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Discrimination by Design?

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ABSTRACT

Platform world is speeding the redesign of employment. Bricks-and-mortar firms once hired through narrow portals and then invested in the workers they hired, providing job security and predictable career ladders. Platform world flings the doors wide open to income-generating efforts, providing new opportunities but also offering security and predictable advancement to almost no one.

Other legal scholars have mined these same data for gender disparities; they have found disparities in the platform economy arising from customer biases and individual preferences, and manifested in men's and women's different experiences in everything from pricing plumbing services to fraud prevention. Neutral-appearing algorithms may then amplify the impact on wages and opportunities. Because the outcomes are not equal, other scholars argue that these disparities should be actionable. Accordingly, they suggest various ways to adapt existing laws to remedy gender disparities.

This Article is the first to develop an analysis of the multiple types of gender disparities in platform world. Rather than focus on the fact that disparities exist, this Article asks the question when—and even more provocatively, whether—they should matter.

First, the Article documents the various sources and forms of gender disparities, setting up the argument that no one legal approach fits. Second, while some of those disparities are already actionable under existing antidiscrimination laws, even antidiscrimination law today rarely provides a viable cause of action simply because the results produce statistical disparities. In platform world, it's not clear that the disparities are morally questionable, actionable under existing law, or appropriate subjects for regulation. The real issues in this new economy concern the lack of benefits,

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stability, and promotion opportunities. Antidiscrimination law can help those employed by platform companies, but not the gig workers who need health benefits and protection against harassment, nor the algorithms that need oversight. Consequently, existing antidiscrimination law is all but irrelevant except to address the most glaring discrepancies, and the real need is for a wholesale rethinking of the legal infrastructure necessary to realize the benefits of the platform economy for more than a few platform creators.

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INTRODUCTION

We increasingly live our lives in a digital world, buying textbooks, groceries, and travel on internet platforms, offering our own services as drivers or organizers or lawyers in the gig economy, and looking for professional connections and dating options on the Web. Computer programs oversee the transactions. They link parties in accordance with their preferences—whether for the cheapest e-reader or the right intimate partner.

The popular and legal assumption has been that these transactions are impersonal, autonomous, and efficient. Anyone can offer items for sale online; anyone can apply to become a ride-share driver. Customers rate based on quality of service. Computer algorithms implement whatever selection criteria coders write into their programs; the programs exercise no discretion, and thus they cannot discriminate. They can hardly act on the basis of bias, given that they are not conscious at all. Yet, the evidence is mounting that the new platform world reflects—and often exacerbates—gender disparities. The question this Article addresses is when do the disparities matter?

Consider the following examples.

On Platform Alpha, when gig workers bid for jobs, women offer lower prices than comparably qualified men. Customers choose the more expensive men for physical labor, such as moving furniture, and the less expensive women for other work, such as organizing clutter.

Platform Beta allows its users to customize message delivery. Customer C uses data gleaned from online profiles, browser usage, and social media usage to target employment ads to those most likely to demonstrate interest in such positions and to meet its selection criteria. As a result, ads for executive positions go overwhelmingly to men, and jobs in teaching and health care overwhelmingly to women.[1]

Platform Gamma, a ride-hailing company, creates a system that gives bonuses for picking up customers between 11 p.m. and 3 a.m., but not between 3 a.m. and 8 a.m. Male drivers disproportionately get the bonuses

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1. Facebook has been sued for allowing its advertisers to exclude women. *See* Noam Scheiber, *Facebook Accused of Allowing Bias Against Women in Job Ads*, N.Y. TIMES (Sept. 18, 2018), https://www.nytimes.com/2018/09/18/business/economy/facebook-job-ads.html [https://perma.cc/78CF-TX2Y]. In a settlement of multiple lawsuits, Facebook agreed to separate out ads having to do with housing, credit, and employment and disallowing advertisers to target by age, gender, or zip code for those categories. Janet Burns, *Facebook Agrees to Prevent Some Advertisers from Targeting by Race, Gender*, Age, FORBES (May 19, 2019), https://www.forbes.com/sites/janetwburns/2019/03/19/facebook-agrees-to-prevent-some-advertisers-from-targeting-by-race-gender-age/#2df47b14636f. Moreover, it is more expensive to advertise to women. *See* Lisa Spear, *The STEM Gender Gap: Science Job Ads Disproportionately Seen by Men*, NEWSWEEK (July 26, 2018), https://www.newsweek.com/stem-gender-gap-science-job-ads-are-mostly-seen-men-1044401 [https://perma.cc/J6XQ-R9HB].

because women have safety concerns about the type of customer likely to be seeking a ride during those hours. The ride-hailing company offers two explanations:

> a) The shortage of drivers is greater between 11 and 3 than between 3 and 8, and the algorithm automatically adjusts by awarding higher bonuses;
>
> b) Initially, both time periods had a shortage of drivers, but small bonuses corrected the problem between 3 and 8 while it took larger bonuses to adjust the supply between 11 and 3, and once the larger bonuses took hold, the percentage of men driving between 11 and 3 increased.

Platform Delta, which supplies home health aides, determines pricing based on the ratings of its employees. Women get higher ratings than men. An investigation reveals that:

> a) Women seem to be rated higher without differences in performance;
>
> b) Women on average were rated higher because the customers seemed to prefer women except when the patient was a male who required physical assistance in which case the men were rated higher.

Platform Zeta finds that its male employees are 10% more efficient than its female employees and thus get higher bonuses. An investigation indicates that:

> a) Women spend more time on average responding to customer complaints because they are more conscientious;
>
> b) Women spend more time on average responding to customer complaints because the customers ask them more questions and are less satisfied with women's responses, even though the company gives men and women the same scripts for resolving such complaints;
>
> c) Women spend more time on average responding to customer complaints because they care less about the bonuses.

Platform Epsilon hires software engineers to develop new products. It recruits both men and women, but, after five years, its engineering and management workforce is 80% male.

Gender disparities arise in each of these situations, and, to the extent that companies use algorithms that reflect existing practices, they have the potential to get worse. The source of those discrepancies varies: customer ratings, algorithms, and gig worker preferences. Few, and perhaps none, of

the examples above, give rise to actionable discrimination claims under existing law, and reasonable people might differ as to whether the gender disparities should be a source of concern, much less the subject of legal sanctions.

Despite the lack of agreement—or perhaps because of it—there is growing attention to the subject of disparities in the platform world.[2] Indeed, other scholars have suggested various ways to adapt existing laws to address these disparities in the platform world.[3] To date, however, no scholar has analyzed the full scope of these discrepancies and considered the ways that the disparities are embedded not just in platform world's algorithms, but in the structure of the information economy itself.

That is one goal of this Article; we are the first to examine systematically the different forms of gender disparities in the platform world that exist at the levels of the companies themselves, the workers, customers, and algorithms. Contrary to others, we question whether disparities equal discrimination—and whether that discrimination is more egregious in platform world. Even if some of the disparities in Platforms Alpha through Epsilon do result from discrimination that might be actionable under existing laws, it's not clear that they are necessarily worse than the disparities and discrimination in the traditional economy. Indeed, platform world may make it easier for women to gain a foothold in traditionally male-dominated fields such as plumbing; while the women may still be paid less, they often find it easier to be hired. And not all of the disparities are discrimination by the platform itself; many reflect the ways customer and worker preferences match up (although the platforms can take some actions to mitigate the impact of these biased preferences).

The more ambitious goal of this Article, then, is to reframe the discussion of gender disparities in the platform economy to consider how they relate to a substantive vision of equality. Employment discrimination law and cases are overwhelmingly focused on the question of whether the targeted practices are legally actionable discrimination. We think that this is the wrong question in analyzing these gender disparities. The real problems are in the structure

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2. *See, e.g.*, Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. L. REV. 671, 673–76 (2016); Naomi Schoenbaum, *Gender and the Sharing Economy*, 43 FORDHAM URB. L.J. 1023, 1024–27 (2016). *See generally* Nancy Leong & Aaron Belzer, *The New Public Accommodations: Race Discrimination in the Platform Economy*, 105 GEO. L.J. 1271 (2017) (exploring potential legal remedies for race discrimination against participants in the sharing economy, such as Airbnb hosts and Uber drivers).

We articulate the concept of "platform world" to include platform workers, platform practices, and platform companies; we are not just focused on workplace issues. This Article does focus on the producer side of the platform, but will discuss the consumer or buyer side in several places.

3. *E.g.*, Barocas & Selbst, *supra* note 2, at 727; Leong & Belzer, *supra* note 2, at 1317–22.

of the platform economy itself. Antidiscrimination law sought to open the door to the "good jobs" of the industrial economy to workers, such as women and minorities, who had largely been excluded.[4] The platform economy, in contrast, throws the doors wide open to anyone who wishes to enter. Ease of access—for those seeking to hire a grad student to write a term paper or for a stay-at-home mom looking for part-time employment—is the hallmark of the new economy. Moreover, this ease of access eliminates many of the sources of "privilege" in the traditional economy. "Ideal workers" who can work forty hours a week because of a spouse with primary responsibility for the children, for example, may enjoy less of an advantage over a worker who prefers to work twenty hours a week in bricks-and-mortar world. At the same time, however, the platform economy may depress income more generally, fail to provide the same degree of protection from lawbreaking or harassment, and offer fewer benefits such as health insurance or paid family leave. Accordingly, the Article analyzes these disparities in their larger legal context and shows that the way forward for regulating the platform economy does not always, or even necessarily, depend on traditional antidiscrimination law at all. Instead, solutions to gender disparities involve other kinds of laws, such as those relating to health insurance, wage and hour regulation, and parental benefits.[5]

The Article first explores the jurisprudential challenges to, and of, equality in the new platform world. Part II describes the promise of platform world for ending discrimination and the realities of existing disparities. Instead of reviewing cases, it analyzes the potential bases for any case—customer rating systems, data mining design, corporate structure, self-bidding, and other forms of predictive analytics—and it assesses whether disparities produced by these mechanisms are intentional and controllable through existing antidiscrimination law. Part III turns to the legal mechanisms that are available to combat discrimination outside of the platform, showing how they cannot address the various forms in which disparities appear in the different elements that compose platform world. Part IV draws on this analysis to address the difficulties in developing new laws to address gender disparities in the platform world. The Article shows that the disparities are not necessarily morally questionable, actionable under existing law, nor even

4. Naomi Cahn, June Carbone & Nancy Levit, *Gender and the Tournament: Reinventing Antidiscrimination Law in an Age of Inequality*, 96 TEX. L. REV. 425, 432–33 (2018).

5. We thus reject "cyber-exceptionalism," the concept that the internet world is sui generis. *See, e.g.*, Kevin Werbach, *The Song Remains the Same: What Cyberlaw Might Teach the Next Internet Economy*, 69 FLA. L. REV. 887, 954 (2017); Neil M. Richards & Jonathan H. King, *Three Paradoxes of Big Data*, 66 STAN. L. REV. ONLINE 41, 45 (2013), https://www.stanfordlawreview.org/online/privacy-and-big-data-three-paradoxes-of-big-data/ [https://perma.cc/W7V3-WKR4].

appropriate subjects for regulation. Instead, the critical regulatory issues in this new economy concern the lack of benefits, stability, and promotion opportunities. Consequently, existing antidiscrimination law is all but irrelevant except to address the most glaring discrepancies, and the real need is for a wholesale rethinking of the legal infrastructure necessary to realize the benefits of the platform economy for more than a few platform creators.

I. THE CHALLENGE OF EQUALITY

Platform world promises to be part of a large-scale redesign of the production of goods and services, producing a societal transformation on the order of the industrial revolution. Digitally based platforms like Uber, TaskRabbit, and Airbnb offer flexibility in hours and the ability to have arms-length, impersonal, and often anonymous interactions that match the personal preferences of buyers and sellers.[6] A dramatic expansion in data mining facilitates the creation of custom-tailored goods and services from individualized tee shirts to affordable divorce settlements. And innovations in gaming and entertainment may ultimately create not just new consoles, but entirely new virtual worlds. The challenge in this new economy is to consider what gender inequality means. If men and women have different preferences, and these different preferences skew income, wealth, and entertainment opportunities, the issue is whether an economy can and should be built on these individual preferences that will inevitably produce disparities. This section considers the underlying jurisprudential principles for developing a legal hierarchy of disparities.

