Leibtag, *Consumer Benefits from Increased Competition in Shopping Outlets: Measuring the Effect of Wal-Mart, MIT and Economic Research Service*, U.S. Dept. of Agriculture, 1, http://economics.mit.edu/files/1036 ("Consumers often benefit from increased competition in differentiated product settings.")

[82] *But see, e.g.,* Amy Platt, *NYC Hotel Rates May Be Dropping Thanks Airbnb*, CURBED (Apr. 19, 2016), http://ny.curbed.com/2016/4/19/11458984/airbnb-new-york-hotel-rates-dropping (finding rate drops in New York City). There is evidence that hotels have lost revenue in the wake of Airbnb. See Georgios Zervas, David Prosperi & John W. Byers, *The Rise of the Sharing Economy: Estimating the Impact of Airbnb on the Hotel Industry*, 1 https://cs-people.bu.edu/dproserp/papers/airbnb.pdf (finding decline of 8-10%).

grew the pie overall, rather than cutting off thinner slices of it.[83]

3. Access to new resources

The introduction of sharing economy firms can have other positive effects, especially in cities where sharing economy activity tends to be concentrated. Supplementary income from part-time work in the sharing economy may enable people to pay their rent, cover daily living expenses, or pursue their passions or goals. For example, in cities like New York City or San Francisco where its business is under attack by hotels or sympathetic regulators, Airbnb takes the stance that the income people earn on Airbnb allows them to afford their rent in highly expense cities. Indeed, the numbers are impressive: in San Francisco alone, Airbnb asserts that its platform generated 430 jobs and $56 million in local spending in one year. The company noted, too that of total guest spending, hosts households receive $12.7 million.[84]

Research on the impact of the sharing economy in low-income communities demonstrates that it can increase access to resources and opportunities, facilitate networking opportunities (such as jobs people get connected to through people they meet while they are an Uber driver or passenger), or help fill in gaps in public transportation.[85] For example, people who may not be able to get to work on time because they lack car ownership or access to robust public transit could stand to benefit from ride-hail technologies that provide them with better mobility.[86] Improving access to resources and shoring up access to transit in underserved areas can both bolster a belief in civic community,[87] and remedy inequities existing inequities in public infrastructure and in commercial services, such as longstanding patterns of discrimination against people of color by taxis.[88]

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[83] Carl Benedikt Frey, Chinchih Chen & Thor Berger, *Drivers of Disruption? Estimating the Uber Effect*, OXFORD MARTIN PROGRAMME ON TECH. & ECON. CHANGE (Jan. 23, 2017).

[84] Airbnb, *Economic Impact,* http://blog.airbnb.com/economic-impact-airbnb/ (last visited Mar. 6, 2017).

[85] Tawanna R. Dillahunt & Amelia R. Malone, *The Promise of the Sharing Economy Among Disadvantaged Communities, in* PROC. OF THE 33RD ANN. ACM CONF. ON HUMAN FACTORS IN COMPUTING SYS. 2285 (2015).

[86] MICHAEL KODRANSKY & GABRIEL LEWENSTEIN, CONNECTING LOW-INCOME PEOPLE WITH SHARED MOBILITY (2014), https://www.itdp.org/wp-content/uploads/2014/10/Shared-Mobility_Full-Report.pdf.

[87] Dillahunt & Malone, *supra* note 85.

[88] *Hailing While Black* (July 9, 2015), BRILLIANT CORNERS RESEARCH & STRATEGIES, http://www.brilliant-corners.com/post/hailing-while-black (blog post summarizing a survey of Chicagoans); Moira McGregor et al., *On-Demand Taxi Driving: Labour Conditions, Surveillance, and Exclusion, in* THE INTERNET, POLICY, & POLITICS CONFERENCES,

Similarly, accommodations options available on platforms like Airbnb may reduce the cost to tourists or travelers who wish to visit a city if they can find a place to stay more cheaply in someone's spare room than in a hotel. Some cities, like Altamonte Springs, Florida, are even experimenting with subsidizing ride-hail services like Uber and Lyft *instead* of building out more public transit infrastructure.[89]

C. Sharing's Perils

Neither strong rhetoric nor clear benefits have managed to entirely insulate sharing economy firms from criticism. The excitement around these new companies has come to be tempered by a series of concerns. Worries come from a variety of sources, which in turn shapes the basis and character of their critique. Competitors to the sharing economy, for instance, maintain that Uber, Airbnb, and other firms are not competing fairly.[90] Cities focus on the safety and mobility of urban residents. Drivers and other service providers question why they should miss out on the benefits associated with employment. Others raise concerns around privacy and discrimination. These concerns do not necessarily have a common nexus, unless it is the general lack of regulatory supervision. This section summarizes the literature and reporting critical of the sharing economy and catalogs the various downsides critics have tended to advance. The section acts a prelude to the arguably deeper critique we advance in Part II.

1. Regulatory arbitrage

The first set of concerns centers on the claim that sharing economy firms are not competing fairly. In part through a strategy that embraces forgiveness over permission, these firms replicate legacy services such as transportation, lodging, cleaning, and even dining without the encumbrance of regulation. Critics perceive this as a problem for at least two reasons.

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http://ipp.oii.ox.ac.uk/sites/ipp/files/documents/McGregor_Uber%2520paper%2520Sept%25201%2520PDF.pdf (last visited Mar. 6, 2017).

[89] *Uber and Altamonte Springs Launch Pilot Program to Improve Transportation Access* (Mar. 21, 2016), UBER NEWSROOM, https://newsroom.uber.com/us-florida/altamonte-springs/.

[90] Rogers, *supra* note __, at 91; Adam Thomson, *Airbnb hit by unfair competition complaint from French hotels*, FINANCIAL TIMES (June 23, 2016), online at https://www.ft.com/content/6ff2b192-3951-11e6-9a05-82a9b15a8ee7; Alice Walton, *Taxi lobby's City Hall spending falls short against Uber, Lyft over LAX*, L.A. TIMES (Aug. 25, 2015); Eric Newcomer, *New York Hotels Go on Offensive Against Airbnb Rentals*, BLOOMBERG (Oct. 30, 2015), https://www.bloomberg.com/news/articles/2015-10-30/new-york-hotel-group-goes-on-offensive-against-airbnb-rentals.

First, it is very difficult for an existing service bound by regulations to compete with a firm that is not. And indeed, Uber and Airbnb have prompted outcries by taxis and hotels the nation over.[91] Second, the regulations around legacy services exist for a reason: to protect visitors and city residents. The critique is that sharing economy firms are underinsured, less safe, less sanitary, and so on, because they skirt legal requirements through regulatory arbitrage.

Proponents of the sharing economy may counter that regulations are outdated and constitute barriers to entry. More particularly, proponents may argue that sharing economy firms have developed new mechanisms to ensure safety, quality, and other values. Chief among these is the ability to rate and comment upon services, coupled with an enforcement mechanism when a provider falls below consumer expectations. But the question then becomes whether these systems are adequate to protect participants. Cities such as Austin, Texas think not, and have responded with ordinances reintroducing certain requirements, such as fingerprint-based background checks for drivers, on Uber and Lyft and instituting new ones better tailored to the realities of ridesharing.[92]

Related is the concern that, by characterizing *all* participants in the sharing economy as "consumers" of a technology, including providers of services (i.e., workers), sharing economy firms manage to avoid labor laws.[93] This has generated a number of critiques, and class action lawsuits. For example, several lawsuits in California allege that drivers for Uber and Lyft are "employees" and not "independent contractors" as these firms claim.[94] (In response, Uber has pivoted to characterizing drivers as "end users" or "consumers" of its software, akin to passengers.[95]) The allegation of employment misclassification is not limited to California or even the United States; London drivers have also sued Uber alleging violations of the UK Employment Rights Act.[96]

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[91] *E.g.*, Alice Walton, *Taxi lobby's City Hall spending falls short against Uber, Lyft over LAX*, L.A. TIMES (Aug. 25, 2015), http://www.latimes.com/local/lanow/la-me-taxi-uber-lobby-story.html.

[92] Alex Rosenblat, *Uber's Drive-By Politics*, VICE MOTHERBOARD (May 27, 2016), https://motherboard.vice.com/en_us/article/uber-lyft-austin-drive-by-politics.

[93] *E.g.*, Miriam A. Cherry, Beyond Misclassification: The Digital Transformation of Work, 37 COMP. LAB. L. & POL. J. 577, 578 (2015).

[94] *E.g.*, O'Connor v. Uber Techs., Inc., 82 F. Supp. 3d 1133 (N.D. Cal. 2015); Cotter v. Lyft, Inc., 60 F. Supp. 3d. 1067 (N.D. Cal. 2015).

[95] *See* Katherine Powell Sullivan, *Transcript of Proceedings*, *16 (Jan 30, 2015), available online at http://uberlawsuit.com/Uber%20-%20Transcript%20of%20hearing%20on%20summary%20judgment%20-%201-30-15.pdf.

[96] *See* Y. Aslam et al. v. Uber B.V. et al., Employment Tribunals, Case Nos 2202550/2015.

2. Discrimination

One of the more troubling of the existing critiques of the sharing economy is that sharing economy firms facilitate discrimination. As alluded to above, one benefit of the sharing economy is that vulnerable or marginalized populations might have greater access to services in their neighborhood and greater opportunities to earn income. But investigations have also yielded evidence that both service-provider and service-consumers in the sharing economy face racial and other discrimination. A study commissioned by the National Bureau of Economic Research shows that people of color wait longer for rides on ride-hailing services.[97] Another analysis by one of the authors (Rosenblat) and various coauthors concluded that the Uber rating system can mask passenger-sourced discrimination, which may, for example, result in lower ratings for drivers with protected-class characteristics, and could result in lower pay or leave them more vulnerable to termination by the platform.[98] Other evidence suggests people of color have trouble hosting individuals and finding accommodations on Airbnb.[99]

The prospect that the sharing economy supports discrimination led Aaron Belzer and Nancy Leong to argue for an update of public accommodation laws.[100] Belzer and Leong survey existing mechanisms for addressing race discrimination in the context of public accommodations, including the groundbreaking Civil Rights Act of 1964, and identify limitations in these mechanisms in addressing the sharing economy.[101] The authors recommend a variety of updates, including alternating the standard for discriminatory intent and mandating greater transparency.[102]

3. Privacy

Finally, there have been allegations that sharing economy firms pose a threat to information privacy. Like other digital platforms, sharing economy firms have access to a tremendous volume and variety of information about

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[97] Yanbo Ge, Christopher R. Knittel, Don MacKenzie, & Stephen Zoepf, *Racial and Gender Discrimination in Transportation Network Companies*, Oct. 2016 The National Bureau of Economic Research, https://www.nber.org/papers/w22776.pdf.

[98] Rosenblat et al., *supra* note __.

[99] Benjamin Edelman, Michael Luca, & Dan Svirsky, *Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment*, forthcoming American Economic Journal: Applied Economics, http://www.benedelman.org/publications/airbnb-guest-discrimination-2016-09-16.pdf.

[100] Belzer & Leong, *supra* note __.

[101] *Id.*

[102] *Id.*

the behaviors of consumers. Sharing economy firms likely collect more information than is needed to accomplish their core goals of reducing search costs and facilitating trust. Uber needs to know where riders are in order to connect them to drivers. But it bothers some that Uber continues to record a passenger's whereabouts *after* she has left the car.[103] Moreover, there is evidence that sharing economy firms, like many start ups, may have inadequate internal safeguards around privacy. Many were alarmed to learn that senior managers at Uber enjoyed an unrestricted God's eye view of system, permitting a senior manager to track the arrival of a reporter who was interviewing him.[104]

Note that the information privacy issue in particular is not unique to sharing economy firms. The collection, processing, and use of personal information is part of a broader trend whereby digitally- and physically-based firms make a close study of consumers.[105] And yet, as we explore in the next Part, there may be reasons to be particularly concerned with the information practices of sharing economy firms. Thus far, however, the people raising privacy concerns about Uber or Airbnb do so on similar terms as the concerns with Facebook or Google.