The hierarchy begins with an assumption that some disparities are intrinsically offensive and should be treated as discrimination per se. Justice Scalia, for example, while expressing skepticism about other aspects of antidiscrimination law, thought *Brown v. Board of Education* was correctly decided in its rejection of de jure segregation.[7] *Brown*, in rejecting separate but equal school systems, acknowledged that racially identified schools were never truly equal in part because the process of categorization itself had consequences that went beyond the immediate impact of measurable school

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6. *E.g.*, Emily C. Atmore, Note, *Killing the Goose That Laid the Golden Egg: Outdated Employment Laws Are Destroying the Gig Economy*, 102 MINN. L. REV. 887, 888 (2017); Alex Kirven, Comment, *Whose Gig Is It Anyway? Technological Change, Workplace Control and Supervision, and Workers' Rights in the Gig Economy*, 89 U. COLO. L. REV. 249, 253 (2018); *see also* Keith Cunningham-Parmeter, *From Amazon to Uber: Defining Employment in the Modern Economy*, 96 B.U. L. REV. 1673, 1718 (2016) (noting that the autonomy may "be more illusory than first appearances suggest").

7. Brown v. Bd. of Educ., 347 U.S. 483, 494 (1954); *see* ANTONIN SCALIA & BRYAN A. GARNER, READING LAW: THE INTERPRETATION OF LEGAL TEXTS 87–88 (2012).

disparities. The artificial intelligence context, in a parallel fashion, risks creating racially and gender identified categories, with consequences, as the *Brown* Court said, "that may affect . . . hearts and minds"[8] of people who inhabit platform world. For example, an algorithm that sends ads for managerial positions exclusively to men and administrative assistant positions exclusively to women, based on past applications or hiring patterns, may not necessarily be designed with the intention of creating categories based on identity characteristics, but once it does so, it almost always involves intrinsically offensive practices that risk reinforcing the importance of gender in path dependent ways.

The second principle identifies the tradeoffs that underlie disparities that may not be offensive per se, that is, that appear neutral. Antidiscrimination law initially sought to create equal access to secure jobs and the pathways to promotion within them, regardless of gender and race. The second generation of Title VII then considered whether practices, such as written exams for fire-fighting positions, that were not intrinsically objectionable, in fact perpetuated racially identified workplaces. In platform world, where initial access is much less of a barrier, gender disparities may be tied to second order issues that are not explicitly gender-based but do have a disproportionate impact on women, such as safety, risk taking, family responsibilities, or response to competition. For example, one well-heralded study shows that male Uber drivers make more money than female Uber drivers, in part, because they drive faster.[9] The question of whether this should be permissible may not rest on the fact of gender differences per se. Instead, attention to gender differences should be coupled with questions about whether Uber's reward of faster driving causes more accidents.

The third identifies the degree to which the process of designing new platforms in itself imposes greater legal and moral responsibility for the results. Consider, for example, a bricks-and-mortar company that routinely finds that about 8% of the applicants for its high pressure, commission sales force jobs are men. Suppose that the company decides it no longer needs to employ its own sales employees but instead relies on a platform that recruits workers to sell the products for the company as independent contractors. The platform develops an algorithm based on studies finding that it gets the best results in soliciting sales agents by targeting those who browse certain hunting and video game sites. The platform ends up with an applicant pool and then a sales force that is 90% male. Is the responsibility of the newly

8. *Brown*, 347 U.S. at 494.

9. Cody Cook et al., *The Gender Earnings Gap in the Gig Economy: Evidence from over a Million Rideshare Drivers* 30–35 (Nat'l Bureau of Econ. Research, Working Paper No. 24732, 2018), http://www.nber.org/papers/w24732 [https://perma.cc/8836-P663].

created platform different in any way from the bricks-and-mortar company in that it is developing its recruitment techniques from scratch rather than relying on traditional industry practices?[10]

The algorithms reflect the choices of their creators.[11] The overarching and concomitant philosophical inquiry, then, asks whether equality principles in platform world are any different from those in bricks-and-mortar world, reflecting the now longstanding dichotomy in cyberlaw between two different approaches to regulation and exceptionalism. On the one hand, platform creators often claim that they are simply matching supplier and customer preferences, with no responsibility for the result. On the other hand, the design process involves trying something new, testing the results, and making adjustments. As a result, a creator who tests a design, discovers gendered effects, and chooses not to adjust the platform acts far more intentionally than the entrepreneur who establishes a new store that operates like every other store of the same nature. In these cases, where disparities arise *and* are perpetuated after they have become apparent, the result is not the product of "implicit bias" of which the actor may not have even been aware, but of conscious decision-making and purposeful endorsement of the outcome.[12] Customer ratings, for example, have become a distinctive aspect of many platforms, replacing expert or supervisor evaluations of workers. Yet, studies document racial and gender disparities that do not appear to correlate with differences in service.[13] Some but not all platforms creators design their platforms to blunt the impact of biased ratings.[14]

These principles raise the questions, then, of when and how platform creators take (and should take) gendered attributes into account. When Apple created a voice for its digital assistant, Siri, it quite consciously considered reactions to female rather than male voices in deciding on Siri's default

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10. Targeted job notices, ads, or postings leading to disparate impact would be at least potentially actionable in both worlds. *See, e.g.*, Joseph Fishkin, *The Anti-Bottleneck Principle in Employment Discrimination Law*, 91 WASH. U. L. REV. 1429, 1453 (2014); Julie Goldscheid, *Disparate Impact's Impact: The Gender Violence Lens*, 90 OR. L. REV. 33, 49 (2011).

11. "The architecture of cyberspace is neutral; it can enable or disable either kind of choice." Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 522 (1999).

12. *See* Michael Selmi, *Statistical Inequality and Intentional (Not Implicit) Discrimination*, 79 LAW & CONTEMP. PROBS. 199, 216, 220 (2016) (challenging the distinctions between implicit and explicit bias).

13. *See infra* text accompanying notes 57–105.

14. *See* Tobias Baer & Vishnu Kamalnath, *Controlling Machine-Learning Algorithms and Their Biases*, MCKINSEY & CO. (Nov. 2017), https://www.mckinsey.com/business-functions/risk/our-insights/controlling-machine-learning-algorithms-and-their-biases [https://perma.cc/N4ZR-HZJD].

tones.[15] Siri, however, is not likely to gain standing to sue any time soon. These guiding principles concerning responsibility for disparities frame this Article's approach to legal regulation of the platform world. This Article considers the extent to which platform designers have a legal obligation to take platform-external biases into account, and the degree to which the designers are responsible for other factors, such as employee manipulation, that may exacerbate the disparities.[16] In short, does the art of creation confer special obligations on the creators?

II. THE STRUCTURE OF THE PLATFORM WORLD

While the platform economy is transforming the workplace, creating new opportunities and businesses, its development is still grounded in the contemporary market-based industrial economy; it is both novel and familiar. To examine platform world, we first define what we mean by the term, and then turn to consider how the lack of regulation shapes existing practices.

A. Defining Platform World

"Platform world" is the term we use to describe all of the different actors involved in the increasing use of digital programs to match people with goods and services they wish to exchange. The term includes both labor and capital platforms,[17] and all of those who participate, as customers, sellers, workers, programmers, and funders.[18] The term includes a variety of different types of

15. Ned Potter, *Why Are Computer Voices Female? Ask Siri*, ABC NEWS (Oct. 25, 2011), https://abcnews.go.com/Technology/apples-siri-female-voice/story?id=14802733 [https://perma.cc/2BHF-QKV7].

16. *See* Stephanie Bornstein, *Reckless Discrimination*, 105 CALIF. L. REV. 1055, 1108 (2017) ("Actionable discrimination requires merely that an adverse employment action be 'because of' a protected class." (quoting 42 U.S.C. § 2000e-2(a)(1)–(2) (2012)).

17. "Labor platforms, such as Uber or TaskRabbit, and which are sometimes referred to as the 'gig economy,' connect customers with freelance or contingent workers who perform discrete tasks or projects. Capital platforms, such as Airbnb or eBay, connect customers with individuals who lease assets or sell goods peer-to-peer." DIANA FARRELL & FIONA GREIG, JPMORGAN CHASE & CO. INST., THE ONLINE PLATFORM ECONOMY: HAS GROWTH PEAKED? 3 (2016), https://www.jpmorganchase.com/corporate/institute/document/jpmc-institute-online-platform-econ-brief.pdf [https://perma.cc/9M44-9ZQF]; *see also* AARON SMITH, PEW RESEARCH CTR., GIG WORK, ONLINE SELLING AND HOME-SHARING 4–5 (Nov. 17, 2016), http://assets.pewresearch.org/wp-content/uploads/sites/14/2016/11/17161707/PI_2016.11.17_Gig-Workers_FINAL.pdf [https://perma.cc/3MMT-X25K].

18. Funders include traditional venture capital firms and crowd-sourced funding. *E.g.*, Nick Bunker, *What Problem Does Crowdfunding Venture Capital Solve?*, WASH. CTR. FOR EQUITABLE GROWTH (Nov. 10, 2015), https://equitablegrowth.org/what-problem-does-crowdfunding-

businesses as well.[19] It thus encompasses those who are employed by platform companies, and those who perform contingent work for such companies,[20] as well as those who buy, sell, or trade services and goods, and the algorithms through which participants are matched.

This terminology differs from other scholars, who typically focus on only one part of this new world. For example, some scholars concentrate on the platform workplace, labeling income-generating opportunities such as those on Uber or TaskRabbit as part of "the gig economy."[21] And, in fact, the platform economy does expand the possibilities for such freelance workers by creating more potential markets in which to sell their services as chauffeurs, programmers, home organizers, gardeners, dog walkers—or almost any other skill they possess. The problem with the word "gig," however, is that it is an amorphous concept that consists of anyone who engages in independent work or works outside of the traditional employer-employee relationship.[22] It thus includes not only those who participate in the

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venture-capital-solve/ [https://perma.cc/9MYC-ATZM]. A separate set of issues raised by the new age of technology, but not explored in this Article, centers on automation, another manifestation of the information highway. That too will have an impact on jobs. *See, e.g.*, MCKINSEY GLOB. INST., JOBS LOST, JOBS GAINED: WORKFORCE TRANSITIONS IN A TIME OF AUTOMATION 2 (2017), https://www.mckinsey.com/~/media/mckinsey/featured%20insights/future%20of%20organizations/what%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/mgi-jobs-lost-jobs-gained-report-december-6-2017.ashx [https://perma.cc/9X9B-DXJK].

19. There are platforms for services, goods, real estate, investment, and lending, among other categories. "Labor platforms, such as Uber or TaskRabbit, . . . connect customers with freelance or contingent workers who perform discrete tasks or projects." FARRELL & GREIG, *supra* note 17, at 3; *see also* SMITH, *supra* note 17, at 4–5. eBay and Airbnb could be seen as "sales" platforms. And there are other categories, as well, such as raising capital, through platforms like Kickstarter.

20. *See, e.g.*, Elisabeth Buchwald, *The Government Has No Idea How Many Gig Workers There Are, and That's a Problem*, MARKETWATCH (Jan. 9, 2019), https://www.marketwatch.com/story/the-government-has-no-idea-how-many-gig-workers-there-areheres-why-thats-a-problem-2018-07-18 [https://perma.cc/BTH9-CTUP].

21. *E.g.*, Marina Lao, *Workers in the "Gig" Economy: The Case for Extending the Antitrust Labor Exemption*, 51 U.C. DAVIS L. REV. 1543, 1549 (2018) ("The proliferation of the so-called 'sharing economy' platforms in the past decade has given rise to a still small, but rapidly increasing, gig economy workforce."); Orly Lobel, *The Gig Economy & the Future of Employment and Labor Law*, 51 U.S.F. L. REV. 51, 51 (2017).