II. TAKING IN THE SHARING ECONOMY

Part I offers a sense of the discourse around the sharing economy to date. Proponents weave the emerging set of practices and techniques into a story about social innovation. They emphasize the many benefits of the sharing economy to consumers, workers, and communities in general. And they position opponents as Luddites who are overinvested in the status quo.[106]

Detractors, meanwhile, see this narrative as a kind of "share-washing"

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[103] *See* Laura Roman, *Uber Now Tracks Passengers' Locations Even After They're Dropped Off*, NPR, (Dec. 1, 2016). The Uber app tracks user location either "always" or "never," rather than while the app is in use. Andrew J. Hawkins, *Uber wants to track your location even when you're not using the app*, THE VERGE (Nov. 30 2016), http://www.theverge.com/2016/11/30/13763714/uber-location-data-tracking-app-privacy-ios-android.

[104] Rich McCormick, *Uber Allegedly Tracked Journalist with Internal Tool Called 'God View'* (Nov. 19, 2014, 4:09 AM), THE VERGE, http://www.theverge.com/2014/11/19/7245447/uber-allegedly-tracked-journalist-with-internal-tool-called-god-view.

[105] *See generally* JULIA ANGWIN, DRAGNET NATION: A QUESTION FOR PRIVACY, SECURITY, AND FREEDOM IN A WORLD OF RELENTLESS SURVEILLANCE (2014); JOSEPH TUROW, THE AISLES HAVE EYES: HOW RETAILERS TRACK YOUR SHOPPING, STRIP YOUR PRIVACY, AND DEFINE YOUR POWER (2016).

[106] For a contemporary discussion of the Luddites' objection to technology, see CALESTOUS JUMA, INNOVATION AND ITS ENEMIES 25-26, 204 (2017).

and point instead to the sharing economy's downsides: the various businesses, groups, or individuals who stand to lose out or get hurt.[107] These downsides, while real and concerning, share only a loose conceptual foundation. Uber's poor internal privacy safeguards appear to have little to do with the question of whether drivers are employees or independent contractors. Moreover, the downsides identified to date are not endemic to the sharing economy. Notwithstanding talk of exceptionalism or disruption, little about their configuration ultimately prevents sharing economy firms from improving the way they treat workers, buying more insurance, or policing better against discrimination. Indeed, allegations of discrimination have already led to concrete changes to the way sharing economy firms operate.[108]

The back and forth between innovation and exploitation threatens to overshadow a foundational critique regarding the ways sharing economy firms leverage their status as intermediary platforms. Drawing from each author's work on information and power asymmetries, this Part argues that sharing economy firms, which observe in detail the activities of all participants under the scaffolding of an app, have both the means and the incentive to engage in complex techniques of self-dealing scarcely reflected in the legal academic literature. We first develop an account of digital market manipulation—referring to the emerging technologies and techniques that empower firms to discover and exploit the limits of consumers' ability to pursue their self-interest. We then give preliminary evidence of digital market manipulation in the context of our case study, the popular ride-hailing service Uber.

A. Digital Market Manipulation

Knowledge itself is power. Under the right circumstances, having better or earlier information than others confers a tremendous advantage. It helps explain why contemporary commerce involves ever more detailed study of consumer habits.[109] The more a firm knows about consumers, the better

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[107] cite

[108] In response to allegations that Airbnb hosts rejected customers on the basis of race, Airbnb reduced the prominence of photos in the booking process, introduced the "calendar-blocking" policy that prevents a host from renting a property on given dates if it has already informed a potential guest that the space is unavailable for those dates, and promised to provide comparable accommodations for guests who experience discrimination in the booking process or during a visit. News Service, *Airbnb apologizes for racism complaints, outlines changes*, CHI. TRIBUNE, http://www.chicagotribune.com/business/ct-airbnb-apologizes-for-racism-20160908-story.html (Sept. 8, 2016).

[109] Calo, *supra* note__, at 1006.

they are able to meet their needs and monetize their attention. But even one of the most common business models of Internet firms—free content in exchange for ads tailored to one's interest—is mutating. Increasingly, firms use what they know about consumers not only to match them to content they might prefer, but to nudge consumers to pay more, to work for less, and to behave in other ways that advantage the firm.

In a pair of influential articles, Jon Hansen and Douglas Kysar develop the theory of market manipulation to describe the exploitation by firms of the cognitive biases of consumers.[110] Cognitive bias refers to the ways people depart from rational decision-making because of reliance on heuristics or other mental limitations.[111] Traditional economic models generally assume away irrational behavior, whereas behavioral economics recognizes the role of cognitive bias as individuals attempt to pursue their self-interest. Hansen and Kysar's particular contribution to the literature is to illustrate the ways companies purposely leverage consumer limitations in order to extract rent.[112] Everything costs $9.99, they observe, because our brains see a greater distance from $10 than 1 cent.[113] Indeed, firms are not only in a position to exploit consumer cognitive bias, they may find themselves displaced from the market by firms that are willing to do so if they do not.[114]

One author (Calo) contributes to this debate by updating Hanson and Kysar for the digital age.[115] A theory of digital market manipulation layers in the roles of personal information and digital design. The contemporary consumer is a *mediated* consumer, meaning that his or her interactions occur through a platform that a company can closely monitor and which they took great pains to design and architect.[116] By tracking consumer habits in close detail, not only are firms in a position to exploit the general cognitive biases consumers share across a population, they are able to identify the specific and often highly idiosyncratic limitations of each consumer. Moreover, the ability to architect virtually every aspect of a digital interaction such as a website or app creates far greater opportunities for manipulation than the static selection of price, an offer of rebate, or the other analog approaches Hanson and Kysar explore.[117] Contrast the Hanson and Kysar example of $9.99 pricing to the ability of firms to charge an

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[110] *See* Jon D. Hansen & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999).

[111] *Id.*

[112] *Id.*

[113] *Id.*

[114] Ryan Calo, *Digital Market Manipulation*, 82 GEO. WASH. L. REV. 995 (2014).

[115] *Id.*

[116] *Id.*

[117] *Id.*

individual more because they know they are intoxicated or depressed and therefore less able to exercise self-control.

A theory of digital market manipulation accounts for several new capacities of contemporary firms to identify and exploit cognitive biases. For instance, the ability to study consumer behaviors on a massive scale permits firms to discovery many more instances of bias. Rather than draw from a set of known cognitive limitations, such as a propensity to stick with defaults, companies can now use pattern recognition to spot the many idiosyncratic ways consumers depart from rational decision making within their digital ecosystem. This furnishes firms with far more options for advantage taking. Moreover, whereas traditional marketers have been content to use what they know about consumers to match them with goods and services they might prefer, increasingly firms are increasingly using what they know to better persuade consumers—a practice is known as persuasion profiling.[118]

Data advantages are especially critical to sharing economy firms. A recently profile of Uber's founder, Travis Kalanick, in Forbes affirmed the "existential" importance of data to that company.[119] In addition to its central objective of running a vehicle dispatch system, the company's ambitions include everything from revolutionizing logistics, to providing a granular new mapping service, to training cars to drive themselves—all goals heavily reliant on the collection and analysis of enormous volumes of data. According to Forbes, the company ultimately "seeks to become the planet's operating system for transportation."[120]

Sharing economy firms such as Airbnb, Lyft, and Uber sit between transactions among multiple parties, which places them in a position to study both the provider of the service and its consumer, individually and collectively. Moreover, the firm designs each participant's entire digital experience from scratch. They build and update the apps (plural) or website portals service providers and service users access. They structure the business model and the acceptable forms of transaction. And they write the terms of service and privacy policies that every participant clicks through in order to use each service. This combination of visibility and socio-technical design confers upon sharing economy firms exquisite control of the interactions they facilitate.

The sharing economy accordingly represents fertile ground for digital market manipulation. But further, there are dynamics at play in the sharing

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[118] *Id.*, at 1016-17 (citing research).

[119] Miguel Heft, *How Travis Kalanick is Building the Ultimate Transportation Machine*, FORBES (Dec. 30, 2016). The authors thank information science PhD candidate Meg Young for flagging this helpful article.

[120] *Id.*

economy that differ qualitatively even from social networks or online commerce generally. First, peoples' livelihoods are at stake. Many participants in the sharing economy derive irreplaceable income from the transactions these platforms facilitate.[121] Indeed, as we discuss in Part I, this is one of the sharing economy's most significant benefits. But it also means that the systematic exploitation of bias in this context is especially fraught.

Second, while consumers are starting to understand the notion of paying for "free" services with data, they have no such mental model for sharing. There is an increasingly common saying in privacy circles: If you are not the customer, you're the product.[122] Consumers use Facebook or Google without paying literal money and so, arguably, they tacitly accept the value proposition that these companies will monetize their information and attention. This mental model may not translate to the sharing economy, which can appear on first blush to have a simpler business model: they connect consumers to providers for a fee. You *are* the customer, so you do not necessarily think of yourself as a product, too.

Third, sharing economy firms can influence not only the perceptions and behaviors of consumers of goods and services, but also the suppliers. Control of this "two sided" marketplace creates additional channels for digital market manipulation, including inter-participant interaction.[123] For example, sharing economy firms interested in changing *host* behavior for reasons of profit margin could use their knowledge of and access to *guests* through the application to police the host behaviors indirectly by encouraging guests to down-rate activities that harm Airbnb profits.[124]

Finally, sharing economy firms can and do leverage their access to consumers and other participants in order to influence important stakeholders such as potential regulators. As Pollman and Barry explain, this strategy is at the very heart of regulatory entrepreneurship: tell a good story, become indispensable to consumers, and then ask forgiveness instead

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[121] *See supra*, Part I.A.

[122] E.g., Barton Gellman, *Facebook: You're Not the Customer, You're the Product*, TIME Oct. 15, 2010), online at http://techland.time.com/2010/10/15/facebook-youre-not-the-customer-youre-the-product. See also Scott Goodson, *If You're Not Paying For It, You Become The Product*, FORBES (Mar. 5, 2012), online at https://www.forbes.com/sites/marketshare/2012/03/05/if-youre-not-paying-for-it-you-become-the-product/#6bd6ac495d6e.

[123] "In two-sided networks, cost and revenue are both to the left and to the right, because the 'platform' has a distinct group of users on each side." Thomas R. Eisenmann, Geoffrey G. ParkerMarshall & W. Van Alstyne, *Strategies for Two-Sided Markets*, HARV. BUS. REV. (Oct. 2016), online at https://hbr.org/2006/10/strategies-for-two-sided-markets.

[124] *Cf.* Solon Barocas & Karen Levy, *What Customer Data Collection Could Mean for Workers*, Harv. Bus. Rev. (Aug. 31, 2016), online at https://hbr.org/2016/08/the-unintended-consequence-of-customer-data-collection (discussing how firms use data about consumers to exploit employees in traditional brick and mortar contexts).

of permission.[125] We would add that sharing economy firms, as digital platforms, are especially well positioned to identify, encourage, and coordinate participants willing to contact regulators on the firm's behalf. Imagine, for example, the sudden emergence of a button on an app the consumer can press to call the specific legislator taking aim at the sharing economy firm.[126]

In short, the sharing economy presents *at least* as many opportunities for digital market manipulation as any previous or constituent market modality. Of course, it is one thing to illustrate that a firm *could* engage in manipulative techniques in theory, and quite another to show they do so in practice. Hanson and Kysar accompanied their theoretical work with a companion article cataloging the actual practices of firms exploiting consumer cognitive bias.[127] This was possible in part because analog market manipulation is detectable once a person is looking for it: the price or placement of an item or the terms of refund are evident. Digital market manipulation, being a product of behind the scenes processing of personal information, is less visible.

Nevertheless, drawing from a variety of sources including ethnographic study of sharing economy participants, the next section illustrates several actual and potential instances of digital market manipulation by the popular ride-hailing platform Uber.

B. Some Evidence of Digital Market Manipulation in the Sharing Economy

It is one thing to claim that sharing economy firms have an *opportunity* or even an incentive to abuse their intermediary position. It is quite another to demonstrate that they are actively engaged in abusive practices. We do not have access to the decisions or processes that go on behind the digital scenes of a server or an app. Thus, evidencing the extent to which sharing economy firms are leveraging their asymmetric access to information and unilateral power over the design of interfaces and other architecture is difficult. Nevertheless, some of the acts and practices of sharing economy firms are observable enough to raise serious questions. By studying the observations of sharing economy participants, we can begin to piece together enough evidence of digital market manipulation to support a much

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[125] Pollman & Barry, *supra* note __, at *29.

[126] For an excellent discussion of the potential of digital market manipulation techniques to influence politics, see Lisa Marshall Manheim, *The Nudging Ballot? A Response to Professor Foley*, 89 NYU L. REV. ONLINE (Oct. 2014), online at http://www.nyulawreview.org/issues/volume-89-online-symposium/response-nudging-ballot-response-professor-foley.

[127] Jon D. Hansen & Douglas A. Kysar, *Taking Behavioralism Seriously: Some Evidence of Market Manipulation*, 112 HARV. L. REV. 1420 (1999).

deeper investigation.[128]

For this purpose, we have selected Uber as a case study. The ride-hailing service has emerged as something of a poster child for the sharing economy. It is the largest of the sharing economy firms by valuation, with an estimated value in the tens of billions of dollars.[129] Uber operates in hundreds of cities worldwide.[130] The company has amassed so much cultural capital as to give rise to an epithet—the "Uberization" of X, or "Uber for X" are used as branding material for companies looking to emulate Uber's achievements.[131] One author (Rosenblat) has conducted extensive fieldwork with Uber drivers and consumers, which has surfaced many of the issues represented in this section. At the same time, the critique that sharing economy firms are in a position to engage in digital market manipulation is hardly limited to Uber. We suspect that a sustained analysis of virtually any large sharing economy firm—including Uber's competitor Lyft or housing analogy Airbnb—would yield a similar set of concerns and questions.

This section first addresses possible manipulations of ride-hailers. Next it examines the even greater capacity of Uber to manipulate ride-providres. Finally, the section addresses systematic issues that could affect all participants.

1. Taking from the traditional consumer

Consumers utilize Uber's services by downloading a software application that Uber designs from scratch. The application opens to a map of the user's present location. Represented on the app are icons of vehicles alongside the wait time for the nearest available driver. A user may open her app and see many vehicles around her, suggesting that an Uber driver is close by should she decide to hail one. As research by author Rosenblat and Luke Stark reveals, the representation of nearby Uber cars can be illusory.[132] Clicking the button to request an Uber prompts a connection to the nearest driver, who may be much further away. The consumer may then

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[128] An analogy to criminal procedure would be reasonable suspicion in support of a warrant, for the purpose of determining whether there is probable cause for an arrest.

[129] *See supra*, note __. See also *Billion Dollar Startups*, CNN MONEY, online on http://money.cnn.com/interactive/technology/billion-dollar-startups.

[130] *See* http://uberestimator.com/cities (listing "more than 581 cities"). *See also* Uber, Locations, https://newsroom.uber.com/locations.

[131] E.g., Stuart Karten, *The Uberization of Healthcare*, HIT Consultant (Feb. 17, 2015), online at http://hitconsultant.net/2015/02/17/the-uberization-of-healthcare; Tod Perry, *New "Uber for Dogs" Gives You Dog Walkers on Demand*, GOOD (May 28, 2015), https://www.good.is/articles/new-app-is-uber-for-dog-lovers.

[132] Rosenblat & Stark, *supra* note __.

face a wait time as an actual Uber driver wends their way toward the pick up location. Those icons that appeared where cars were not present are familiar to some participants as "phantom cars."[133]

Uber has offered a variety of responses to allegations of phantom cars, including that the cars achieve a "visual effect" akin to a screensaver.[134] The idea is to suggest visually that Uber is searching for nearby partners, not that cars are literally present at the location of the icons. Upon multiple inquiries to Uber's Customer Support Representatives (CSRs), a particular driver eventually received the following explanation for this discrepancy via email:

> The app is simply showing there are partners on the road at the time. This is not a representation of the exact numbers of drivers or their location. This is more of a visual effect letting people know that partners are searching for fares. I know this seems a misleading to you but it is meant as more of a visual effect more than an accurate location of drivers in the area. It would be better of you to think of this as a screen saver on a computer. Once a rider request a trip there will be actual information about the partners [*sic*] location showing up in the app.[135]

One problem with this response is that the visual vocabulary of Uber's app is inconsistent. Upon hailing an Uber, a consumer sees an icon of her driver's actual location in real time. Nothing in the interface distinguishes between the manufactured display of phantom cars and the actual representation of a hailed vehicle. In Woodrow Hartzog's parlance, Uber is engaging in "abusive design" by suggesting visually that cars are nearby when they are not, presumably to entice the consumer to commit to hailing Uber instead of Lyft or a taxi.[136] Further, they are using the consumer's location on a map to lend verisimilitude to the illusion.

In response to controversy generated by the presence of phantom cars, Uber initially denied their existence, but has since offered additional explanation: "Latency is one reason [an accurate depiction of cars] is not always possible. Another reason is that the app only shows the nearest eight cars to avoid cluttering the screen. Also, to protect the safety of drivers, in some volatile situations, the app doesn't show the specific location of

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[133] *Id.*

[134] *Id.*

[135] Alex Rosenblat, *Uber's Phantom Cabs* (July 27, 2015, 7:15 AM), MOTHERBOARD, online at https://motherboard.vice.com/en_us/article/ubers-phantom-cabs.

[136] WOODROW HARTZOG, PRIVACY'S BLUEPRINT (forthcoming Harv. U. Press 2017) (developing a concept of "abusive design").

individual cars until the ride is requested."[137] Regardless, Uber's ability to blur the boundaries between an accurate representation of real-time supply (drivers) and a representation of general driver supply illustrates the potential for deception to emerge in user interactions with the platform.

A second set of examples involves the willingness of a user to pay surge prices. Uber determines a price according to a proprietary surge-pricing algorithm. When transportation demand is very high—such as during rush hour or a sporting event—Uber's algorithm changes the pricing in response. Drivers like surge pricing because they make more money, although a common piece of advice among drivers is "don't chase the surge" because the system can be unreliable.[138] Presumably consumers to do not like surge pricing to they extent they have to pay more.[139] Indeed, charging higher prices during periods of extreme demand has echoes of price gouging—the practice of charging much more for goods and services in the face of an emergency or shortage.[140]

Uber's own data scientists have revealed that the firm makes a close study of exactly when consumers might be willing to pay more. For example, Uber researchers found that individuals are more willing to pay surge pricing when the batteries on their phones are low.[141] This makes sense, of course, because the alternative is for the consumer to be stranded without access to a means of communication. Uber claims it does not currently leverage this information—we take them at their word. But the very fact that they are monitoring battery life raises questions about the information to which Uber has access as well as the criteria the firm might find suitable for use in pricing.

Another example involves introducing artificial precision into surge pricing. Numerous studies and common sense tells us that consumer tend to condemn price gouging, i.e., raising prices during times of very low supply and high demand, as unfair.[142] Many jurisdictions prohibit the practice as a

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[137] Alex Hern, *Uber Denies Misleading Passengers with Phantom Cars on App*, THE GUARDIAN (July 30, 2015), https://www.theguardian.com/technology/2015/jul/30/uber-denies-misleading-passengers-with-phantom-cars-on-app.

[138] *See* Rosenblat & Stark, supra note __, at 3766**.**

[139] Consumers may simultaneously recognize that surge pricing may increase availability and hence reduces wait time. James Surowiecki, *In Praise of Efficient Price Gouging*, MIT TECH. REV. (Aug. 19, 2014), online at https://www.technologyreview.com/s/529961/in-praise-of-efficient-price-gouging/

[140] *Id. See also* Matt Zwolinski, *The Ethics of Price Gouging*, Vol. 8 3 Bus. Ethics Q. 347, 347 (2008).

[141] *See supra*, note __.

[142] Steven Suranovic, *Surge Pricing and Price Gouging: Public Misunderstanding as a Market Imperfection*, 3, available online at https://www2.gwu.edu/~iiep/assets/docs/papers/2015WP/SuranovicIIEPWP2015-20.pdf.

matter of law.[143] At the heart of price gauging is the idea that a seller decides to exploit anomalous circumstances to charge people much more. Uber does not necessarily set its prices by hand, the way a grocery store would, but determines its initial price using a complex algorithm. The social science around algorithms has founded that people tend to trust algorithms as reflecting mathematical realities.[144] Uber founder Travis Kalanick has reinforced this perception by stating, for instance, that, "We are not setting the price. We have algorithms to determine what the market is."[145] But Uber's data scientists found that users distrust algorithmic surge pricing that merely doubles their costs (x2.0) because consumers perceive this as a form of artificial price gouging, suggesting Uber should introduce the appearance of more precision (e.g., x2.2).[146] Designing prices that people will perceive as algorithmic or mathematical instead of arbitrary is the digital equivalent of charging $9.99.[147]

Uber also appears to be charging different prices to similarly situated consumers—a practice known as dynamic price discrimination, which some consumers and commentators find alarming.[148] Research by computer scientists Le Chen, Alan Mislove, and Christo Wilson measured the prices Uber's API returned for surge in various areas to various passengers, and examined those prices against the prices passengers actually received.[149] They found a discrepancy, with users in the same surge zone at the same time received different prices, which Uber explained away as a bug in the system.[150] A possible technical explanation for this discrepancy has to do with server infrastructure. Achieving consistency of prices across a

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[143] Thirty-four states and the District of Columbia have anti-price gouging laws. For a complete list, see Michael Gilberson, *List of State Anti-Price Gouging Laws*, KNOWLEDGE PROBLEM, https://knowledgeproblem.com/2012/11/03/list-of-price-gouging-laws.

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[145] Tim Hwang & Madeleine Clare Elish, *The mirage of the marketplace*, SLATE (Jul. 27, 2015), online at http://www.slate.com/articles/technology/future_tense/2015/07/uber_s_algorithm_and_the_mirage_of_the_marketplace.html.

[146] Melissa Dahl, *People Get Suspicious When the Uber Surge Price Is a Round Number*, N.Y. MAG. (May 27, 2016).

[147] Uber has also experimented with "up-front pricing" by displaying total cost to consumers, rather than the surge multiplier, essentially to disguise the price-gouging factor from the user interface. Andrew J. Hawkins, *Uber is trying to make you forget that surge pricing exists*, THE VERGE (Jun. 23, 2016), online at http://www.theverge.com/2016/6/23/12017002/uber-surge-pricing-upfront-fare-app-update-announcement.

[148] cite

[149] *See* Le Chen, Alan Mislove & Christo Wilson, *Peeking Beneath the Hood of Uber,* PROCEEDINGS OF THE 2015 INTERNET MEASUREMENT CONFERENCE 495 (2015).

[150] *Id.*

distributed network of services is challenging.[151] For example, when a passenger opens the app, Uber is supposed to figure out what area they are in and deterministically assign them to a specific server in a given area, like a grid, and everyone in that area is supposed to get that price. However, the system isn't seamless, meaning that users in the same general area might be accessing data through different remote servers. Instead of being tied to one server, surge prices are coming from requests that are moving across different servers. If they are not seamlessly synchronized, this can result in different prices for users in the same geographic zone.[152] Ultimately we do not know, and this technical caveat may only suffice explain some of the inconsistences in Uber pricing.[153]

2. Taking from the entrepreneurial consumer

Sharing economy firms try to avoid characterizing themselves as traditional employers. Rather, they claim to provide a technology-based service to different categories of user. Contractually, Uber tends to refer to drivers as independent contractors because this helps limit their obligations at labor law and liability in tort.[154] But in general, Uber and other sharing economy firms characterize all participants as consumers. In the UK, for example, Uber actually uses the label "consumer" in its terms of service when drivers download the app,[155] and in a U.S. class action regarding employment classification Uber takes the position drivers are consumers of its software, like passenger, for which they pay a "licensing fee" to Uber.[156] The construction of all participants as consumers is reinforced by the FTC's verbiage in its complaint against Uber, where it refers to drivers as

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[151] *See also infra*, discussing cancellation fees.

[152] The authors thank computer scientist Christo Wilson for an illuminating discussion on surge pricing discrepancies and server requests.

[153] Uber may also be manipulating consumer access to various tiers of service. Uber offers a variety of services under its umbrella, with variations in price and quality of service. For some consumers, the cheaper service uberPool appears as a default, requiring the consumer to overcome default bias in search of another option. For other consumer, perhaps those that Uber somehow understands to be better resourced, the more expensive uberX appears as a default. Katherine Boehret, *Uber Needs to Stop Nudging Me into Carpooling*, THE VERGE (May 28, 2016), online at http://www.theverge.com/2016/5/28/11799584/uber-uberpool-carpool-uberx-app. Uber may even hide uberX entirely by showing no available drivers.