22. There is no authoritative definition of the gig economy, although formulations center on people making a living doing a series of patchwork freelance or contract jobs or "gigs," rather than a full-time job. *See, e.g.*, Lawrence F. Katz & Alan B. Krueger, *The Rise and Nature of Alternative Work Arrangements in the United States, 1995–2015*, 15 (Nat'l Bureau of Econ. Research, Working Paper No. 22667, 2016), http://www.nber.org/papers/w22667 [https://perma.cc/BGQ5-G6RF]; Buchwald, *supra* note 20; *What Is a Gig Worker?*, GIG ECON. DATA HUB (last visited Dec. 23, 2018), https://www.gigeconomydata.org/basics/what-gig-worker

"sharing economy" and find work through internet platforms but also agricultural workers who find seasonal gigs.[23] Moreover, the "gig economy" does not necessarily include those who generate income by selling goods—or a combination of goods and services, such as those selling on Craigslist or eBay, or hosting on Airbnb.

The platform economy, as a broader term, allows for such transactions that might once have been available through retail stores or newspaper ads or flea markets.[24] "Platform economy" is thus a more useful term for this new sector of the economy, which includes not only those gig workers who find jobs through an internet platform, but also the companies that set up the internet-based possibilities for gig workers and, more broadly, that use the internet to conduct their businesses. For example, Facebook is both a corporation with thousands of employees and a social media system available to billions of users; similarly, Uber has a traditional bricks-and-mortar company, thousands of workers who are not employees, and millions of customers; and Google offers an increasing number of economic and non-economic transactions. In the process, these platforms may be blurring the line, if not completely dissolving the distinctions between employees and independent contractors, work and non-work, and social and commercial transactions.[25]

[https://perma.cc/2ZCH-Y6PD]; Elka Torpey & Andrew Hogan, *Working in a Gig Economy*, U.S. DEP'T LAB.: CAREER OUTLOOK (May 2016), https://www.bls.gov/careeroutlook/2016/article/what-is-the-gig-economy.htm [https://perma.cc/6S6T-FJAR]; Jane Wells, *Getting by in the "Gig Economy": Part-Time Jobs That Pay*, NBC NEWS (July 19, 2015, 4:47 AM), http://www.nbcnews.com/business/careers/getting-gig-economy-part-time-jobs-pay-n390211 [https://perma.cc/AP7S-NPSJ]. It thus includes Uber drivers and construction workers.

23. *See* Julie E. Cohen, *Law for the Platform Economy*, 51 U.C. DAVIS L. REV. 133, 136 (2017) ("Platforms—including online marketplaces, desktop and mobile computing environments, social networks, virtual labor exchanges, payment systems, trading systems, and many, many more—have become the sites of ever-increasing amounts of economic activity and also of ever-increasing amounts of social and cultural activity."). "Workers who provide services through online intermediaries, such as Uber or Task Rabbit, accounted for 0.5 percent of all workers in 2015. About twice as many workers selling goods or services directly to customers reported finding customers through offline intermediaries than through online intermediaries." Katz & Krueger, *supra* note 22, at 1. There are even professors of internet geography. *See* Annie Lowrey, *What the Gig Economy Looks Like Around the World*, ATLANTIC (Apr. 13, 2017), https://www.theatlantic.com/business/archive/2017/04/gig-economy-global/522954/ [https://perma.cc/7QM7-6SJX].

24. "[C]onsumers are the clear winner[ ] . . . ." Lao, *supra* note 21, at 1586. Platforms are not just the vehicles for economic transactions but for various forms of speech and ideas. *See* Kate Klonick, *The New Governors: The People, Rules, and Processes Governing Online Speech*, 131 HARV. L. REV. 1598, 1613 (2018). Platform companies create new markets; the artists on Etsy no longer rely on street traffic in their local community but on internet traffic worldwide for sales of their handcrafted products.

25. *See infra* note 217 and accompanying text (discussing the distinction between employees and independent contractors).

It is clear that the size of the platform world will increase, with ever greater numbers of people deriving income directly or indirectly from platform transactions. In addition, algorithms increasingly order these transactions, often with little human supervision as they perform more tasks in both the public and private sectors.[26] Even if these alternative ways of generating income supplement rather than replace traditional employment, they are likely to account for an increasing percentage of the overall economy. Today, however, most platform participants do not rely on such activities as their primary source of income.[27] Indeed, almost a quarter of platform workers are students.[28] The question for the future, however, is whether this form of gig jobs will increasingly define the parameters of employment relationships.

Using a more precise definition of platform world that includes the different actors who use digital programs thus enables a more precise understanding of the source and regulations of the numerous types of disparities that exist.

B. Evading Norms, Standards, and Oversight

Regulatory issues are complicated by the nature of the platform world itself. The emerging platforms are lightly regulated. Indeed, the core of the new system is its ability to match individual preferences in a decentralized fashion that circumvents the laws, large institutions, and customs that govern traditional businesses.[29] This both creates opportunities to move away from

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26. *E.g.*, Robert Brauneis & Ellen P. Goodman, *Algorithmic Transparency for the Smart City*, 20 YALE J.L. & TECH. 103, 103 (2018) (examining the public sector); Katz & Krueger, *supra* note 22, at 3; Gregory Ferenstein, *How the Gig Economy Could Help Close the Skills Gap*, QUARTZ (Apr. 16, 2018), https://work.qz.com/1253396/the-gig-economy-could-help-solve-our-job-training-problem/ [https://perma.cc/458R-VXRN]; *The Online Platform Economy: Who Earns the Most?*, JPMORGAN CHASE & CO. INST. (May 5, 2016), https://www.jpmorganchase.com/corporate/institute/insight-online-platform-econ-earnings.htm [https://perma.cc/ML8R-ZEGP]; Christine Schmidt, *Holding Algorithms and the People Behind Them Accountable*, NIEMANLAB (Mar. 21, 2018, 11:38 AM), http://www.niemanlab.org/2018/03/holding-algorithms-and-the-people-behind-them-accountable-is-still-tricky-but-doable/ [https://perma.cc/B5EL-SBUD].

27. MCKINSEY GLOB. INST., INDEPENDENT WORK: CHOICE, NECESSITY AND THE GIG ECONOMY, EXECUTIVE SUMMARY 8 (2016), https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Employment%20and%20Growth/Independent%20work%20Choice%20necessity%20and%20the%20gig%20economy/Independent-Work-Choice-necessity-and-the-gig-economy-Executive-Summary.ashx [https://perma.cc/E68H-NUR9] (about 30% of platform workers say that the gigs are their primary source of income).

28. SMITH, *supra* note 17, at 13.

29. Until the Court's 2018 decision in *South Dakota v. Wayfair*, e-retailers were not required to collect sales tax unless they had a physical presence in the state; e-commerce is now subject to the same sales tax regulation as bricks-and-mortar retailers. 138 S. Ct. 2080, 2081 (2018).

the gendered norms of the manufacturing age and different obstacles to full inclusion in the new economy.

New platform designers think of themselves as "disrupting" traditional industries. This disruption often bypasses the large institutions and regulatory apparatus of the administrative state. The result does not just circumvent legal and administrative oversight; it also eliminates many of the traditional institutions that establish norms, enforce standards, and provide accountability for compliance with laws and regulations.[30]

While informal services, like the neighborhood teenage lawn mower, always existed outside of the formal economy, the range of services in platform world means that an ever-increasing number of people can aspire to earn a living without a conventional employer. Indeed, some envision a time when conventional companies can use similar platforms to assign workers to tasks in more flexible and variable ways. Workers, in turn, will need only access to the Internet and something to sell to generate income. To facilitate these exchanges, the platforms themselves perform a variety of roles, such as helping consumers find services, translating foreign languages, and creating friendship and dating connections to others. Much of what these platforms do parallels traditional activities in the same way that Uber and Lyft parallel the operation of taxi companies. They nonetheless tend to differ from bricks-and-mortar companies in at least two important ways, ways that have benefits and disadvantages for the workers and the companies.

First, a major advantage of these innovations is that they are more flexible. At least some of this flexibility arises from eliminating the middle "man"—and the norms, standards, and accountability that come from institutionalized practices. If you call a taxi company, the taxi company owners typically secure licensing, supply cabs, hire workers, provide insurance, and oversee training, maintenance, and other operations.[31] If you call Uber, the driver who picks you up will typically be an independent contractor, who drives her own car, arranges her own insurance, and determines which rides she will provide. She may have never met an Uber executive or supervisor or even another Uber driver; customer interactions and evaluations are more likely to shape her expectations about appropriate job performance than company

30. To be sure, there are some piecemeal efforts. *See, e.g.*, Emma G. Fitzsimmons & William Neuman, *This Time It's Uber on the Defensive in Battle with New York*, N.Y. TIMES (July 27, 2018), https://www.nytimes.com/2018/07/27/nyregion/uber-nyc-cap-city-council.html [https://perma.cc/VE64-MRWK] (reporting that the City Council in New York City is considering a one-year cap on licenses granted to for-hire vehicles).

31. Jonra Springs, *Taxi Cab Company Structure*, CHRON, http://smallbusiness.chron.com/taxi-cab-company-structure-15714.html [https://perma.cc/C8Y3-V78V] (last visited Jan. 13, 2019).

mentoring.[32] Thus, a major difference in platform world is the reliance on independent contractors who work autonomously. They are not on the same factory floor or even in the same building; they rely on "the company" platform only for matching services. While the basic parameters of the job may be the same, the standards that develop over time from shared experiences, personal interactions, and institutionalized traditions do not exist.[33]

Gig workers praise their ability to be on the job when they want, on their own terms, to supplement other sources of income, to provide a way station on their way to other employment or education. Many Uber drivers could not become and would not want to be taxi drivers, in part because Uber gives greater opportunities to adjust their schedules to optimal demand time and make more money,[34] or to work when their children are in school or to fill in odd bits of time between other jobs or classes. These new workplaces provide an alternative to hierarchical employment structures because workers create their own employment. Algorithm users laud the utility of data mining and the related concept of machine learning to facilitate greater flexibility as the algorithms seamlessly match worker and employer, and buyer and seller

32. Ellen Huet, *Uber Skimps on Driver Training, Then Charges Drivers $65 for Basic Driver Skills Course*, FORBES (Oct. 8, 2014, 9:00 AM), https://www.forbes.com/sites/ellenhuet/2014/10/08/uber-skimps-on-driver-training-then-charges-drivers-65-for-basic-driver-skills-course/#2076f6a022b4 [https://perma.cc/MQ8E-TF5W] (examining the lack of training).

33. *See* Schoenbaum, *supra* note 2, at 1032–35. There are virtual communities; *e.g.*, Shu-Yi Oei & Diane M. Ring, *The Tax Lives of Uber Drivers: Evidence from Internet Discussion Forums*, 8 COLUM. J. TAX L. 56, 66–68 (2017) (studying discussions in three online groups).

34. *See* M. Keith Chen et al., *The Value of Flexible Work: Evidence from Uber Drivers* 11–13 (Nat'l Bureau of Econ. Research, Working Paper No. 23296, 2017), https://www.nber.org/papers/w23296.pdf [https://perma.cc/M47X-TXBH]; Jacob Passy, *What Uber Drivers Can Teach America About Work-Life Balance*, MARKETWATCH (Apr. 5, 2017, 6:50 AM), http://www.marketwatch.com/story/what-uber-drivers-can-teach-america-about-work-life-balance-2017-04-04?link=MW_latest_news [https://perma.cc/ZF5S-ZZ63].

preferences.[35] They also substitute continuously updated customer evaluations for formal supervision.[36]

Second, platform world is subject to relatively little government regulation, either with respect to workers or customers. By the height of the industrial era, the state had built protections for workers into the standardization of employment.[37] Federal and state legislation separates full-time workers, who enjoy greater benefits and protections, from part-time workers.[38] The government normalized the forty-hour work week, required higher overtime pay, and systematically regulated working conditions for these full-time workers. It subsidized benefits such as health care when provided by an employer, and offered antidiscrimination protection in the context of specific categories such as employment and education. Public oversight policed health and safety conditions at workplaces, hotels, restaurants, and other places, for the benefit of workers and patrons. Licensing requirements, such as those for taxi companies, established insurance requirements and accountability.

Few of these protections, for either workers or customers, apply to platform world. The workers in platform world are primarily independent contractors, and the Fair Labor Standards Act protections, health insurance tax subsidies, and other benefits and protections described above simply do not apply to them.[39]

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35. *See, e.g.*, Joe Dysart, *How Lawyers Are Mining the Information Mother Lode for Pricing, Practice Tips and Predictions*, A.B.A. J. (May 2013), http://www.abajournal.com/magazine/article/the_dawn_of_big_data [https://perma.cc/84PD-8TKJ]; Stephen Goldsmith, *Big Data, Analytics and a New Era of Efficiency in Government*, GOVERNING (May 22, 2013, 5:00 PM), http://www.governing.com/blogs/bfc/col-big-data-analytics-government-efficiency.html [https://perma.cc/H3Z2-9S69]; Nathan Sinnott, *How Machine Learning Is Changing the World—and Your Everyday Life*, ENTREPRENEUR (Apr. 25, 2018), https://www.entrepreneur.com/article/312016?utm_campaign=EDailyTips&utm_source=MorningBrew&utm_medium=Newslettter [https://perma.cc/P2C7-LAMB].

36. *See, e.g.*, Julia Sklar, *Hired and Fired by Algorithm*, MIT TECH. REV. (Sept. 28, 2015), https://www.technologyreview.com/s/541576/hired-and-fired-by-algorithm/ [https://perma.cc/XP6V-VRT7].

37. *See* June Carbone & Nancy Levit, *The Death of the Firm*, 101 MINN. L. REV. 963, 992 (2017); Senator Elizabeth Warren, Remarks at the New America Annual Conference: Strengthening the Basic Bargain for Workers in the Modern Economy, (May 19, 2016), https://www.warren.senate.gov/files/documents/2016-5-19_Warren_New_America_Remarks.pdf [https://perma.cc/D7T4-W7ZN].

38. Part-time workers typically receive lower wages and fewer benefits (such as health insurance or pensions) than full-time workers do. Nantiya Ruan, *Corporate Masters & Low-Wage Servants: The Social Control of Workers in Poverty*, 24 WASH. & LEE J. C.R. & SOC. JUST. 103, 137 (2017).

39. 29 U.S.C. § 203(e)(1) (2018); *see, e.g.*, Saleem v. Corp. Transp. Grp., Ltd., 854 F.3d 131, 134 (2d Cir. 2017); *see also* Yochai Benkler, *Challenges of the Sharing Economy*, YOUTUBE

Platform economy creators thus have a competitive advantage over traditional employers because they bypass these regulations or pass on the costs of compliance to individual workers. Uber, for example, does not need to purchase taxi medallions, it requires its drivers to obtain their own insurance, and it provides no paid sick leave; Airbnb claims exemption from hotel regulations.[40] And platform-based enterprises can easily frame their operations to employ relatively few full-time workers of any kind. Accordingly, the laws that address gender disparities, whether directly through antidiscrimination provisions or indirectly by standardizing wages, benefits, or working conditions for most employees, simply do not apply.

Ultimately, data itself has become the market currency—replacing more consciously created institutional and social practices.[41] Omnipresent online ads target customers based on browsing behavior, t-shirt companies use Facebook to anticipate birthday and anniversary celebrations (or political preferences), and employers can access a vast temporary labor force by tapping into past employment or work preferences. The more that such programs match their participants in terms of existing patterns or preferences, however, the more that they are likely to reinforce gendered traits.

III. GENDER DISPARITIES

The existence and meaning of gender disparities in platform world provide the uncertainties at the core of this Article. For one thing, precise numbers about work in the platform economy are difficult to find, and the data that do exist are often inconsistent.[42] It appears that women are somewhat more likely than men to be workers on the labor platform, and to find that their gig income is essential or important to their ability to support themselves and their

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(Feb. 24, 2015), https://www.youtube.com/watch?v=mBF-GFDaCpE [https://perma.cc/37KV-RQ3H] (commenting at a World Economic Forum conference that the collaborative economy lets businesses circumvent their social obligations by transferring all of the risks—such as legal actions—onto outside agents). This unprecedented externalization of risks eliminates the responsibility and protection that businesses usually provide to their employees. Shellie Karabell, *Sharing Economy*: *Nice, but Does It Create Real Jobs?*, FORBES (Jan. 29, 2017, 5:43 PM), https://www.forbes.com/sites/shelliekarabell/2017/01/29/sharing-economy-nice-but-does-it-create-real-jobs/#5d36185238fc [https://perma.cc/8ZF4-8LBK].

40. Jeremy Quittner, *Airbnb and Discrimination: Why It's All So Confusing*, FORTUNE (June 23, 2016), http://fortune.com/2016/06/23/airbnb-discrimination-laws/ [https://perma.cc/7F9H-D8CE].

41. VIKTOR MAYER-SCHÖNBERGER & THOMAS RAMGE, REINVENTING CAPITALISM IN THE AGE OF BIG DATA 13–14 (2018).

42. *E.g.*, Buchwald, *supra* note 20.

families.[43] At the same time, female customers seem warier of internet platforms such as eBay or crowdfunded investments, and often take more precautions when they do participate.[44]

The preliminary studies on those who derive income from platform world seem to confirm the fears that gender disparities exist, and that even though the platform economy is new, the disparities that exist in it based on gender, race, or the combination of the two[45] are not—although they may be camouflaged by the flashiness of the new technology. Indeed, the nature of the technology itself gives rise to concerns about the influence of gender. At their most basic level, what platforms do is to match preferences: existing preferences whether gender neutral, gender biased, or simply a reflection of society's existing gender attitudes. Moreover, precisely because platforms eliminate many of the professional supervisors who judge worker performance in other contexts, they are that much more dependent on customer reviews, which many studies show to contain pervasive biases. And to make matters worse, the use of algorithms almost seems designed to build in the gendered patterns of existing society; machine learning, after all, tapped to scan and sort resumes, can easily conclude that Allison might be better for a nursery school teaching position than Ethan.[46]

The resulting disparities may not, however, constitute discrimination. Gender disparities may have multiple causes, and while the algorithms that drive platforms do sometimes incorporate bias, programmers have also

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43. Julia Carpenter, *The Reason Women Are Working More Side Hustles*, CNN: MONEY (Aug. 22, 2017, 11:04 AM), https://money.cnn.com/2017/08/03/pf/women-side-hustles/index.html [https://perma.cc/W5QH-JDAF] (citing a survey by Bankrate revealing that "69% of women say they use the extra money from a side hustle to help pay for living expenses, compared to just 42% of men").

44. *See infra* note 73 and accompanying text. *See generally* Rachel Croson & Uri Gneezy, *Gender Differences in Preferences*, 47 J. ECON. LITERATURE 448, 454 (2009).

45. Will Knight, *Is the Gig Economy Rigged?*, MIT TECH. REV. (Nov. 17, 2016), https://www.technologyreview.com/s/602832/is-the-gig-economy-rigged/ [https://perma.cc/2U44-6LMM].

46. Matthew Hutson, *Even Artificial Intelligence Can Acquire Biases Against Race and Gender*, SCIENCE (Apr. 13, 2017, 2:00 PM), http://www.sciencemag.org/news/2017/04/even-artificial-intelligence-can-acquire-biases-against-race-and-gender [https://perma.cc/7GKM-L86T] (explaining a computer science web embedding association test—the AI version of the implicit association test—in which computers "learn" words based on the context in which they appear, and noting that the study by scientists at Bath in the United Kingdom and Princeton "found that the embeddings for names like 'Brett' and 'Allison' were more similar to those for positive words including love and laughter, and those for names like 'Alonzo' and 'Shaniqua' were more similar to negative words like 'cancer' and 'failure.' To the computer, bias was baked into the words.").

developed mechanisms to counter it.[47] More fundamentally, not all of the studies that show disparities convincingly show that discrimination is the reason for the disparities.

The subparts of this section address the major sources of perceived disparities, assess the quality of the empirical support for these disparities, consider alternative explanations, and evaluate sources of concern other than the disparities themselves. The sources of gender disparities in the platform world often do not result from either the deliberate actions of platform designers to exclude women, or even necessarily from what are thought of as "implicit biases" in other contexts. Most online platforms are relatively open to those who wish to access them. Instead, the disparities reflect four factors: first, gendered differences in traits and preferences; second, women's greater vulnerability to male aggression and rule-breaking; third, women's greater assumption of responsibility for care work that benefits others; and fourth, existing patterns in professional settings. In each case, the impact of the platform economy on women involves the question of how platform design increases or decreases the role of these factors. This section will pick up these factors in turn as a way of showing the limits of traditional antidiscrimination law.

A. Painting Nurseries Pink and Executive Suites Blue: Gendered Differences in Traits and Preferences

This section considers the role of gendered patterns in the structure of the platform economy in terms of "worries" and "realities."[48] The worries stem from uncritical and (in the case of algorithms) unexamined use of gender traits and stereotypes. This section then suggests a more complex reality: one that depends not on the existence of such traits and preferences per se, but on how they are used. It is not only that the stereotypes of bricks-and-mortar

47. Jackie Snow, *New Research Aims to Solve the Problem of AI Bias in "Black Box" Algorithms*, MIT TECH. REV. (Nov. 7, 2017), https://www.technologyreview.com/s/609338/new-research-aims-to-solve-the-problem-of-ai-bias-in-black-box-algorithms/ [https://perma.cc/4ZYD-GJMZ].

48. As discussed *infra* notes 70–71, 187–88 and accompanying text, these traits are stereotypes that are often based on empirically-documented data, albeit not necessarily biologically-determined differences. *See* Mary Anne C. Case, *Disaggregating Gender from Sex and Sexual Orientation: The Effeminate Man in the Law and Feminist Jurisprudence*, 105 YALE L.J. 1, 41 (1995); *see also* Diana Burgess & Eugene Borgida, *Who Women Are, Who Women Should Be: Descriptive and Prescriptive Gender Stereotyping in Sex Discrimination*, 5 PSYCHOL. PUB. POL'Y & L. 665 (1999); Zachary R. Herz, Note, Price*'s Progress: Sex Stereotyping and Its Potential for Antidiscrimination Law*, 124 YALE L.J. 396 (2014).

world are encoded in algorithms, or that artificial intelligence learns and builds on these gendered patterns; it is that these preferences are cloaked and then multiplied by an entity that is seemingly bias-free, a machine.[49] The section examines ads and algorithms, customers' reviews, and other factors in such terms.

1. Algorithms and Ads: Preferences Multiplied?

Machine-based algorithms have become a useful means for everything from shoving email into a spam folder to analyzing the side effects of prescription drugs, to translating Turkish into English, to determining creditworthiness, to managing Uber drivers.[50] Machine learning involves computerized analysis to find patterns in existing data, and then developing an algorithm that will predict comparable patterns in new data; that is, the algorithms are produced by analyzing data to find the statistical relationships that result in useful predictions. These algorithms rely on customer ratings, stated job preferences and times for work, past browsing history, speed of driving, rate of sales or other data to establish their baselines.

The machines themselves have no preexisting animus, of course. Nor may the programmers. Yet, they design algorithms that "learn" from existing societal patterns.[51] Such algorithms, on the basis of disparities in the raw data, may conclude that the instructors who teach second grade are women and those who teach engineers are men, coding these positions in gendered terms on the basis of existing patterns.[52] Google Translate, for example, relies on language patterns to "learn" the meanings of different words.[53] These patterns

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49. Min Kyung Lee et al., *Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers*, *in* PROCEEDINGS OF THE 33RD ANNUAL ACM CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS 1603 (CHI 2015), https://www.cs.cmu.edu/~mklee/materials/Publication/2015-CHI_algorithmic_management.pdf [https://perma.cc/29N6-V8S8].

50. Barocas & Selbst, *supra* note 2, at 673; Lee et al., *supra* note 49.

51. Hannah Devlin, *AI Programs Reveal Racial and Gender Biases, Research Reveals*, GUARDIAN (Apr. 13, 2017), https://www.theguardian.com/technology/2017/apr/13/ai-programs-exhibit-racist-and-sexist-biases-research-reveals [https://perma.cc/G3UH-PNQS].