[154] See Miriam A. Cherry, *Beyond Misclassification: The Digital Transformation of Work*, 37 COMP. LAB. L. & POL. J. 577, 578 (2015).

[155] Rosenblat & Stark, *supra* note __, at 3761**;** Uber B.V., *Services Agreement*, Oct. 15, 2015, *available at* https://s3.amazonaws.com/uber-regulatory-documents/country/united_kingdom/Uber+BV+Driver+Terms+-+UK+Preview.pdf.

[156] Rosenblat & Stark, *supra* note __, at 3761-3762**;** Sullivan, *supra* note __, at 16.

"entrepreneurial consumers."[157] At any rate, the opportunities to manipulate drivers is, if anything, considerably more expansive than the opportunity to manipulate ride-hailers.

All users of the platform rely on Uber to fulfill the expectations it scaffolds onto users about how its system works. When issues of deception or other types of problems emerge, such as phantom cars, it can be challenging to dissect which part of the problem is a business practice, a technical issue, or a socio-technical misunderstanding. But discrepancies in the system will generally tend to be more impactful on drivers in that they can result in lost pay or even suspension from the service.

Drivers transact with the company and with riders in accordance with contractual terms written by Uber. This is hardly anomalous; one-sided or boilerplate contracts are commonplace in contemporary markets.[158] But Uber's business model and the transactions it supports are particularly complex. They involve many different configurations and contingencies, such as short-term promotions and new contractual conditions. Drivers must perennially agree to new terms of service in order to login to work—akin to signing a new employee manual every few days.[159]

As Oren Bar-Gill reports in his book *Seduction by Contract*, contracts are getting more complex over time as an empirical matter.[160] Bar-Gill argues that the increasingly dense and involved contracts may represent a purposive attend to exploit human limitations in processing complexity.[161] And as David Horton explores, constant unilateral changes to contracts results in "shadow terms" consumer are not aware of.[162] Worse still, Uber could roll out an aggressive term for a specific period of time and then erase it—a sort of fleeing unconscionability.[163] Together these forces leave drivers at a clear disadvantage. Drivers may not even have a record of the specific terms governing a particular period of time, let alone a clearly legible record of their transactions.

Another concrete way Uber presses its advantage over drivers is to hide information about the marketplace. Uber imposes restrictions on the information available to drivers before they accept a trip, which prohibits them from making informed choices about the rides they agree to carry out. Uber has a policy of blind ride acceptance, such that the driver does not know the destination of the passenger (and hence, the remunerative value of

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[157] FTC Complaint, *supra* note __.

[158] See generally MARGARET JANE RADIN, BOILERPLATE: THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW (2012).

[159] *See supra*, note __ and accompanying text.

[160] Bar-Gill, *supra* note __.

[161] *Id.*

[162] Horton, *supra* note __.

[163] U.C.C. Art § 2-302, Unconscionable contract of Clause.

the trip) before they accept it, which is touted as a means to ensure system efficiency and prohibit destination-based discrimination.[164] If they accept the trip and afterwards decline it, their cancellation rating is affected, which can put their job in jeopardy. Drivers who do not meet the threshold requirements that Uber sets for their behaviors, such as a high ride acceptance rate, a low ride cancellation rate, and a high passenger rating, risk being "deactivated" (temporary suspension or permanent firing) by Uber from the platform.[165]

In other instances, Uber does not hide information entirely, but relies on general impressions or predictions instead of making concrete numbers available. For example, while Uber originally showed drivers precise surge premiums in a given area in association with heat maps that display varying levels of surge through color schemes—yellow means demand is rising, orange means surge may appear soon, and red means it is surging—it changed the design of its app in October 2015 to show heat maps with those color schemes, but without precise prices.[166] In effect, drivers are encouraged to believe in surge, but lack a precise indicator or a guarantee of what that price is, despite being encouraged to travel to specific locations at specific times to receive surge rides. Heat maps thus function as a behavioral engagement tool, but can effectively operate as a bait and switch mechanism similar to the use of phantom cars to entice ride-hailers. These constraints on drivers' freedom to make fully informed and independent choices reflect the broad information and power asymmetries that characterize the relationship between Uber and its drivers, and illustrate how the Uber platform narrows the choices that drivers are free to make.[167]

Uber's algorithmic dispatcher also effectively forces drivers to accept trips they might otherwise reject through a combination of design and policies (even as it nudges passengers to accept services that they might not prefer). This soft coercion manifests most acutely around Uber's uberPool service. Many drivers dislike uberPool, a carpool service, because they must pick up multiple passengers at different points, endure the grief of passengers who dislike being delayed en route to their destination to accommodate other passengers, and suffer lower passenger evaluations as a result, for about the same pay as an uberX ride, where they take one passenger or passenger group from A to B.[168]

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[164] Rosenblat & Stark, *supra* note__, at 3762.

[165] *Id.,* at 3771-72.

[166] For a discussion, see Patrick McQuown et al., *An Analysis of Entreprenuerial Aspects of Uber's Driver-Partner Platform*, Case Study, Brown University *8 (Dec. 2016).

[167] Rosenblat & Stark, *supra* note __.

[168] Matt McFarland, *How Uber Punishes Drivers Who Refuse to Use UberPool*, CNN TECH (Jul. 28, 2016), online at http://money.cnn.com/2016/07/28/technology/uber-uberpool-timeouts/.

In a January 2017 driver survey by Harry Campbell, who runs a popular rideshare blog for Uber, Lyft, and other ridehail drivers, found that "56.5% of drivers disagreed with the statement that they are satisfied with their uberPool experience."[169] In order to decline "automatic" trip requests from uberPool, drivers can try to write in to Uber Customer Support Representatives to opt out. Driver reports on their experiences in online forums indicate that some have had success, but others are not able to opt out.[170] Uber's practices further complicate the situation by providing different terms to drivers depending on when they started to drive for the service. For example, after uberBlack drivers protested against being forced to accept low-paid uberX trips, Uber rescinded its policy requiring them to accept those trips in 2014,[171] only to reintroduce similar terms for new drivers in New York City a few years later.[172]

Hourly guaranteed pay has been another source of concern. While Uber (and Lyft) sets base rates per mile and per minute at which drivers earn, it also offers a range of incentive pay, such as through surge pricing, which offers drivers a premium to drive when and where demand is high, and through hourly guarantees, which offer drivers a guaranteed hourly rate, such as $22/h or $35/h for a given shift if they meet specific criteria during the guarantee period(s).[173] Uber does not disclose the criteria by which select drivers are invited to participate in guarantees, which vary frequently, such as on a weekly basis, but drivers who do opt-in report mixed experiences in claiming guaranteed pay.[174]

Hourly ride guarantees typically come with some version of the following conditions that drivers must meet in order to be eligible for the guarantee: accept 90% of ride requests; complete 2 trips per hour; work between prescribed hours, such as 12:00am-3:00am; be online for 50

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[169] Harry Campbell, RSG 2017 *Survey Results: Driver Earnings, Satisfaction and Demographics*, RIDESHARE GUY 7 (Jan. 17, 2017), online at http://therideshareguy.com/rsg-2017-survey-results-driver-earnings-satisfaction-and-demographics/.

[170] These reports are part of Rosenblat's current fieldwork. Notes on file with author.

[171] Alison Griswold, *Uber Just Caved on a Big Policy Change After Its Drivers Threatened to Strike*, SLATE (Sep. 12, 2014), online at http://www.slate.com/blogs/moneybox/2014/09/12/uber_drivers_strike_they_protested_cheap_uberx_fares_uber_backed_down.html.

[172] Uber, *Full Vehicle List*, http://driveubernyc.com/vehicles/full-list/ (last visited March 1, 2017).

[173] Incidentally, Uber's deployment of multiple pay incentives to shape shift work for its managed labor force indicates that it operates an employment platform, rather than a neutral marketplace, or that surge pricing fails to accurately match supply with demand.

[174] Alex Rosenblat, *How Can Wage Theft Emerge in App-Mediated Work?,* THE RIDESHARE GUY (Aug. 10, 2016), online at http://therideshareguy.com/how-can-wage-theft-emerge-in-app-mediated-work/.

minutes of each hour; maintain a high average passenger-sourced rating, such as 4.7 out of 5 stars; and trips from within a circumscribed radius. (It is worth noting that these types of behavioral engagement tools around pay premiums are not unique to Uber: for example, Airbnb offers hosts a "Superhost" badge to display on their listings, which indicates that they offer extraordinary hosting services, if they meet the following criteria: complete at least 10 trips in their listing per year; maintain a 90% response rate or higher; 80% of their guest reviews have to be 5-stars; and they need low cancellation rates.[175])

Drivers in Rosenblat's ongoing research report that they occasionally get "phantom" or fleeting ride requests.[176] In a typical anecdote, a driver sees a ride request notification flash across their screen for a split second, rather than for the standard 15 seconds, too quickly for them to assess its merits or even blindly accept it. Or, drivers report that they accept every ride request they see, yet upon receiving their pay stubs, discover they were not paid the guaranteed rate. When they inquire with Uber Support, they are told that they did not meet the ride acceptance rate. For example, while a driver may perceive that they accepted 100% of ride requests, Uber Support may say they only accepted 78% of ride requests according to Uber's internal data. Drivers have no way of monitoring app activities to provide an objective account, and perceive they would be in violation of their terms of service were they to try to reverse-engineer the app in an effort to hold the system accountable for their pay.[177]

Some of these instances of missed ride requests may be drivers who are distracted or otherwise miss a legitimate ride request. But reports of phantom flash requests signal either an underhanded business practice that is designed to minimize how many drivers actually receive the guarantee pay, or possibly technical issues that interfere with the mechanisms in place to ensure drivers are paid for their work. Network glitches might result in delays between the time a request from Uber is sent to the driver, and the appearance of that request on the driver's screen. Or, the driver may accept the ride, but there may be a delay in how long it takes for that driver's intent to be conveyed to Uber. If the driver has a slow phone, or another data intensive app is open and running, the Uber app may not take priority.[178]

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[175] *See* https://www.airbnb.com/superhost.

[176] Rosenblat, *supra* note 174.

[177] *Technology Services Agreement*, Dec. 11, 2015, Section 5.2, online at https://s3.amazonaws.com/uber-regulatory-documents/country/united_states/RASIER%20Technology%20Services%20Agreement%20Decmeber%2010%202015.pdf. *See also* infra, Part III.C (arguing that consumer protection law should remove barriers to technical auditing).

[178] The authors thank computer scientists Yan Shvartzschnaider and Christo Wilson for their contributions to the authors' understanding of the technical infrastructure and how it

Drivers' phones may have varying signal strength as they connect to the Uber and mobile phone networks, and there can be other sources of lag across the network. And drivers may have phones of varying quality and different data plans. Importantly, drivers are not well-positioned to appreciate the many factors that could interfere with their expectations for the service they have licensed for Uber and upon which they depend for their income.

Hourly guarantees and ride requests rate are not the only issue where technical infrastructure may not support the social expectations of pricing for drivers on Uber's system. For example, drivers across online forums and in interviews from Rosenblat's ongoing fieldwork report that they are not always paid for cancellation fees. Uber's policy in most cities is that drivers receive a cancellation fee, such as $5 or $10 depending on their city and their tier of service, in the following scenario: they indicate they have arrived to pick up a passenger within the app, but the passenger takes longer than five minutes to get in the car. After five minutes elapses, drivers can report to Uber that the passenger did not show up, and claim the cancellation fee.[179]

Drivers have mixed experiences in actually being paid that cancellation fee. When they make further inquiries of Uber Support, they receive responses indicating that they did not, in fact, wait for five minutes, even if they assert that they waited six or seven. One dissatisfied driver requested time stamps for a specific trip to verify that he should merit the cancellation fee, to which Uber's representative replied: "We're unable to provide screenshots of our software, but I can tell you that it was 4 minutes and 59 seconds. I understand that this is frustrating we can't add the fee unless it's the full 5 minutes, as this is something that happens automatically in our system."[180]

In a system where payment or non-payment of a fee hinges on seconds, the absence of a mutually accountable time notation is problematic. This problem is so prevalent that one enterprising driver developed a rideshare timer available to be purchased and downloaded for the cost of one cancellation fee ($5), with the express goal of helping drivers claim their fees.[181] Driver frustration with cancellation fees abounds in online driver forums. While some drivers undoubtedly do not wait the full 5 minutes,

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intersects with concerns around wage theft, and to note that this is a hypothetical line of inquiry, with high level, unconfirmed, and untested assumptions based on a simplistic and generic model of any given distributed system.