52. *See* Brauneis & Goodman, *supra* note 26, at 123–26; David Lehr & Paul Ohm, *Playing with the Data: What Legal Scholars Should Learn About Machine Learning*, 51 U.C. DAVIS L. REV. 653, 703–04 (2017) (identifying four overlapping factors: disadvantageously defined outcome variables; data collected in a non-representative manner; data with preexisting human biases baked in; and a particular set of input variables more predictive for one group than another).

53. Aylin Caliskan, Joanna J. Bryson & Arvind Narayanan, *Semantics Derived Automatically from Language Corpora Contain Human-like Biases*, 356 SCIENCE 183, 183 (2017), http://science.sciencemag.org/content/356/6334/183 [https://perma.cc/S79L-9XWY]; Jack Morse, *Google Translate Might Have a Gender Problem*, MASHABLE (Nov. 30, 2017),

may cause certain groups to be represented in distinct culturally or gender-specific contexts.[54] Consequently, an existing semantic bias is folded into the Translate algorithm; even though, for example, Turkish has only a gender-neutral pronoun, the program translates Turkish to English in a manner that reinforces gendered occupational patterns (women are cooks, men are engineers).[55] Over time, these effects are cumulative as they skew applications, hiring patterns, and performance ratings in ways that may not be apparent at the time the algorithms are created.[56]

a. The Appearance of Disparities

One of the most pervasive use of gendered algorithms involves internet ads.[57] Go on your computer and look at shoe sales. For the next several days, shoe ads may pop up on your computer, typically tracking the style and gender of the shoes you searched for. Does anyone care—beyond the annoyance and distraction produced by the ads? Probably not. Everyone buys shoes and the fit and styles for men and women differ. Besides, if a woman searches for men's shoes, she will get ads coded male. The algorithm does not care who the buyer is; it is only trying to determine what she wants.

Of greater concern is ads for high paying or powerful positions. These ads can easily be sources of bias, whether designed by algorithms or Madison Avenue executives. Indeed, researchers have developed lists of words associated with male and female stereotypes.[58] The stereotypically male words include: competitive, confident, decisive, leader, self-sufficient; the female words include: committed, dependable, empathetic, nurturing,

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https://mashable.com/2017/11/30/google-translate-sexism/#YF9lqmcoZsqH [https://perma.cc/FPG5-HN3Q].

54. *See* Reuben Binns, *Fairness in Machine Learning: Lessons from Political Philosophy*, 81 PROC. MACHINE LEARNING RES. 1, 9 (2018), http://proceedings.mlr.press/v81/binns18a/binns18a.pdf [https://perma.cc/T23U-RFA7] (defining "representational fairness" as the means through which "certain groups are represented in digital cultural artefacts, such as natural language classifiers").

55. Morse, *supra* note 53.

56. Dina Bass & Ellen Huet, *Researchers Combat Gender and Racial Bias in Artificial Intelligence*, BLOOMBERG (Dec. 4, 2017, 5:45 AM), https://www.bloomberg.com/news/articles/2017-12-04/researchers-combat-gender-and-racial-bias-in-artificial-intelligence [https://perma.cc/G937-BBTR]; Bettina Büchel, *Artificial Intelligence Could Reinforce Society's Gender Equality Problems*, CONVERSATION (Mar. 1, 2018, 11:00 AM), http://theconversation.com/artificial-intelligence-could-reinforce-societys-gender-equality-problems-92631 [https://perma.cc/N353-ZVMD].

57. *See* William K. Darley & Robert E. Smith, *Gender Differences in Information Processing Strategies: An Empirical Test of the Selectivity Model in Advertising Response*, 24 J. ADVERT. 41, 41–43 (1995).

58. Danielle Gaucher et al., *Evidence That Gendered Wording in Job Advertisements Exists and Sustains Gender Inequality*, 101 J. PERSONALITY & SOC. PSYCHOL. 109, 109–18 (2011).

responsive, understanding—sadly, not the qualities search firms and human resource departments link with the highest paying positions.[59] The researchers find further that job postings for male-dominated occupations typically contain more stereotypically masculine words than jobs for female-dominated occupations, but female-dominated occupations use both types of descriptions.[60] They also find that the greater the association of a position with stereotypically male attributes, the less favorably women rate the position, though the use of stereotypically feminine terms has much less of an impact on men's rating of the jobs.[61]

The effects of these descriptions on applicant pools can be dramatic and, indeed, use of such terms can double the gender gap in applications.[62] For one of the most highly publicized examples, Google allowed researchers access to its demographic metrics, and the researchers examined two different types of ads. They found that applying the selection metrics might mean that women would become less likely to see ads for higher-paying executive jobs.[63] The study also looked at ads for a career coaching service that offered to help prepare applicants to land positions paying over $200,000 per year.[64] Although the results were not statistically significant because of the small sample size, these ads produced the most startling results because the Google algorithm showed them *only* to males.[65] The 2015 study, which claimed to be the first of its kind documenting bias in this type of activity, seemed to show the risks of the new technology.

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59. *Id.*

60. *Id.* at 114–15 (concluding the "lack of an effect for feminine wording suggests that gendered wording . . . is not simply the result of a perceptual process whereby people make inferences about the traits required for jobs based on roles traditionally held by men and women").

61. *Id.* at 117. The identification of a product, however, such as Virginia Slims, with women does reduce male interest.

62. *See, e.g.*, Jeffrey A. Flory, Andreas Leibbrandt & John A. List, *Do Competitive Workplaces Deter Female Workers? A Large-Scale Natural Field Experiment on Job Entry Decisions*, 82 REV. ECON. STUD. 122, 124 (2014) (indicating the gender gap in applications more than doubles when a large fraction of the wage (50%) depends on relative performance, reflecting greater female than male aversion to such environments).

63. Amit Datta et al., *Automated Experiments on Ad Privacy Settings*, 2015 PROC. ON PRIVACY ENHANCING TECHNOLOGIES 92, 102, http://www.andrew.cmu.edu/user/danupam/dtd-pets15.pdf [https://perma.cc/UGH8-EP6R] (using machine learning to simulate the impact of demographic factors such as gender on Google ad selection).

64. *See id.*

65. *Id.*; Garett Sloane, *Online Ads for High-Paying Jobs Are Targeting Men More Than Women*, ADWEEK (July 7, 2015), https://www.adweek.com/digital/seemingly-sexist-ad-targeting-offers-more-men-women-high-paying-executive-jobs-165782/ [https://perma.cc/QS4M-JKLT].

b. The Complex Sources of Gender Disparities

The practical realities are more complicated. First, with or without algorithms, many companies use ads that skew their applicant pools.[66] In such suits, they may not face legal liability for using words (such as "ninja" and "rockstar"), but the impact is similar to that at the core of the second-generation Title VII lawsuits.

With respect to employment, companies hiring high-paid executives are subject to antidiscrimination laws. It is standard practice for the human relations departments in such companies to seek to produce a diverse applicant pool, particularly if the existing executive labor force is skewed. Companies that find that Google ads produce a less diverse applicant pool than other sources can be expected to rely on them less—at least if the companies value diversity or fear the implications of possible allegations of discrimination. Moreover, even under existing law, continued reliance on a source of applicants known to produce fewer women or minority applicants should be viewed as evidence of discriminatory intent, particularly where the company starts with substantial underrepresentation of women or other protected groups.[67] In this sense, use of an algorithm that produces ads targeting men is not fundamentally different from any other recruitment method that skews the applicant pool in comparison with alternative recruitment techniques.

Second, the Google study itself involved a simulation, not a description of the pattern of actual dissemination of particular ads. It thus does not show discrimination actually occurring, but simply how it *might* occur.

On the other hand, the FTC has investigated some executive coaching firms as potential frauds.[68] Even those who recommend such services note that the profession is unregulated and unlicensed, unlike psychological counseling or other services, and while not "as prone to hucksters as life

66. *See, e.g.*, Press Release, U.S. Equal Emp't Opportunity Comm'n, Target Corporation to Pay $2.8 Million to Resolve EEOC Discrimination Finding (Aug. 24, 2015), https://www.eeoc.gov/eeoc/newsroom/release/8-24-15.cfm [https://perma.cc/69F8-6327]; Stacy Jones & Grace Donnelly, *Walmart's New Jobs Approach Could Be Undermined by Gender Bias*, FORTUNE (Apr. 4, 2017), http://fortune.com/2017/04/04/walmart-jobs-gender-bias/ [https://perma.cc/Q5S7-QBEG] ("After collecting and analyzing 4,400 U.S.-based Walmart job postings, *Fortune* found that the language in 51% of job descriptions is more likely to appeal to men than women. That imbalance tips even more as openings travel up the corporate ladder, where 53% of manager positions and 84% of the director-level job descriptions skew male.").

67. This is why "word of mouth" recruiting that impermissibly replicates the racial or gendered composition of a workforce is actionable discrimination under disparate impact theory. Thomas v. Wash. Cty. Sch. Bd., 915 F.2d 922, 925 (4th Cir. 1990).

68. Lesley Fair, *FTC Blows the Whistle on Business Coaching Program*, FED. TRADE COMM'N (June 26, 2017, 11:28 AM), https://www.ftc.gov/news-events/blogs/business-blog/2017/06/ftc-blows-whistle-business-coaching-program [https://perma.cc/YB3S-UUDJ].

coaching is, . . . there's still the potential for exploitation, harm, or simply a waste of time and money."[69]

These Internet ads thus represent a classic example of the kinds of circumstances where gender disparities can be expected to be rife and may be exploited to the benefit of those running the ads. Indeed, such ads appear designed to pique stereotypically male interest and discourage those with stereotypically female traits from seeking such services. By emphasizing salary to the exclusion of other characteristics, they appeal to greed and hubris.[70] Because the services are of uncertain value and the coaches feel pressure to recruit, they involve risk[71]—a classic subject of gender stereotyping. They also offer the lure of high rewards—reputable coaching can in fact increase the ability to land and keep a high paying job, particularly for those who need help breaking into the right networks or honing interviewing skills. And the ability to advertise online increases the ability of new coaches to enter the field and the difficulty for consumers to tell the differences between the effective professionals and those winging it.[72] In short, the promotion of this type of coaching service replicates the factors researchers find in gender differences on the web more generally. Women are more likely to perceive the web as a dangerous place, warier that they will be the victim of frauds[73] or hucksterism, less likely (with good reason) to see themselves as the beneficiaries of the upsides from services such as this type of coaching, and thus less likely to shell out substantial sums for the hope of landing an advantage in securing a high paying job.

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69. Katherine Reynolds Lewis, *Career Coaches: When Are They Worth Their Salt?*, FORTUNE (Nov. 6, 2012), http://fortune.com/2012/11/06/career-coaches-when-are-they-worth-their-salt/ [https://perma.cc/DZ8W-9WUV].

70. Indeed, women are much more reluctant to apply for jobs unless they meet all the eligibility criteria for the position: a study at Hewlett Packard showed that "[m]en apply for a job when they meet only 60% of the qualifications, but women apply only if they meet 100% of them." Tara Sophia Mohr, *Why Women Don't Apply for Jobs Unless They're 100% Qualified*, HARV. BUS. REV. (Aug. 25, 2014), https://hbr.org/2014/08/why-women-dont-apply-for-jobs-unless-theyre-100-qualified [https://perma.cc/DD8M-6YY8].

71. Indeed, the standard advice is to "[b]e wary of someone who tries to manipulate or use mind games, like asking for a $20,000 up-front commitment and when you demur, accusing you of not being committed to the process." Lewis, *supra* note 69.

72. *See id.* (advising that signs of a coach's reputability involve being "part of a community of coaches" and having a reputation to uphold—factors that are easier to determine through personal referrals than online ads); *see also* Russ Alan Prince, *Are Business Coaches Worth the Time and Money?*, FORBES (June 9, 2015), https://www.forbes.com/sites/russalanprince/2015/06/09/are-business-coaches-worth-the-time-and-money/#257de8a15cfe [https://perma.cc/ZRY5-TYGU] (noting the difficulty in determining the value of such coaching).

73. Fraud goes far beyond customer reviews, although the gendered impact is difficult to assess. *See* Laura Stevens, *On Amazon, Fake Products Plague Smaller Brands*, WALL ST. J. (July 19, 2018), https://www.wsj.com/articles/on-amazon-fake-products-plague-smaller-brands-1532001601?mod=hp_lead_pos4 [https://perma.cc/DF8T-9ZT2].

Even if Google's algorithm is the source of gender disparities in targeting customers, existing antidiscrimination law does not address such ads that simply embody gendered stereotypes. Indeed, the law banning sex discrimination arguably would not apply to ads for a coaching service rather than for the position itself.[74] In the United States, the law simply does not intervene when advertisements reinforce discriminatory cultural messages.[75] Legally, generating interest in such services is no different from selling chain saws, which are also subject to culturally stereotyped ads that typically display pictures of brawny construction workers, suggesting the identification of power tools with a form of employment that is 98% male.[76]

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74. It is not like housing, subprime lending, or job ads—where there are specific statutory protections. *See, e.g.*, Chi. Lawyers' Comm. for Civil Rights Under Law, Inc. v. Craigslist, Inc., 519 F.3d 666, 672 (7th Cir. 2008) (In a lawsuit against an online service provider for an ad that allegedly violated the Fair Housing Act, the court held "[i]f craigslist 'causes' the discriminatory notices, then so do phone companies and courier services . . . yet no one could think that Microsoft and Dell are liable for 'causing' discriminatory advertisements. . . . [The plaintiff] cannot sue the messenger just because the message reveals a third party's plan to engage in unlawful discrimination."). These findings replicate what law professor John Banzhaf found in the 1980s about gender-based pricing for dry cleaning: a male researcher picked up a gender neutral article of clothing from a dry cleaners, such as a button down shirt; he walked out of the store, crumpled up the shirt, handed it off to a female colleague who took it in to the same store for dry cleaning and later had to pay up to a 200% mark-up. Kara Swisher, *Consummate Consumer; Pressing Charges—Students Fight Discriminatory Fees*, WASH. POST, June 29, 1989, at D5, *as excerpted at* PROFESSOR JOHN F. BANZHAF III, http://banzhaf.net/docs/shirts.html [https://perma.cc/P4YD-ZF9G] (last visited Feb. 16, 2019).

75. While some companies voluntarily pull stereotypic ads in response to customer complaints, these are the exception and not the norm. *See, e.g.*, Holning Lau, *Shaping Expectations About Dads as Caregivers: Toward an Ecological Approach*, 45 HOFSTRA L. REV. 183, 192 (2016) ("In 2012, Huggies diapers discontinued a television advertisement that portrayed fathers as too incompetent to change diapers."); *see also* Marie-Helen Maras & Lauren R. Shapiro, *Child Sex Dolls and Robots: More than Just an Uncanny Valley*, 21 J. INTERNET L. 3, 17 n.12 (2017) ("Both France and the United Kingdom have specific guidelines for ads to prevent 'sexist and discriminatory ads' that promote gender stereotypes, sexually objectify women, or promote an unhealthy body image." (quoting *Britain to Ban All Ads That Objectify Women or Promote Gender Stereotypes*, WOMEN WORLD (July 19, 2017), https://womenintheworld.com/2017/07/19/britain-to-ban-all-advertisements-that-objectify-women-or-promote-gender-stereotypes/ [https://perma.cc/9AY9-CJ79])).

76. *See Gender's Role in Purchases: I Don't Mean to Sound Sexist, but . . .*, STEVENSON CO.: TRAQLINE BLOG (Feb. 1, 2016), https://stevensoncompany.com/genders-role-in-purchases-i-dont-mean-to-sound-sexist-but/ [https://perma.cc/V8KZ-A6S4] (men buy 68% of power tools in the United States); *Statistics of Women in Construction*, NAT'L ASS'N WOMEN CONSTRUCTION, https://www.nawic.org/nawic/statistics.asp [https://perma.cc/59UD-6NVT] (last visited Jan. 26, 2019) (women constitute under 2% of construction workers). When ad executives seek to sell power tools to women, however, they know how to do it. They put a picture of a smiling woman in the ad, with the words "Santa Claus" in the background. *Cf.* Till Speicher et al., *Potential for Discrimination in Online Targeted Advertising* 81 PROC. MACHINE LEARNING RES., 2018, http://proceedings.mlr.press/v81/speicher18a/speicher18a.pdf (describing different strategies advertisers use to target consumers based on demographics, behavior, or interests).

c. Takeaways

Does—or should—the existence of gender disparities in targeting customers constitute legally actionable discrimination? If the coaching services in fact increase gender disparities in access to top management jobs, the answer should be yes, leaving open the question of how to address such disparities.[77] If the answer is that these ads demonstrate a gendered effort to prey on gullible or hubristic men, the answer depends on something other than the role of gender in the effort.

The emphasis on the gendered distribution of the Google ads may thus distract from a focus on longer-term outcomes. Both legitimate high-end coaches and unscrupulous peddlers are less likely to target women for these services. The two farther reaching issues involve the coding of executive positions in stereotypically male terms, a coding that is hardly limited to algorithms or internet ads,[78] and the reputability and value of coaching services, which involves both the potential for hucksterism and issues of access not so different from SAT prep courses. As algorithms that employ data mining become ubiquitous, they should neither shield their creators from responsibility for the outcomes nor distract attention from the need to address the larger question of how they are used. These questions go beyond targeting the recipients of the ads to the larger questions of executive recruitment.

The ridesharing services, for example, offer a different model. Consider Uber. Even when "[o]nly 14% of U.S. Uber drivers [we]re women," this was still "higher than the 12.7% of taxi drivers and chauffeurs who were women and much higher than the 1% of New York City cabbies that [we]re women."[79] Competitors Lyft and Sidecar made more of an effort to recruit female drivers, using ads that specifically target women who google

77. Employers are better positioned to address these disparities than customers, much the same way universities are better positioned than students to address disparities in access to SAT prep courses.

78. *See* Cahn, Carbone & Levit, *supra* note 4, at 446.

79. Ellen Huet, *Why Aren't There More Female Uber and Lyft Drivers?*, FORBES (Apr. 9, 2015), https://www.forbes.com/sites/ellenhuet/2015/04/09/female-uber-lyft-drivers [https://perma.cc/5ATS-DRZJ]. A 2016 report put the number of women taxi drivers and chauffeurs a bit higher. *Taxi Drivers & Chauffeurs*, DATA USA, https://datausa.io/profile/soc/533041/ [https://perma.cc/6J7Y-ASDF] (last visited Feb. 16, 2019).

information about these services,[80] and even Uber, by 2018, had substantially increased the number of women drivers worldwide.[81]

Accordingly, platform world's incorporation of machine learning—while it has the potential to increase discrimination—also has the potential to ameliorate it. It depends on what the machines "learn." That, in turn, depends on something more than the nature of the technology.

2. Customer Ratings and Gender Bias

If there is any distinguishing feature of platform world, it is the substitution of customer reviews for the personal supervision and feedback in more traditional workplaces. Online reviews rank employers and products and are designed to provide confidence about the quality and trustworthiness of goods and services. These online reviews have become ubiquitous, addressing everything from dental services to the suitability of particular shoes for narrow or wider feet. Of course, there are serious and complex issues of what counts as acceptable and unacceptable consumer preferences; of how easy or difficult it is for platforms to sort out acceptable from unacceptable consumer preferences; and of what duty the platforms have to do so.[82]

Nonetheless, every serious examination of these reviews, however, questions their reliability. Customers cannot evaluate safety as well as

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80. Huet, *supra* note 79. Indeed, when one of the authors did a Google search for information on the percentage of female Uber drivers, a pop-up ad appeared with a picture of women drivers and the offer of a signing bonus for joining Lyft. The algorithms that direct Lyft ads do appear to be targeting women (us!) in their recruitment efforts. The ad directed from Huet, *supra* note 79, to *Minneapolis-St. Paul Drivers Make Up to $23/hr Driving Their Car*, LYFT, https://perma.cc/N8AQ-QTZN.

81. *Distribution of Uber's Employees Worldwide in 2017 and 2018, by Gender*, STATISTA, https://www.statista.com/statistics/693807/uber-employee-gender-global/ [https://perma.cc/Q3V2-NB9N] (last visited Mar. 7, 2019).

82. Indeed, the issues of what performance criteria are legitimately part of a job description, and of what customer preferences are "biases," are quite subtle and highly contested; our examples simplify these distinctions, analyzing objective performance criteria. We still have not developed "normative principles that can help distinguish cases in which platforms would be wrong to infringe on users' personal autonomy from those in which platforms can override users' preferences in the interest of combating discrimination." Karen Levy & Solon Barocas, *Designing Against Discrimination in Online Markets*, 32 BERKELEY TECH. L.J. 1183, 1234 (2017); *see generally* Larry Alexander, *What Makes Wrongful Discrimination Wrong? Biases, Preferences, Stereotypes, and Proxies*, 141 U. PA. L. REV. 149 (1992).

professionals, and fraud in the production of reviews is sufficiently frequent that the FTC has investigated such claims.[83]

Moreover, while many websites allow customers to leave comments and reviews, they do not allow the workers to post such information or responses, meaning that bad reviews can remain without comment or explanation.[84] Nonetheless, online reviews influence consumer behavior, and women customers, who tend to be warier of online purchases than men, are more likely to rely on them.[85]

Platforms can—and do—take steps to manage this problem,[86] but they cannot verify the legitimacy of each review. Accordingly, there is every reason to expect existing societal biases to influence the reviews; nonetheless, platform companies use the reviews in ways that defy any single characterization.

a. The Appearance of Gender Disparities

Every serious analysis of customer reviews shows some bias, inside or outside of platform world.[87] The most rigorous studies of bricks-and-mortar world, which involve customer reviews of a variety of services, indicate that

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83. David Streitfeld, *Online Reviews? Researchers Give Them a Low Rating*, N.Y. TIMES (June 7, 2016), https://www.nytimes.com/2016/06/09/technology/online-reviews-researchers-give-them-a-low-rating.html [https://perma.cc/GMV2-5CVX]; *see also* Mark W. Gifford, *Online Reputation Management*, WYO. LAW., Feb. 2018, at 30, 33, https://www.wyomingbar.org/february-2018-wyoming-lawyer/ [https://perma.cc/YR8X-3C8Y] ("In 2013, the FTC estimated that 15 to 20 percent of online reviews are falsified." (citing *Is Your Law Firm Next in the Crosshairs for Posting "Fake" Online Reviews?*, https://www.majux.com/law-firm-next-in-cross-posting-fake-online-reviews/ [https://perma.cc/BKP8-W6YE])).

84. *E.g.*, Julia Ticona & Alexandra Mateescu, *How Domestic Workers Wager Safety in the Platform Economy*, FAST COMPANY (Mar. 29, 2018), https://www.fastcompany.com/40541050/how-domestic-workers-wager-safety-in-the-platform-economy [https://perma.cc/9J79-XWXG]; JULIA TICONA, ALEXANDRA MATEESCU & ALEX ROSENBLAT, BEYOND DISRUPTION: HOW TECH SHAPES LABOR ACROSS DOMESTIC WORK & RIDESHARING 32 (2018), https://datasociety.net/wp-content/uploads/2018/06/Data_Society_Beyond_Disruption_FINAL.pdf. [https://perma.cc/B4XC-J7D2] (discussing the speed of termination of gig worker's accounts for alleged infractions).

85. Soonyong Bae & Taesik Lee, *Gender Differences in Consumers' Perceptions of Online Consumer Reviews*, 11 ELECTRONIC COM. RES. 201, 211 (2011), https://www.semanticscholar.org/paper/Gender-differences-in-consumers'-perception-of-Bae-Lee/870b32bd703b1b18a1a9893b53041881feeb476e [https://perma.cc/XHZ9-K7FV]; Kate Ashford, *Online Consumer Reviews Aren't All That Useful, Study Finds*, FORBES (Apr. 29, 2016), https://www.forbes.com/sites/kateashford/2016/04/29/online-reviews/#66c8a9354922 [https://perma.cc/UPY7-37C4] (estimating that 5% of online reviews are fake).

86. *E.g.*, Levy & Barocas, *supra* note 82, at 1226–27.