[179] cite

[180] cite

[181] Harry Campbell, *RSG035: Michael Tee on Launching The App Rideshare Timer*, THE RIDESHARE GUY (Feb. 29, 2016), online at http://therideshareguy.com/rsg035-michael-tee-on-launching-the-app-rideshare-timer/.

reports of unpaid cancellation fees are recurrent, and drivers have no way within the app to validate how much time has elapsed.

The issue of unpaid cancellation fees indicates that Uber is either engaged in a nefarious business practice of shorting driver pay through the design of its timerless app, or that something is awry with the technical infrastructure that accounts for driver pay. The implication is that Uber promises to pay if drivers wait for five minutes, but it withholds the information drivers need to ensure that the time they wait is accounted for to ensure payment. By contrast, for example, Uber's competitor Lyft keeps a timer in the app so that drivers can see when five minutes has elapsed. Even if Lyft experiences the same technical time discrepancies as Uber does, the placement of an in-app timer aligns better with a general lay or driver understanding of time as an objective measure, and mitigates the issue of unfairness in the user experience of the app.

3. The wisdom of the captured

The nature of the sharing economy, and the sharing economy firm, continues to evolve. A company such as Uber possesses far grander ambitions than simply connecting drivers and riders. Uber recently launched its own mapping service, for instance, and has invested significantly in driverless cars.[182] Ultimately, the company hopes to revolutionize transportation logistics.[183] As such, Uber's motivations involve both profiting in the short run from virtual dispatch services as well as advancing its many other goals. Conflicts may arise between Uber's systemic goals and the everyday interactions of other participants—a phenomenon Rosenblat and Tim Hwang refer to as the "wisdom of the captured."[184]

Imagine if Uber drivers were obligated to use a particular mapping service to choose a route. In a sense, they already are: Uber mediates complaints from passengers that a driver took an inefficient route by examining whether the driver deviated from the route suggested by their GPS.[185] Now imagine the navigation software behind the mapping service is

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[182] Brian McClendon, *Mapping Uber's Future*, Uber Newsroom, https://newsroom.uber.com/mapping-ubers-future; *Pittsburgh, Your Self-Driving Uber is Arriving Now*, Uber Newsroom, https://newsroom.uber.com/pittsburgh-self-driving-uber.

[183] *See* Heft, *supra* note __ (interviewing Uber's founder).

[184] Rosenblat & Hwang, *supra* note __.

[185] It is worth noting that Uber does not volunteer precisely how it measures "inefficient routes" against the route the driver took, but the general wisdom drivers have derived from their experiences is that they are expected to ask passengers if they have a preferred route. If, for example, the passenger later complains about an "inefficient route", drivers risk being penalized, specifically by having their pay docked, for not taking the

trying to improve performance by sending participants along an inefficient route to test road conditions and generate data on the roads less traveled—a technique known in technical literature as the "multi-arm bandit algorithm."[186] This may improve the product overall at the expense of the drivers, who waste travel time and risk conflicts with passenger.

More generally, Uber drivers may one day face competitive pressure from Uber's own fleet of self-driving vehicles. Contemporary self-driving technology relies in large measure on machine learning, which in turn is trained on data from actual human driving.[187] We cannot know for sure, but assuming Uber is training its own systems on the limitless driver data to which it has access, Uber participants may be unwittingly training their replacements. As Rosenblat and Hwang note: "Uber's commitment to self-driving cars, enabled in part by the data gathered by their drivers, is arguably the clearest articulation yet that Uber will make choices that benefit the system over individual drivers. … Self-driving cars would directly compete with and impact the human driver's of Uber's system, effectively automating them out of a job."[188]

IV. THE (NEW) ROLE OF CONSUMER PROTECTION LAW

To summarize the discussion so far: the sharing economy is an umbrella term referring to a particular set of techniques and practices but also a rhetorical strategy aimed at attracting support and fending off restriction. Sharing economy firms, which have predecessors in Craigslist and elsewhere, leverage pervasive connectivity in order to facilitate trusted transactions between strangers on digital platforms. This creates economic and other value but also raises concerns, including those about racial bias, safety, and fairness to competitors and workers. We introduce a further complexity in the prospect that sharing economy firms can leverage their unparalleled access to information and control over user experience to the disadvantage of those users. Connecting our concerns is the common theme of how access to information coupled with control of design permits sharing economy firms, such as the subject of our case study to manipulate their users.

Information plays a role, of course, in many conversations around the promise or perils of the sharing economy. A recent report shows bias in Airbnb transactions by observing who is able to secure house or how users

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GPS-recommended route. Drivers generally have the choice to use either Uber's in-app navigation service, Waze, or Google Maps.

[186] *Id*., at 4.

[187] *Id.,* at 7.

[188] *Id.*

rate their experiences and then parsing this information demographically.[189] Another report shows discriminatory bias against Uber and Lyft passengers with African American last names, who experience longer wait times.[190] What remain undertheorized, however, is the specific role of information asymmetry between platforms and users, and the accumulation of affordances that accompanies it. The problem is not simply that Uber has access to detailed information about its ecosystem; the problem is that *only* Uber does. This access, coupled with its vantage as a digital intermediary, permits Uber to shape outcomes to its advantage.

Addressing the harms—actual and potential—that we raised in Part II requires grappling directly with information asymmetry between sharing economy firms and other entities. Consumer protection law, with its long emphasis on information and power asymmetry in the market place, is relatively well suited to this task. But to unpack and address the sharing economy, consumer protection law will need to evolve beyond its present confines in essentially two ways. First, regulators will need to develop a better understanding of the architecture behind and choices of sharing economy firms in order to uncover the entire range of offending practices. And second, regulators or courts will need to find a means by which to address those practices (assuming sunlight itself is not a sufficient disinfectant). This could involve drawing lines between permissible and impermissible practices, i.e., identifying a set of criteria by which to determine that a given digital act or practice rises to the level of unfair or deceptive. It could involve attempting to alter the incentives of firms to better align them with those of other participants. Or it could involve a hybrid approach such as characterizing platforms as "fiduciaries" of the people whose data they possess, as some have proposed.[191]

The reminder of this Part proceeds as follows. The first section gives a brief background on consumer protection law, paying particular attention to the role of information asymmetry. The second section addresses the failure of consumer protection law to keep up with the realities of digital commerce. A final section describes how consumer protection law might be update to address the particular challenges of the sharing economy.

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[189] Benjamin Edelman, Michael Luca, & Dan Svirsky, *Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment*, AM. ECON. J.: APPLIED ECON., online at http://www.benedelman.org/publications/airbnb-guest-discrimination-2016-09-16.pdf.

[190] Yanbo Ge, Christopher R. Knittel, Don MacKenzie, & Stephen Zoepf, *Racial and Gender Discrimination in Transportation Network Companies*, The National Bureau of Economic Research (Oct. 2016), online at https://www.nber.org/papers/w22776.pdf.

[191] *See infra*, Part III.C.

A. Consumer Protection: Origins and Purposes

Consumer protection law potentially covers a wide and varied area. As Kenneth Dam puts it, "The only thing that seems to hold the subject together is our desire to project someone whom we call *the* consumer."[192] A painstaking analysis could thereby encompass any statute, regulation, or court decision aimed at protecting consumers in any capacity or context. This could include everything from product liability suits to product recalls by federal agencies to fair lending rules to municipal requirements that restaurants post the results of health inspections. Such a comprehensive canvassing of consumer protection law is beyond the scope of this article. For purposes of our discussion, we focus on the contemporary core of consumer protection law: policing the marketplace against anticompetitive, unfair, or deceptive practice.

Accounts of contemporary consumer protection law tend to trace its origins to the Progressive Era response to the laissez-faire business practices of the nineteenth century.[193] With the passage of the Sherman Anti-Trust Act in 1890 and the Federal Trade Commission and Clayton Acts in 1914 (following the Supreme Court's decision limiting antitrust enforcement in *Standard Oil v. United States*)[194], Congress sought to rein in the excesses of the various "trusts" or monopolies that had grown up in the preceding decades of unfettered industry.[195] The concern was that large monopolies were engaging in predatory pricing and other unfair practices as well as exercising political power to harm new entrants, all to the determent of American consumers.

Although the purpose of Congress' intervention was ultimately to protect consumers from the predation of powerful firms, the initial means they employed was to direct agencies and courts to protect American businesses from one another. That is, government intervened on behalf of businesses which had been shut out of the marketplace or otherwise hampered in their operations by the predatory practices of a monopolistic incumbent.[196] In the short run, such practices may appear to benefit the consumer because his or her purchases are being subsidized by the would-be monopolist. The anticipated, long-term result of policing unfair methods, however, is more robust competition, which in turn drives up the quality

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[192] Kenneth W. Dam, *Consumer Protection: An Overview*, 39 ANTITRUST L.J. 917, 917 (1969-70).

[193] See CHRISTOPHER JAY HOOFNAGLE, FEDERAL TRADE COMMISSION PRIVACY LAW AND POLICY 4-5 (2016). *See also* MANSEL G. BLACKFORD & K. AUSTIN KERR, BUSINESS ENTERPRISE IN AMERICAN HISTORY 226-64 (1986).

[194] 221 U.S. 1 (1911).

[195] HOOFNAGLE, *supra* note __, at 5.

[196] *Id.*

and variety of goods and services and drives down the prices consumers pay for them over time.[197]

Antitrust laws and other prohibitions on unfair competition help preserve consumers' range of choice in the market by preventing established businesses from excluding new entrants through the use of unfair techniques of competition—for example, by dropping prices so low that no one else can stay in business and then raising prices again in the absence of competitors. These ongoing efforts to stamp out unfair competition are directed at ensuring consumers have sufficient choices around goods and services in the marketplace.[198] This set of problems is sometimes called "external" consumer protection because it involves a set of possibilities that exists outside of the individual consumer.[199] Problems arise when one firm abuses greater power over others and thereby limits the range of goods and services available to the consumer.

To help consumers navigate the free market, Congress conferred upon the Federal Trade Commission the additional authority to police against "unfair or deceptive acts or practices in or affecting commerce."[200] Under this authority, issued in 1938, the FTC immediately began to prohibit firms from introducing fraudulent or misleading information into the marketplace.[201] For example, the FTC might pursue a large home and beauty company for faking a demonstration of the efficacy of its razor by pretending it can shave sandpaper.[202] Enforcement against deception, bolstered by a wide variety of federal and state requirements that companies affirmatively disclose certain categories of information, continues to be a major area of activity at the FTC. Within a few decades, however, the FTC had also built up its enforcement of "unfair" practices—such as aggressive door-to-door sales or unconscionable contract terms—not involving outright deception but nevertheless perceived to take advantage of consumers.[203] This set of problems is sometimes called "internal" consumer protection because it involves the internal mental state and affordances of the consumer him or herself.[204] Problems arise when firms abuse their asymmetry of information or power over consumers, resulting in gain to the

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[197] *Id.*

[198] Neil Averitt & Robert H. Lande, *Consumer Sovereignty: A Unified Theory of Antitrust and Consumer Protection Law*, 65 ANTITRUST L.J. 713, 713 (1997).

[199] *Id.*, at 714.

[200] Federal Trade Commission Act, 15 U.S.C. § 45(a)(1) (2012).

[201] HOOFNAGLE, *supra* note __, at 53.

[202] *Id.*

[203] Marshall A. Leaffer & Michael H. Lipson, *Consumers Actions Against Unfair or Deceptive Acts or Practices: The Private Uses of Federal Trade Commission Jurisprudence*, 48 GEO. WASH. L. REV. 521, 528 (1980).

[204] Averritt & Lande, *supra* note __, at 714.

former and harm to the latter.

In the 1960s, faced with rampant consumerism that strained the agency's capacity to address unfair or deceptive practices across the entire nation, the FTC also encouraged the states to promulgate their own consumer protection laws.[205] Most states did. These "mini-FTC acts" often contained a private cause of action, permitting not only regulators but aggrieved individuals to pursue claims of deception and unfairness.[206] These acts supplemented existing prohibitions on fraud, which were available to consumers but limited by the requirement that the plaintiff show an intent, not just a tendency, to mislead.