87. Katharine T. Bartlett & Mitu Gulati, *Discrimination by Customers*, 102 IOWA L. REV. 223, 224 (2016).

biases may be pervasive. A comprehensive review of customer service evaluations, for example, that varied the settings to include higher end and lower end services and to control for more objective evaluations of performance, found racial and gender biases to be significant.[88] Moreover, the study found that such biases affected not just individual evaluations but also overall evaluations of the organization where women constituted a larger percentage of the personnel.[89] Unsurprisingly, the study reported that customer biases increased with indications of the reviewer's bias on the implicit association test.

A different study of service providers in higher education found that men were evaluated more highly than women; at least part of the explanation for negative reviews was that customers often did blame the messenger when they got answers they did not like.[90] And a study of phone-based customer service representatives found that while the customers were equally satisfied with male and female representatives, the customers were more satisfied with representatives of the opposite gender than representatives of the same gender.[91] To the extent that platforms depend to a greater degree than other organizations on these reviews, bias in the reviews is an obvious source of concern.[92]

The early indication is that such biases affect platform world in similar ways. A study of TaskRabbit and Fivver, for example, found that an important source of bias involved the number of reviews. On TaskRabbit, women receive significantly fewer reviews, "especially White women," and "gender and race have significant negative correlations with search rank," in part because of the way that the search algorithm incorporated the results of

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88. David R. Hekman et al., *An Examination of Whether and How Racial and Gender Biases Influence Customer Satisfaction*, 53 ACAD. MGMT. J. 238, 256 (2010).

89. *Id.* at 253.

90. Robin L. Snipes et al., *Gender Bias in Customer Evaluations of Service Quality: An Empirical Investigation*, 20 J. SERV. MARKETING 274, 278–80 (2006), https://doi.org/10.1108/08876040610674616 [https://perma.cc/RG6V-5EDL]. When someone called up customer service and got what they wanted, they rated the rep highly. When they called up and got an answer they didn't like, they rated the rep negatively. The differences shrink when that is taken into account, but they don't disappear.

91. Dan Moshavi, *He Said, She Said: Gender Bias and Customer Satisfaction with Phone-Based Service Encounters*, 34 J. APPLIED SOC. PSYCHOL. 162, 169, 172–74 (2004).

92. Employers are not insulated from liability by their customers' biases, but platforms are in a position where they are neither employers nor necessarily charged with responsibility for determining the basis for customer evaluations. *See* Rachel L. Cantor, Comment, *Consumer Preferences for Sex and Title VII: Employing Market Definition Analysis for Evaluating BFOQ Defenses*, 1999 U. CHI. LEGAL F. 493, 507; Alex Rosenblat, Uber's Pax: Hidden Bias in Rating Systems 2 (Dec. 30, 2015) (Comput.-Supported Coop. Work Workshop: Algorithms at Work, working paper), https://algorithmsatwork.files.wordpress.com/2016/02/rosenblat-uber_s-pax-bias-in-rating-systems-cscw-2016.pdf [https://perma.cc/M6J3-5TSP].

the reviews.[93] By contrast, women received more positive results than men on Fivver, and the TaskRabbit reviews favored men over women in some cities but not others.[94] The results may reflect not just gender biases, but the intersection of race and gender, and the different composition of the population in each city.[95]

b. The Sources of Gender Disparities

While customer reviews do show bias, the legal issue is the impact of these reviews on worker pay, promotion, and opportunities. Customer reviews have dramatically greater impact on business outcomes when they become part of ranking systems rather than as part of more complex screening systems designed to weed out less competent performers.[96] Many product searchers allow customers to list products in accordance with customer reviews, as do most restaurant sites. These ranking systems can affect business success because often customers see only the products, restaurants, or workers with the highest rankings. This has invited fraud—with some entities producing fake reviews,[97] often using bots to produce endless numbers of them.[98] It has also encouraged manipulation. Numerous guides advise businesses on how

93. *See, e.g.*, Anikó Hannák et al., *Bias in Online Freelance Marketplaces: Evidence from TaskRabbit and Fiverr*, *in* PROCEEDINGS OF THE 2017 ACM CONFERENCE ON COMPUTER SUPPORTED WORK AND SOCIAL COMPUTING 1914, 1915, 1927, https://dl.acm.org/citation.cfm?id=2998327 [https://perma.cc/5H3U-HSG3] (finding both gendered and racialized dimensions: "More problematically, we observe algorithmic bias in search results on TaskRabbit: perceived gender and race have significant negative correlations with search rank, although the impacted group changes depending on which city we examine.").

94. *Id.* at 1922–23.

95. *Id*. at 1915.

96. Customer ratings are so important that the FTC regulates them, requiring that the rater be a bona fide user, and that any incentives be disclosed. Guides Concerning the Use of Endorsements and Testimonials in Advertising, 16 C.F.R. § 255 (2018), https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-publishes-final-guides-governing-endorsements-testimonials/091005revisedendorsementguides.pdf [https://perma.cc/LVM9-6PMP]. For a discussion of how they are used, see, for example, AARON SMITH & MONICA ANDERSON, PEW RES. CTR., ONLINE SHOPPING AND E-COMMERCE (2016), http://assets.pewresearch.org/wp-content/uploads/sites/14/2016/12/16113209/PI_2016.12.19_Online-Shopping_FINAL.pdf [https://perma.cc/66WM-M3Y9].

97. For a claim of fake reviews on eBay, see vintageneil, *Top 10 Ebay Cons*, EBAY (Aug. 10, 2017), https://www.ebay.com/gds/10-TOP-EBAY-CONS-A-GUIDE-TO-COMMON-FRAUDS-ON-EBAY-/10000000002145432/g.html [https://perma.cc/LDT2-3Z4F].

98. Patrick Kulp, *Online Reviews Have a Major Trust Problem*, MASHABLE (Nov. 9, 2017), https://mashable.com/2017/11/09/online-reivews-maybe-broken/#9ROsJD2qxqqq [https://perma.cc/296J-CLJD]; Tim McIntyre, *Consumers Put Too Much Faith in Online Reviews, Experts Warn*, NEWS.COM.AU (Jan. 28, 2018), https://www.news.com.au/finance/money/costs/consumers-put-too-much-faith-in-online-reviews-experts-warn/news-story/ad9accd01b5a2e1521e061faa344f711 [https://perma.cc/NXB3-5CFG].

to manage reviews, often by encouraging them to ensure that satisfied customers post them, and by responding promptly to customer complaints.[99] Platforms typically have more controls than restaurant or hotel sites to prevent fake reviews, but they cannot prevent their workers from reminding customers of the importance of reviews, which could account for the smaller number of reviews women receive on TaskRabbit, for example. Studies in other contexts, however, indicate that customers may tolerate self-interested behavior from men more than from women.[100] Accordingly, we do not yet have a full picture of what drives the reported gender disparities.

Some platforms, however, use reviews not to rank but to screen. eBay and Uber, for example, rely heavily on customer evaluations to identify problem sellers and drivers.[101] On eBay, women have higher customer evaluations than men, and there is no indication of gender differences in evaluations on Uber. The reason may be that these platforms do not use customer evaluations to compare different individuals to each other. Instead, they use them to weed out problem sellers and drivers. As a result, virtually all of the repeat performers on these platforms have high evaluations. As a practical matter, therefore, while some critics complain that the Uber type systems that use ratings primarily to weed out problem drivers do not give customers enough information, they may work to women's benefit compared to more steeply graded systems, which may either reflect bias or encourage manipulation to a greater degree.[102]

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99. *See, e.g.*, Alison DeNisco Rayome, *7 Best Practices for Managing Online Reviews of Your Business*, TECHREPUBLIC (Apr. 19, 2017), https://www.techrepublic.com/article/7-best-practices-for-managing-online-reviews-of-your-business/ [https://perma.cc/BXR9-BQJM].

100. Rosanna E. Guadagno & Robert B. Cialdini, *Gender Differences in Impression Management in Organizations: A Qualitative Review*, 56 SEX ROLES 483, 486 (2007), http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.492.6656&rep=rep1&type=pdf [https://perma.cc/XB43-D859]; Joanna Wolfe, *Communication Styles in Engineering and Other Male-Dominated Fields*, *in* APPLYING RESEARCH TO PRACTICE (ARP) RESOURCES (Barbara Bogue & Elizabeth Cady eds., 2012), https://www.engr.psu.edu/awe/ARPAbstracts/CommunicationsSkills/ARP_CommunicationStyles_Literature%20Overview.pdf [https://perma.cc/B6YU-NBQE].

101. Rosenblat, *supra* note 92, at 2 n.6. Uber also allows drivers to rate customers, and some reports of drivers retaliating against customers who give them low ratings all involve women customers.

102. Another concern that is difficult to evaluate is driver retaliation against customers who do not leave higher reviews. Journalistic accounts describe drivers becoming angrier at women than men, but no data has been collected to date that confirms or rebuts these impressions. *See supra* note 101; Jennings Brown, *Some Uber Drivers Are Changing Rider Ratings in Retaliation for Bad Reviews*, GIZMODO (Aug. 7, 2017), https://gizmodo.com/some-uber-drivers-are-changing-rider-ratings-in-retalia-1797597564 [https://perma.cc/VP5C-64Y9].

c. Takeaways

There is no compelling research to date as to whether customer reviews are more or less biased than supervisors' reviews in bricks-and-mortar world, which also have pervasive indications of bias.[103] The question instead is how to mitigate the risk of bias in both contexts. Companies like eBay, as they mature, end up with more repeat players and fewer amateurs testing out a new platform. As that happens, the professionals become more adept at dealing with customers, reducing the impact of customer bias. On eBay, for example, many sellers provide less identifying information than they did in the early days of the site, making it harder to tell whether the seller is male or female. It remains to be seen, however, whether biased evaluations produce differentials in the selection of the sellers and drivers who remain on these platforms.[104] In platforms such as TaskRabbit that depend on rankings, the net effect may be to limit access to the platform, because rating systems may be used to give jobs to workers.

The accuracy and fairness of these reviews should, therefore, be a source of concern for anyone who relies on them, with the biggest questions going forward being ones of access. Indeed, the best-documented examples of bias in platform world involve race rather than gender, particularly on platforms such as Airbnb.[105]

3. Price and Gender

Platform world, in its disruption of standardized business practices, creates an alternative system for setting prices. In bricks-and-mortar world, most prices are fixed. In platform world, prices are more variable. In some cases, they are the result of algorithms, which take into account factors such

103. Paola Cecchi-Dimeglio, *How Gender Bias Corrupts Performance Reviews, and What to Do About It*, HARV. BUS. REV. (Apr. 12, 2017), https://hbr.org/2017/04/how-gender-bias-corrupts-performance-reviews-and-what-to-do-about-it [https://perma.cc/LV8X-JMC4]; Rachel Emma Silverman, *Gender Bias at Work Turns up in Feedback*, WALL ST. J. (Sept. 30, 2015), https://www.wsj.com/articles/gender-bias-at-work-turns-up-in-feedback-1443600759 [https://perma.cc/GX2J-YFDA].

104. We do know that women Uber drivers experience higher turnover than the men, but this could be true for a number of reasons.

105. The response had been to consider alternate platforms such as Noirbnb, which attempts to match participants willing to seek out minority sellers and buyers rather than risk the potential of race-based discrimination. *About Us*, NOIRBNB, http://noirbnb.com/about.html [https://perma.cc/33B6-JGXU] (last visited Jan. 27, 2019) ("Noirbnb is a global travel community that provides experiences and events with a focus on including and celebrating travelers of color. . . . Noirbnb was born in October 2015 after our co-founder, Stefan's experience while booking a stay in Atlanta.").

as surge pricing. In other cases, though, the prices are the result of auctions or negotiations. Variable pricing can interact with biases and gender stereotyping to raise questions about its systemic fairness.

a. The Appearance of Gender Disparities

Well before the rise of platform world, researchers documented gender disparities in the prices available to, and negotiated by, men and women. Variable prices, such as those associated with car sales, tend to increase the differences.[106] And women tend to be dramatically underrepresented among those selling on commission or in other contexts where aggressive behavior to accumulate (or fleece)[107] customers is an important component of the job.[108] Women may receive lower initial salaries because of a failure to negotiate.[109]

The online world shows similar disparities. In an innovative experiment, Hernan Galperin sent out a fictitious business solicitation from a marketing services agency to several thousand freelance workers. The invitation was signed by either "Maria" or "Jose." Maria was charged substantially more (22%) for the same job. Male freelancers were also more likely to negotiate, even when the price was allegedly fixed.[110]

Another survey's empirical evaluation of a global online platform that connects potential workers with those needing that work found that women set their hourly fees at a statistically significant level lower than men.[111] Using computational methods that captured some of the gendered interactions, the researchers found that even when the online workers had the same years of experience and the same education, and the same online ratings, women still undercharged; while the average hourly rate for women was $28, it was $45 for men.[112] The authors observed that women sometimes set lower initial

106. Ian Ayres, *Fair Driving: Gender and Race Discrimination in Retail Car Negotiations*, 104 HARV. L. REV. 817, 819 (1991).