This era also saw the ascendance of many laws and regulations aimed at improving the baseline safety or efficacy of a range of products, requirements that firms inform or warn consumers about their products and services, and the maturation of product liability in tort law.[207] Together these developments, which have waxed and waned over time with public perceptions of the limits of government power, have come to represent what we think of as consumer protection law today.

One way to think about the interrelation between the role of consumer protection law in policing against unfair competition among firms (e.g., through antitrust laws) and its role in policing against unfair and deceptive practices aimed at consumers (e.g., through truth-in-lending laws), is to consider what is needed to produce a theoretical "sovereign consumer."[208] A sovereign consumer has both real choices in the marketplace and a meaningful ability to exercise them. Unfair competition laws involve careful calibration of the system as a whole to enable sufficient market participants. The more (and more diverse) the market participants, the greater the range of consumer choices in goods and services, including with respect to quality and price.

Unfair and deceptive practices laws instead involve the capacity of consumers who possess market choices to navigate them in practice.[209] Prohibitions on deceptive practices, such as misleading claims as to efficacy or price, help ensure that the consumer has access to good information as she makes decisions on what products and services to consume. Prohibitions on unfair practices, such as coercing the consumer into making a purchase, help ensure the consumer is free to act on the information he or

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[205] See Danielle Keats Citron, *The Privacy Policymaking of State Attorneys General*, 92 NOTRE DAME L. REV. 747 (2016).

[206] *Id.*, at 753.

[207] *See* Blackford & Kerr, *supra* note __, at 226-64.

[208] See Averitt & Lande, *supra* note __, at 713 (referring to the "sovereign consumer" as the "overarching unity" of consumer protection law).

[209] *Id.*, at 714.

she receives. Thus, an example of a deceptive practice would be to claim that information posted to a social network is private when in fact it or becomes public,[210] and an example of an unfair practice would be service person dismantling a consumer's stove and refusing to reassemble it until she agreed to purchase new parts.[211]

Despite some consensus around the idea that consumer protection law exists to preserve consumer sovereignty in these ways, fundamental disagreement remains about the exact societal interests at stake. The influential Chicago School is grounded in economics and sees preserving allocative and productive efficiency as at the heart of what lawmakers and courts intend in policing both antitrust and unfairness and deception.[212] The idea is to avoid market failure, understood as the misallocation of resources to something other than their highest value use, by prohibiting certain activities that skew the market and by preserving the flow of good information between consumers and firms so that consumers may exercise their preferences.

But others convincingly challenge the efficiency rationale, conceptualizing consumer protection as a kind of prohibition on unhealthy and immoral levels of consumer exploitation. Robert Lande, for example, looks to the legislative records of each of the federal legislation we mention above—the Sherman, Clayton, and FTC Acts—and concludes that "Congress was concerned principally with preventing 'unfair' transfers of wealth from consumers to firms with market power."[213] Congress at the relevant times was concerned with the capability of powerful firms to set prices and engage in practices that would annex any economic windfall from commerce to industry and minimize the windfall flowing to consumers. Lawmakers saw this wholesale appropriation of social surplus from commerce as immoral (i.e., "unfair").[214]

Whatever consumer protection law's normative beginnings, regulators tend to be reticent to bring actions solely on the basis of public interest. Indeed, in the late seventies, Congress responded to perceived overreaching by the FTC by delaying its funding.[215] The Commission eventually issued a statement better clarifying the contours of its own power.[216] Today, federal

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[210] *E.g.*, In the Matter of Facebook, Inc., Decision and Order, FTC Docket No. C-4365 (Jul. 27, 2012).

[211] *E.g.*, Holland Furnace Co. v. FTC, 295 F.2d 302 (7th Cir. 1961).

[212] *See* Robert H. Lande, *Wealth Transfer as the Original Primary Concern of Antistrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65, 68 (1982), citing Robert Bork and Richard Posner.

[213] *Id.*

[214] *Id.*, at 71.

[215] HOOFNAGLE, *supra* note __, at __.

[216] Daniel J. Solove & Woodrow Hartzog, *The FTC and the New Common Law of*

regulators such as the FTC look for a materially misleading statement or evidence of a significant harm to consumers that the consumer cannot reasonably avoid and has no countervailing benefit to competition.[217] State actions at common law are more adventurous but still not fairly characterized as policing morality.[218]

Several aspects of consumer protection law are clear, however one conceives of the origins and purposes. First, the law assumes the marketplace will function improperly and to the detriment of consumers absent government intervention of some time. And second, determining what acts or practices are permissible requires the regulator or court to look at both complex interactions between consumers and firms that go to the availability of options, and the prospect that consumers will be able to exercise meaningful choice in practice. Detecting and addressing harmful asymmetries of information and power among firms and between firms and consumers is thus at the heart of consumer protection law.

Throughout the remainder of this section we will emphasize the interaction between the sharing economy and the Federal Trade Commission. The FTC, with its general mission of market and consumer protection, is the most likely and well-positioned agency to address sharing economy ills. And the FTC has already engaged with the sharing economy in highly visible ways. Many of the insights of this section also apply with equal force to other agencies at the federal or local level.

B. Consumer Protection in 2017: From Amway to Uber

As alluded to in our Introduction, consumer protection law as a construct is surprisingly absent from sharing economy discourse, which tends to focus on other important considerations such as labor laws, racial bias, access to services, and safety.[219] These issues intersect with consumer protection, of course. The regulations that states and local municipalities would extend to ride-hailing or room-hosting, which already attach to taxis and hotels, exist in part to protect consumers from harm.[220] The difference is one of emphasis: the discourse around consumer protection law

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Privacy, 114 COLUM. L. REV. 583, 599 (2014).

[217] *Id.*

[218] *See generally* Citron, *supra* note __.

[219] *See supra*.

[220] *See*, *e.g.*, Ehret v. Uber Technologies, Inc., 68 F.Supp.3d 1121, 1132 (Cal. D. 2014) (finding that standing for CLRA and UCL consumer protection claims against Uber requires a showing of harm); City of New York v. Smart Apartments, LLC, 39 Misc.3d 221, 225–26 (N.Y. Sup. Ct. 2013) (noting that protecting consumers from deception and from unsafe living conditions are both encompassed in the goals of New York City Consumer Protection Law (New York City Admin. Code § 20-700)).

specifically looks to information and power asymmetry to determine whether, in context, a firm through a particular practice interferes with individuals or the market in ways society would reject as deleterious.

Today the role of information in consumer protection is even more critical than in the past. Firms in every industry are awash in data, relying on the collection and increasingly sophisticated processing of intelligence about consumers.[221] Information has itself become the subject of consumer protection under the rubric of privacy. The FTC has emerged in recent years as a species of consumer privacy watchdog, investigating and occasionally fining companies for invasive privacy practices or poor data security as unfair or deceptive acts and practices under Section V of the FTC Act.[222]

In a sense, the FTC's assertiveness in the area of privacy is strange for an agency devoted to the promotion of free trade. Economic orthodoxy suggests that markets generally benefit from the free flow of information between consumers and firms, leading many economists to criticize privacy as an artificial restraint on trade.[223] One way to explain the agency's interest in privacy, however, is to understand it as a way to help preserve basic symmetries of information between firms and consumers.[224] As discussed in detail in Part II, firms with access to detailed data about consumers have the ability and the incentive to leverage this information to the consumer's detriment. Overindulgence in such activity at a minimum undermines the market by promoting resentment and distrust.[225]

Given its emphasis, consumer protection law seems well-positioned to help unpack and address the sorts of data-driven problems that may arise when a platform possess and leverage asymmetries of information and power. But so far consumer protection law has yet to catch up to a commercial world fueled by data. In its 100 years of service, the FTC has witnessed and helped put a stop to countless bad practices. Even so, it is only beginning to adapt to certain features of the new economy.

To be clear: consumer protection authorities have hardly ignored the sharing economy. In June of 2015, the Federal Trade Commission convened a daylong workshop entitled *The "Sharing" Economy: Issues Facing Platforms, Participants, and Regulators* and solicited comments from the

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[221] *See* JOSEPH TUROW, THE DAILY YOU: HOW THE NEW ADVERTISING INDUSTRY IS DEFINING YOUR IDENTITY (2011).

[222] *See* Solve & Hartzog, *supra* note __, at 585-86. ("FTC privacy jurisprudence has become the broadest and most influential regulating force on information privacy in the United States....").

[223] Ryan Calo, *Privacy and Markets: A Love Story*, 91 NOTRE DAME L. REV. 649 (2016).

[224] *Id.*

[225] *Id.*

public.[226] The FTC summarized the workshop and public comments in a November 2016 staff report.[227] The lengthy report describes at a high level of generality what makes for a successful sharing economy platform and engages in sustained discussion of competition issues sharing economy platforms may generate. In general, the report is hopeful that sharing economy firms will *increase* competition overall through "a gale of creative destruction."[228]

The report flags other potential issues that threatened to compromise the sharing economy ecosystem—including low information about the quality of goods and services—and identifies reputation systems and other mechanisms by which sharing economy firm address these issues.[229] The report raises a range of concerns around safety, sanitation, and privacy but stops short of suggesting intervention.[230] Indeed, the report specifically assesses the pros and cons of regulatory intervention in the sharing economy, with many experts and FTC staff concluding that regulation would be premature.[231]

Overall the FTC's 2015 workshop and 2016 report are best characterized as cautiously supportive of the sharing economy. A few months later, however, the FTC made it clear that its rules apply in full force to sharing economy firms. The agency announced a twenty million dollar settlement with Uber over allegations that the company misled drivers—whom the Commission called "enterprising consumers"—about how much they could earn.[232] The complaint alleges that Uber disseminated advertisements that overestimate the likely hours and yearly income of drivers.[233] Moreover, according the FTC, Uber induced participation in a Vehicles Solution Program that helps drivers lease or purchase a car, again by overestimating the likely returns on investment and making public claims for which the company had insufficient support.[234]

What the FTC's complaint shows is that sharing economy firms, like everyone else, are subject to federal prohibitions on deceiving consumers,

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[226] Federal Trade Commission, Press Release, https://www.ftc.gov/news-events/events-calendar/2015/06/sharing-economy-issues-facing-platforms-participants-regulators (Jun. 9, 2015).

[227] FTC Sharing Economy Report, supra note __.

[228] *Id.*, at 19, quoting JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 84 (1950).

[229] *Id.*

[230] *Id.*

[231] *Id.*

[232] Federal Trade Commission, *Uber Agrees to Pay $20 Million to Settle FTC Charges that It Recruited Drivers with Exaggerated Earnings Claims*, Press Release (Jan. 19, 2017). See also FTC Uber Complaint, *supra* note __, at *3 (defining "drivers").

[233] *Id.*, at *5-8.

[234] *Id.*, at *8-10.

broadly defined. No less than a hardware store or vitamin supplement company, Uber cannot make a material claim in its marketing materials for which it lacks evidence. But is Uber—with its carefully managed, complex data ecosystem—really like a chain of hardware stores? We submit it is not.

There has been a sea change in the affordances and techniques of modern business; consumer protection law has yet to catch up. One way to see this is to compare the 2017 Uber complaint with the Commission's 1979 investigation of Amway. Back in the spotlight with the installation of Amway heiress Betsy DeVos as Secretary of Education, Amway is a multi-level marketing company originally founded in 1949 that facilitates peer-to-peer sales of home and beauty products.[235] The model involves entrepreneurial consumers (to borrow the FTC's term for Uber drivers) who purchase goods from Amway and resell them in their own neighborhoods. In addition to small profits from the sale of goods, Amway sellers receive bonuses or commissions for signing up new sellers.

Following the receipt of complaints, the FTC initiated an investigation of Amway. Initially, FTC staff took a highly skeptical position, referring to Amway as a "pyramid distribution scheme" with the "potential for massive deception."[236] But ultimately the Commission arrived at a place of cautious optimism. The Commission praised Amway's "highly unusual distribution system" for its capacity to bypass "near insurmountable" barriers to competition with established firms such as Procter & Gamble and "interject[] a vigorous new competitive presence into this highly concentrated market."[237]

Having backed away from claims that Amway is a pyramid scheme, and having praised the company for its competitive disruption and empowerment of entrepreneurial consumers, the FTC nevertheless identified certain unlawful practices. Specifically, the Commission ordered Amway to cease "misrepresentation in any manner the past, present, or future profits, earnings, or sales from such participation" even by implication.[238] The Commission also admonished Amway for attempting to fix the prices at which distributors offered Amway products for sale through the printed materials it disseminated.[239]

The FTC takes a strikingly similar strategy in 2017 toward a very different company. Just as the Commission praised Amway for competitive innovation, the agency's staff report praises sharing economy firms for its

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[235] *See* FTC Amway Order, *supra* note __, at 632.
[236] *Id.*, at 715, citing Initial Decision.
[237] *Id.*, at 710-11.
[238] *Id.* at __.
[239] *Id.* at __.

"disruptive innovation."[240] And just as the FTC went on to rebuke and limit Amway for its published claims over earnings potential, the Commission also rebuked and limited Uber for its own claims around earnings—the only difference being that Amway published in the local paper and Uber on popular websites. The combined effect of these interventions is, first, to establish the value add of a market disrupter by emphasizing its positive competitive effects and the opportunities it creates for consumers. And second, to clarify that ordinary rules apply to the disrupter by placing modest limitations such as a prohibition on deception in written advertisements. Meanwhile, the consumer observes that a federal watchdog both reviewed the sharing economy's record and acted upon it.

Amway and Uber are not without their parallels. We tend to agree with the Commission in both instances that a novel strategy to disseminate goods and services can have positive effects on the overall market in terms of price and quality. Both companies faced skepticism fueled by incumbent competitors and both faced similar challenges such as high rates of turnover.

But whereas Amway was and remains a multi-level marketer of household goods, Uber's ambitions extend well beyond ride-sharing into mapping, logistics, and untold other domains. Whereas Amway polices its ecosystem with contracts and a "Code of Ethics and Rules of Conduct" available for everyone to examine,[241] Uber and other sharing economy firms leverage dynamic digital platforms consisting of thousands fueled by ceaseless flows of information about participants. Much happens beneath the surface. Interestingly, whereas the FTC was able to show specific measures by which Amway controlled prices within its distribution ecosystem through specific contractual terms, no such discussion appears in the FTC's complaint against Uber, which constantly changes its terms and displays them only on the drivers' apps.

The purpose of Part II is to show that Uber (as a case study) can and likely does leverage its access to information and control of the interface to its advantage. The company manipulates what ride-hailers and providers see and limits or channels all participants' behaviors toward Uber's ends. Assuming the phenomena participants report cannot be explained another way, at least some of these acts or practices implicate consumer protection law. For example, if it turns out Uber is limiting the number of drivers who receive hourly pay guarantees by flashing phantom requests on purpose, this would be *at best* a misleading act or practice.[242] Even if the explanation

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[240] *See* FTC Sharing Economy Report, *supra* note __, at 1, 10.

[241] FTC Amway Order, *supra* note __, at 635. *See also* Amway, Rules of Conduct, http://www.amway.com/support/ordering-product-support/rules-of-conduct.

[242] At worst it would constitute fraud.

were that problems with the system such as latency is behind the flash requests, it might still rise to the level of an unfair practice, i.e., a material harm to (entrepreneurial) consumers that they cannot reasonably avoid. A thorough vetting by a twenty-first century agency—particularly a pioneer in bringing technological savvy to government—would involve investigating these practices as or more deeply than written ads.[243]

C. Updating Consumer Protection Law

What challenges face a contemporary consumer protection authority interested in addressing the full range of activities of the sharing economy? We assume for purposes of our argument that regulators are unlikely to intervene absent articulable harm to consumers. This is not necessarily obvious. While the FTC's unfairness standard requires a showing of harm, the agency is empowered to address deception even absent such a showing.[244] And, as discussed above, there is evidence in the legislative record of a moral dimension to consumer protection law that concerns itself with unjust enrichment of firms at the expense of consumers.[245] We adopt the more conservative view for purposes of argument that justifying intervention into business practices requires pointing to harm to consumers and thereby set a higher bar than strictly necessary.

Assuming harm is the proper lodestar for consumer protection law, we envision essentially two critical tasks for the regulator. The first is detecting harms that are not manifest from observable public statements. This represents a nontrivial task roughly akin to the problem of discovering lines of software code that instruct a vehicle to cheat on an emissions test. The second is addressing those harms in a way that does not foreclose legitimate experimentation by platforms. Companies often have perfectly acceptable reasons for observing consumers, for treating consumers differently, and even for nudging consumer behavior toward profitable ends. Having gained a complete picture of digital techniques and practices, regulators like the FTC still have to determine what rises to the level of unfair or deceptive. We address each challenge in turn.

1. Detecting harm

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[243] Agency investigations are conducted in confidence and it is not uncommon for the FTC to bring multiple allegations against the same firm, particularly a tech giant. Thus, we do not mean to suggest that agency could not at some later time reveal its findings around Uber or any firm's app-based practices.

[244] *See* Solove & Hartzog, *supra* note __, at __.

[245] *See supra*, notes __ to __ and accompanying text.

Uber is positioned to do so much more than overestimate earnings or returns to potential drivers in advertisements. The company observes and structures millions of transactions under the scaffolding of its app and uses what it observes to channel participant behavior toward a variety of ends. It seems implausible that Uber would engage in textbook deception in public advertisements, which everyone can see, but never manipulate circumstances beneath the surface. And, as Part II shows, we have already encountered indications that Uber may be engaging in questionable behaviors.

Some of these practices are pretty obvious. A consumer can complain to regulators that while it first appeared there were drivers nearby, once she initiated the request those drivers disappeared and she had to wait. Others require more work to uncover. The FTC had ready access to Amway's paper contracts in the nineteen seventies. In theory a regulator could also discover just how often Uber changes its contracts with drivers and whether any versions of those contracts are too complex to follow or contain objectionable terms. But this would require a great deal of diligence and the cooperation of drivers or the company. Then there are practices about which we can only speculate. We have no way of knowing whether the fleeting ride requests or lost cancellation fees that drivers report, and which result in lower income, are the product of user error, poor design, or intent. Still other practices may be entirely invisible, such as Uber's practice of evading police in jurisdictions where drivers or the company might be issued a citation.

Regulators have at least two significant means by which to explore what sharing economy firms are doing behind the digital scenes. The first is direct investigation. The FTC can and does invite industry to workshops, like its sharing economy workshop, to talk about what they do.[246] Industry participants control their own message in these contexts. But the agency is also empowered by statute to do its own digging. Not only may the FTC subpoena witnesses and compel the production of documentary evidence in the course of an investigation,[247] it can require the filing of annual or special reports or answers to specific questions.[248] In some cases, the agency may even conduct a mandatory visit to a business for purposes of understanding industry practices.[249]

Law professor Rory Van Loo briefly discusses this underutilized

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[246] *E.g.*, FTC Sharing Economy Report, supra note __.

[247] 15 U.S.C. §§ 46, 49, 57b-1.

[248] Id. at § 46. This is called a 6(b) order because it arises from Section 6 of the Federal Trade Commission Act.

[249] cite

regulatory affordance in the context of retail.[250] Building in part on digital market manipulation, Van Loo argues that the retail industry has become increasingly adept at gathering and leveraging consumer information in problematic ways.[251] He recommends regulatory oversight on par with financial regulation where agencies become much more familiar with business practices.[252] Van Loo cites specifically to the FTC's underutilized investigatory powers in the course of his discussion.[253]

Getting data from sharing economy firms won't be easy. Reading the headlines around the well-publicized feud between ride-hailing services and Austin, Texas over municipal regulatory requirements, it would appear that the city was exclusively concerned with how well Uber and Lyft drivers were vetted for felonies and how many wheelchair accessible cars needed to be on the road at any given time. These are important issues, which the ride-hailing services were ready to concede to some extent: the model legislation the companies spent millions promoting to Austin voters, ultimately unsuccessfully, had provisions for better vetting and for ensuring accessibility.[254] Uber and Lyft's proposal rejected the fingerprint-based vetting system the cities preferred—which the press covered in detail.[255] But there was an equally big gap in the provisions around accessing Uber and Lyft's data. Austin wanted the services to report regularly on a range of specific questions, or see their license to operate revoked.[256] The companies' proposed bill was more limited, providing for independent audit of some driver records and the filing of quarterly reports.[257]

The second means by which to explore sharing economy acts and practices is to incentivize third party researchers to investigate firms. In 2015, the car giant Volkswagen famously conceded that its vehicles were built to perform differently in road conditions than on mandatory emissions

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[250] Rory Van Loo, *Helping Buyers Beware: The Need for Supervision of Big Retail*, 163 PENN. L. REV. 1311 (2015).

[251] *Id.* at 1320.

[252] *Id.* at 1379.

[253] *Id.* ("Like financial regulators, the FTC has the power to collect information directly from firms… Yet, unlike financial regulators, the FTC does not exercise these powers.").

[254] *See* § 13-2-508 of An Ordinance Ordering a Special Election to Be Held in the City of Austin on May 7, 2016, Ordinance No. 20160217-001 (proposed), online at https://arstechnica.com/wp-content/uploads/2016/05/prop1.pdf (hereinafter, Uber & Lyft Ordinance).

[255] *E.g.*, Kia Kokalitcheva, *Inside Uber and Lyft's Texas Showdown Over Fingerprints*, FORTUNE (Jan. 29, 2016).

[256] *See* § 13-2-516 of An Ordinance Amending City Code Chapter 13-2 Relating to Transportation Network Companies (TNCs) and Terminating TNC Operating Agreements, online at https://www.austintexas.gov/edims/document.cfm%3Fid=245769.

[257] *See* Uber & Lyft Ordinance, *supra* note __, at § 13-2-507.

tests.[258] The Volkswagen code instructing the car to perform more efficiently during emissions testing was discovered when an international non-profit commissioned research into how cars might preform more poorly than expected in real-world conditions.[259] In testing several Volkswagen diesel models, a team at West Virginia University found an apparently intentional discrepancy.[260] Testing by then Stanford PhD candidate Jonathan Mayer discovered Google's alleged circumvention of the Safari browser's cookie blocking featuring, leading to a multimillion dollar fine against the company.[261] The practice of academics discovering impropriety is not unique to the digital world—it was finance professor David Yermack who first uncovered the scandal around improper backdating of stock options in 1997.[262] But regulators can, and sometimes already do, call upon or fund independent researchers specifically to analyze digital practices and attempt to uncover unfair or deceptive practices.[263]

To the extent regulators pursue the second strategy, there is an ancillary challenge around removing perceived and actual barriers to research. Researchers who investigate sharing economy firms may need to reverse engineer platforms, scrape data, impersonate consumers, and other activities aimed at exploring firm practices. In so doing, they risk legal pushback—valid or not.[264] For example, a firm might argue that a researcher violated the terms of service and therefore exceeded authorized authority for

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[258] Jack Ewing & Jad Mouawad, *Directors Say Volkswagen Delayed Informing Them of Trickery*, N.Y. TIMES (Oct. 23, 2015), online at https://www.nytimes.com/2015/10/24/business/international/directors-say-volkswagen-delayed-informing-them-of-trickery.html.

[259] *Id.*

[260] GREGORY J. THOMPSON, DANIEL K. CARDER, MARC C. BESCH, ARVIND THIRUVENGADAM & HEMANTH K. KAPPANNA, IN-USE EMISSIONS TESTING OF LIGHT-DUTY DIESEL VEHICLES IN THE UNITED STATES 106–08 (2014), online at http://www.theicct.org/sites/default/files/publications/WVU_LDDV_in-use_ICCT_Report_Final_may2014.pdf.

[261] In the Matter of Google, Inc., FTC File No. 102 3136 (3/30/11), Decision and Order, Docket No. C-4336, Issued Oct. 13, 2011, available at http://www.ftc.gov/os/caselist/1023136/111024googlebuzzdo.pdf; In re Google Inc. Cookie Placement Consumer Privacy Litigation, 806 F.3d 125 (3rd Cir. 2015).

[262] Jodell R. Nowicki, *Stock Options Backdating: The Scandal, the Misconceptions, and the Legal Consequences*, ST. JOHN'S J. OF L. COMM. 251, 257 (2008). We owe this example to Elizabeth Pollman.

[263] The FTC uses technologists as expert witnesses. *E.g.*, Expert Report of Jennifer King, Federal Trade Commission v. Amazon.com, Inc., Case No. 2:14-cv-01038-JCC (W.D. Wash. Oct. 16, 2015). Other entities fund external researchers to conduct technical reports. *E.g.*, Güneş Acar et al., Facebook Tracking Through Social Plug-Ins, Belgian Privacy Commission Technical Report (Jun. 24, 2015). The authors thank Christopher Hoofnagle for these examples.

[264] Uber specifically prohibits reverse engineering of its app in the terms of service.

purposes of the Computer Fraud and Abuse Act.[265] Or the firm may advance the questionable argument that reverse engineering its algorithm constitutes a trade secret problem or runs afoul of the anti-circumvention provision of the Digital Millennium Copyright Act.[266] Regulators should support and publicize clear-cut exceptions to such rules and others to empower researchers to surface harms.[267]

It is also worth noting that knowing what questions to ask and assessing the information the agency gathers requires a measure of technical expertise. Happily, the FTC and other authorities (e.g., the Federal Communications Commission and state attorneys general) have been in the process of building up their technical capacities for some time.[268] This affordance, coupled with the underutilized investigatory powers of the FTC, positions some regulators to gain access to the information they need to police the digital marketplace and protect consumers.

Finally, the potential harms we explore in Part III are not limited to traditional consumer harms wherein a person purchasing a good or service is deceived or coerced. As far back as the Amway action, the FTC recognized that salespeople were consumers in some contexts and, indeed, the Uber complaint refers to drivers specifically as "entrepreneurial consumers."[269] But beyond new subjects of consumer protection law, regulators should be vigilant as to new means of disadvantaging. One example is the prospect that participants in the sharing economy may be unwittingly training their robotic replacements.[270] Another is the

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[265] Computer Fraud and Abuse Act, 18 U.S.C. § 1030 (2008). Cf. *United States v. Drew*, 259 F.R.D. 449, 464 (Cal. D. 2009) (discussing CFAA charge against defendant who impersonated another individual in violation of the terms of service).

[266] Digital Millennium Copyright Act, 17 U.S.C. § 1201 (1999). *See, e.g.*, First Amended Complaint & Demand for Jury Trial at 21–23, Facebook, Inc. v. Power Ventures, Inc., 844 F.3d 1058 (9th Cir. 2016), 2009 WL 3561632 (N.D. Cal. 2009) (alleging that Power Ventures' use of reverse engineering to employ Facebook messaging to send unsolicited commercial messages falsely attributed to "The Facebook Team" and other activities making Power Ventures' activities appear to be sponsored or endorsed by Facebook constituted a violation of California and federal trademark laws and the DMCA).

[267] This point applies much more broadly than the sharing economy, including for instance the detection of bias in decision making powered by artificial intelligence. E.g., Peter Stone et al., *Artificial Intelligence and Life in 2030, One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel*, Stanford University (Sep. 2016).

[268] *E.g.*, Federal Trade Commission, Office of Technology Research and Investigation, https://www.ftc.gov/about-ftc/bureaus-offices/bureau-consumer-protection/office-technology-research-investigation. *But see* HOOFNAGLE, *supra* note __, at 25 ("The FTC has always been a technology commission.").

[269] FTC Uber Complaint, *supra* note __, at *3 (labeling drivers as "entrepreneurial consumers who are transportation providers).

[270] Rosenblat & Hwang, *supra* note __, at 7.

recognition that A/B testing or feature integration in a context where people are using the platform for their livelihood has different effects and ramifications than in other contexts. Knowingly sending a driver on a longer route because it represents a blank spot in the relevant mapping software has costs both in terms of time and reputation.[271] Indeed, to the extent drivers are failing to gain traction in the context of employment class action lawsuits, they may increasingly turn to consumer protection law to vindicate some of the same interests.

2. Addressing harms

Presumably a deeper understanding of sharing economy practices would yield additional examples of problematic behavior, beyond false advertising as to potential earnings. Some of these could be as straightforwardly problematic as Volkswagen cheating on emissions tests. But delving into sharing economy techniques and practices would also yield plenty of innocuous behavior and many close calls. And it would not be feasible or wise of regulators to intervene every time a ride-hailer or provider were inconvenienced by a design decision, let alone shown a different price or product than another participant. The threat to innovation could be significant, which is why some authorities and theorists gravitate toward a harm standard for intervention in the first place.[272]

Thus, not only would contemporary regulators need to become more adept at discovering potential harms, they would need to develop effective and defensible means of addressing those harms. Again there exist at least two kinds of approaches to this problem: changing incentives to lessen the likelihood of exploitation, and finding a way to draw lines between the acceptable and illegitimate channeling of user behavior. The first approach, *incentives*, acknowledges that the range of potential abusive behavior is enormous and that it would be very difficult to draw lines between harmful, neutral, and beneficial practices. This approach recommends making structural changes to business models in an attempt to better align the incentives of firms and consumers. Thus, for example, it would recommend

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[271] *Id.*, at 4-5.

[272] *E.g.*, James C. Cooper & Joshua D. Wright, *The Mission Role of Economics in FTC Privacy Policy*, CAMBRIDGE HANDBOOK OF CONSUMER PRIVACY (Jules Polonetsky, Evan Selinger, & Omer Tene, eds.) (forthcoming 2017). Joshua Wright and James Cooper are both law professors who worked at the Federal Trade Commission as Commissioner and Acting Director of Policy Planning, respectively. *See also* Van Loo, *supra* note __, at 1355-59 (discussing harm).

requiring Facebook to offer a paid option in exchange for commitments not to mine the user's personal information for other purposes.[273] Or it would recommend establishing internal mechanisms to guard against abuse such as a review board for consumer research.[274] The idea is to find structural ways to help mitigate and minimize the circumstances under which the firm will be tempted to leverage its information and design advantages against consumers.

A second approach, *line-drawing*, bites the bullet and seeks to differentiate between legally tolerable and intolerable activities. In defense of this approach, it should be said that the law is replete with line-drawing. Courts must already assess when influence is "undue," what sorts of expectations are "reasonable," and so on.[275] In consumer protection law, agencies and courts already have to determine what sorts of representations rise to the level of a material deception. The law can analyze, for example, whether conveying the impression that a ride is nearby by displaying phantom cars in the user's vicinity constitutes deception or a form of visual puffery.[276]

Given the invisibility of decision-making processes to the consumer, many acts or practices may not involve deception per se. Rather, they involve using information about a consumer against them or introduce other material or structural disadvantages. An agency would have to determine whether individual practices rise to the level of unfairness, defined as substantial and unavoidable consumer harm. A standard proposed in various contexts is to look to vulnerability.[277] Thus, we might ask whether a hypothetical practice of charging people more for rides if their battery is low constitutes a form of individualized price gouging.[278] But not all unfair conduct can be said to target vulnerability. For example, the (again, hypothetical) prospect that a firm display ride requests too fast for the driver to accept in order to manage membership in an hourly guarantee incentive program, the obfuscation of time in order to reduce the likelihood the driver will collect a cancellation fee, would seem to rise to the level of unfairness

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[273] Calo, *supra* note __, at 1047-48.

[274] Ryan Calo, *Consumer Subject Review Boards: A Thought Experiment*, 66 STAN. L. REV. ONLINE 97 (2013). Facebook has adopted this approach. *See* Molly Jackman & Lauri Kanerva, *Evolving the IRB: Building Robust Review for Industry Research*, 72 WASH. & LEE L. REV. 442 (2016).

[275] Calo, *supra* note __, at 1024.

[276] WOODROW HARTZOG, PRIVACY'S BLUEPRINT (forthcoming Harv. U. Press 2017) (developing a concept of "abusive design"); David A. Hoffman, *The Best Puffery Article Ever*, 91 IOWA L. REV. 1395, 1400 (2006) (defining puffery).

[277] *E.g.*, Calo, *supra* note __, at 1031-34.

[278] *Id. See also* HARTZOG, *supra* note __, at __, citing Jeffrey Rachlinski, *Cognitive Errors, Individual Differences, and Paternalism*, 73 U. CHI. L. REV. 207, 208 (2006).

even against otherwise autonomous consumers.

A closely related approach might be to leverage privacy-centric concepts such as secondary use or access.[279] Under established, if not always enforced, privacy principles, firms are supposed to check with consumers before using their data in ways that go beyond the purpose for which it was selected.[280] There are several problems with this approach. First, a consumer can be surprised (or delighted) without the practice necessarily rising to the level of actionable harm. And second, firms already make broad and vague disclosures in privacy policies and terms of service covering a very wide range of potential uses.[281] Some also argue that restrictions on how already collected information is used represents a restraint on free speech.[282] Under established principles of fair information practice, consumers are supposed to be able to access information concerning them. Sharing economy firms could share detailed analytics with participants to permit them to better understand the decisions being made about them and to police against abusive practices.

Finally, we want to mention a hybrid approach between incentives and line-drawing, *fiduciaries*. Several scholars have recently emphasized the role of firms as custodians of data.[283] The idea is that consumers entrust information to intermediaries and this generates a fiduciary relationship, including a set of specific obligations.[284] This approach has several advantages. First, it imports a relatively mature area of law—an area that, like consumer protection law in general, is premised upon information and power asymmetries. The area of law constructs specific obligations such as loyalty, the contours of which are relatively well mined.[285] Second, the approach shares with incentive-based methods an avoidance of interfering with granular design decisions and gets around the standard First Amendment objections.[286]

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[279] See FEDERAL TRADE COMMISSION, PRIVACY ONLINE: FAIR INFORMATION PRACTICE IN THE ELECTRONIC MARKETPLACE: A FEDERAL TRADE COMMISSION REPORT CONGRESS (May 2000) (discussing the fair information practice principles).

[280] *Id.,* at 29-32.

[281] Ryan Calo, *Against Notice Skepticism in Privacy (And Elsewhere)*, 87 NOTRE DAME L. REV. 1027, 1050-55 (2012).

[282] Jane Bambauer, *Is Data Speech?*, 66 STAN. L. REV. 57 (2014).

[283] Jack M. Balkin, *Information Fiduciaries and the First Amendment*, 49 U.C. DAVIS L. REV. 1183 (2016); James Grimmelman, *Speech Engines*, 98 MINN. L. REV. 868, 904-05 (2014). *See also* Neil M. Richards & Woodrow Hartzog, *Taking Trust Seriously in Privacy Law*, 19 STAN. TECH. L. REV. 431 (2016) (arguing for a duty of loyalty for digital intermediaries); Neil M. Richards & Woodrow Hartzog, *Privacy's Trust Gap*, 126 YALE L.J. (forthcoming 2017) (same).

[284] Balkin, *supra* note __, at 1205-09.

[285] Richards & Hartzog, *Taking Trust Seriously in Privacy Law*, *supra* note __.

[286] Balkin, *supra* note __, at 1209-21.

None of these approaches dispense with the requirement that contemporary regulators monitor for consumer harms. The incentives approach requires validation: has the intervention sufficiently aligned the interests of the firm with those of the consumer to lead to tolerable levels of advantage taking? The line-drawing approach has to sort harmful from tolerable conduct. And the fiduciary approach requires a means by which to ensure fiduciary obligations are being met.

CONCLUSION

At one level, we should embrace the sharing economy as a novel form of technology-enabled commerce. Sharing does, in fact, possess many of the virtues its proponents suggest. But we must also be vigilant, lest the rhetoric of sharing and the allure of disruption limit the critique of the sharing economy to the handful of problems scholars and others have already identified. There exists within the sharing economy a deeper concern, grounded in the asymmetries of information. In *taking*. Sharing economy firms have the ability to monitor and channel the behavior of all participants, and may be using this capacity to everyone's detriment but their own.

Consumer protection law has been oddly silent in debates about the sharing economy. Very few sharing economy papers address themselves to consumer protection. The FTC's complaint against Uber could have been filed against any contemporary company, or against an innovator from thirty years ago. Consumer protection law, with its longtime emphasis on asymmetries of information and power, may still be our best means by which to domesticate the deepest problems of the sharing economy. But consumer protection law should evolve to address the new affordances of intermediaries like Uber and other digital platforms. There are a variety of potential configurations, but the contemporary regulator must first understand and then find a way to address the prospect of abuse. This is no easy set of tasks, but it is a crucial one.