107. PAUL BABIAK & ROBERT D. HARE, SNAKES IN SUITS: WHEN PSYCHOPATHS GO TO WORK 97 (2006) (describing the psychology of high-pressure sales representatives).

108. *See* EEOC v. Sears, Roebuck & Co., 839 F.2d 302, 312, 324 (7th Cir. 1988).

109. *E.g.*, Naomi Schoenbaum, Ignorance as Equality (2018) (unpublished manuscript) (on file with authors).

110. Hernan Galperin, Guillermo Cruces & Catrihel Greppi, Gender Interactions in Wage Bargaining: Evidence from an Online Field Experiment 36 (Sept. 20, 2017) (unpublished manuscript), https://ssrn.com/abstract=3056508 [https://perma.cc/E48X-UDZC].

111. Arianne Renan Barzilay & Anat Ben-David, *Platform Inequality: Gender in the Gig-Economy*, 47 SETON HALL L. REV. 393, 408 (2017).

112. *Id.* The researchers could not determine, however, how much pay the workers actually received.

prices to avoid negotiations, and found that "leaning in" may not work for them as well as it does for men.[113]

And women may be right to avoid negotiations, since problems can become more complex when prices involve an interaction between sellers and buyers. eBay, for example, sought to distinguish itself from online sales platforms such as Amazon through the use of an auction system. With fixed prices, Amazon encourages customer shopping through comparisons of price and quality (with online customer evaluations influencing quality determinations). By using an auction system, eBay adopted a very different form of seller-buyer interaction; it became not just a form of shopping, but a captivating and often addictive game—fueled by the thrill of "winning."[114] eBay thought of its auctions as consumer democracy, effectively policing themselves. It relied on customer ratings to test the reliability of its settings and assumed that "most people are honest."[115] Since then, the novelty of the auction format has lost its allure, and fraudulent transactions have given eBay headaches.[116] Today, only a minority of the goods sold on eBay employ the auction format.[117] Nonetheless, when the auction format was at its height, it produced notable gender disparities. Although eBay, in developing an auction framework, removed the direct face-to-face interactions between buyers and sellers and attracted many female sellers, customers (and researchers) could typically identify gender. Studies during this period showed that men tended to outnumber women sellers by at least three to one, and women did less well than men within the auction format.[118] A review of

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113. *Id.* at 420 (noting that women tend to set lower prices to avoid negotiations, and that "leaning in" has more negative consequences for women than men).

114. "For many, perhaps most, people, this was their first experience with auctions. The novelty, the competition, and the thrill of winning all came together in an intoxicating brew . . . You didn't buy a product, you won an auction. And the competitive thrill meant that lots of customers were willing to pay more." James Surowiecki, *Going, Going, Gone: Who Killed the Internet Auction?*, WIRED (May 17, 2011, 9:48 PM), https://www.wired.com/2011/05/ff_endofauction/ [http://perma.cc/SV8N-5UZJ].

115. Anna Tims, *Ebay Accused of Failing Its Sellers as Fraudulent Buyers Manipulate the System*, GUARDIAN (May 21, 2017, 1:59 PM), https://www.theguardian.com/money/2017/may/21/ebay-accused-failing-sellers-buyers-manipulate-system-protection [http://perma.cc/LRR8-P9V6].

116. *See id.*

117. Chris Dawson, *Are eBay Auctions a Thing of the Past?*, TAMEBAY (Feb. 12, 2017, 6:54 PM), https://tamebay.com/2017/02/are-ebay-auctions-a-thing-of-the-past.html [http://perma.cc/6MTY-LJSR]; Surowiecki, *supra* note 114.

118. Tamar Kricheli-Katz & Tali Regev, *How Many Cents on the Dollar? Women and Men in Product Markets*, SCI. ADVANCES, Feb. 19, 2016, at 2, http://advances.sciencemag.org/content/2/2/e1500599/tab-pdf [http://perma.cc/DN5N-LZT7] (finding women constituted 23.07% of all sellers, with a slightly higher percentage of them as "Buy It Now" sellers and slightly fewer in the auction sales).

the auction sales indicates that when men and women sold identical products, women received fewer bids and lower offers.[119] Indeed, overall the researchers found that women received 80 cents on the dollar for the new (and thus presumptively identical) goods they sold, compared to the men, though the differences declined to 97 cents on the dollar for used goods where comparability is harder to measure.[120] Women sellers, however, enjoyed slightly higher reputation scores than the men, after controlling for experience (women sellers had less) and other factors.[121] And women buyers, in turn, were more likely to buy from other women.[122]

Or consider Etsy, which conducted an online survey with almost one hundred thousand sellers:

> *Etsy sellers, who are mostly women, report higher levels of education than most Americans—yet, the average median income for Etsy sellers is just $44,900, ten percent lower than the national average. Twenty-six percent of Etsy sellers earn under $25,000 in annual household income.*[123]

One journalist asks, "Could it be a coincidence that the average Etsy seller is female and college-educated, yet is still grossly underpaid?"[124]

Women may earn less on other platforms for related issues, also seen as women's "choice."[125] Thus, even through a platform where the hourly rates are set by a third party, women may have different work patterns that lead them to work less, or not at all, during the better-paid surge hours in the Uber-

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119. *Id.* at 1.

120. *Id.*

121. *Id.* at 2.

122. Female customers also tended to pay higher prices for the identical items than male customers, but the interaction between women's tendency to pay higher prices and to buy from women sellers disappeared once the researchers controlled for other factors. *See* Ian Ayres et al., *Race Effects on eBay*, 46 RAND J. ECON. 891, 910 (2015) (in baseball card auctions on eBay, cards held by a black hand sell for less than cards held by a white hand); Nancy Leong, *The Sharing Economy Has a Race Problem*, SALON (Nov. 2, 2014, 4:58 PM), http://www.salon.com/2014/11/02/the_sharing_economy_has_a_race_problem/ [http://perma.cc/3PAP-C5FT].

123. Jennifer Neeley, *Is the Sharing Economy Feminist?*, MEDIUM: ON-DEMAND (June 1, 2015), https://medium.com/ondemand/is-the-sharing-economy-feminist-ea4ce5480c26 [http://perma.cc/ZZM2-L8YY] (from report by Etsy).

124. *Id.* It turns out that online sales platforms may also be sex-segregated.

125. For a critique of the choice argument, see Nancy Levit, *Keeping Feminism in Its Place: Sex Segregation and the Domestication of Female Academics*, 49 U. KAN. L. REV. 775, 802–03 (2001) (noting that "choice" includes "socially coerced choices, strategic choices, choices under pressure, choices by people in subordinate positions, and choices within a limited range of options").

world.[126] Concerns about platform world thus emphasize that women tend to "undersell themselves" by setting lower initial prices,[127] are less likely to negotiate, are more likely to be subject to consumer biases when they do assert themselves, and are less likely to do well in platform negotiations.

b. The Sources of Gender Disparities

In the studies that show the biggest gender disparities, the precise reasons for the differences are difficult to ascertain. First, correlation is not causation, and the gender differences were not always to women's detriment. Second, the studies attempted to control for factors such as worker experience, customer reviews, and item quality, but the researchers did not interview the participants. Moreover, they did not consider a variety of subtler factors that may influence how platforms develop in the future.

In the eBay study, for example, gender differences did not appear to be a function of the auction format per se, but rather differed substantially by product. Male sellers made more than female sellers when selling products such as new jewelry and watches or gift cards and coupons, while female sellers earned more than the men when selling used toys and hobby goods or pet supplies.[128] The researchers could not explain the differences between new and used goods other than to note that dramatically more of the goods sold in eBay auctions are used, and that used goods are harder to value (though the researchers tried to do so). They also speculated that the sale of goods such as used toys or pet carriers may be more a matter of trust about cleanliness and quality than price.[129] The gender composition of eBay purchasers may also have an effect; women are approximately 50% less likely to be buyers.[130] And while researchers found that on gig worker

126. Alexa Kissinger, *Women & the Gig Economy: Flexibility in a Vacuum Just Isn't Enough*, ON LABOR (May 27, 2016), https://onlabor.org/2016/05/27/women-the-gig-economy-flexibility-in-a-vacuum-just-isnt-enough/ [http://perma.cc/VH7A-ECSE].

127. Barzilay & Ben-David, *supra* note 111, at 420.

128. The researchers also found that goods such as gift cards were valued differently in lab experiments depending on whether they were associated with male or female sellers. Kricheli-Katz & Regev, *supra* note 118, at 4.

129. *Id.* The researchers speculated "that potential buyers trust women's account of the condition of used products more than they trust men's—even when they enjoy the same reputation on eBay," but they could not directly test the validity of the proposition. *Id.*

130. *Distribution of eBay Shoppers and Buyers in the United States as of 4th Quarter 2017, by Gender*, STATISTA, https://www.statista.com/statistics/242479/ebay-us-shoppers-gender/ [http://perma.cc/KM2Q-ZJNW] (last visited Feb. 17, 2019) (finding that 61% of the buyers are male).

platforms women tended to set lower initial prices, in the eBay study, women set higher starting prices than men did—but still received less.[131]

The fact that gender disparities varied by category, however, suggests that factors other than gender bias per se may be at play. Consider gift cards. The authors of the eBay study attempted to show the influence of gender bias by running a lab experiment in which they showed their test subjects gift cards being sold by a seller with a male name (Brad) versus a seller with a female name (Alison), and then asked the subjects to estimate their value.[132] The subjects valued the gift cards associated with Brad at $87.42 in comparison with Alison's cards, which they valued at $83.34, even though the cards in question were of identical value.[133] This strongly suggests that differences in the sale of gift cards, one of the categories that shows the greatest gender differences, is a product of bias. But, an online search for "eBay gift cards" leads to eBay community forums with repeated warnings about gift card fraud.[134] A second online search for the category with the biggest gender differences—new jewelry and watches—also produces fraud warnings, warning sellers of various buyer-initiated scams.[135] The same factors that make gift cards and new Bulova watches easy to study—their established value and relatively high prices—also make the prices subject to substantial manipulation and outright fraud.[136]

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131. Kricheli-Katz & Regev, *supra* note 118, at 2. The researchers found that women overall set lower prices, but that this occurred because they were selling cheaper products. *Id.* at 2. When the researchers looked at men and women setting the same items, they found that women were more likely to set higher initial prices. *Id.* Women were also more likely than the men to set a "reserve price," for which eBay charges a fee, suggesting that they were less confident than the men that their goods would be sold, perhaps because their different experiences on eBay than male sellers. *Id.* at 2–3.

132. *Id.* at 6.

133. *Id.*

134. channjackso-0, *Do Not Buy eBay Gift Cards! Scam Alert!*, EBAY: THE EBAY COMMUNITY (Feb. 24, 2018, 9:47 AM), https://community.ebay.com/t5/My-Account/Do-not-buy-ebay-gift-cards-Scam-alert/td-p/28162329 [http://perma.cc/MNC2-94LW] (last visited Jan. 13, 2019).

135. the_treasure_port, *Sellers Beware!!! Especially if You Sell Jewelry . . .*, EBAY: EBAY COMMUNITY (July 16, 2012, 11:02 AM), https://community.ebay.com/t5/Archive-eBay-Cafe/Sellers-Beware-Especially-if-you-sell-jewelry/td-p/2686199 [http://perma.cc/87C3-9QGV] (last visited Jan. 13, 2019); timeagainwatches, *How to Make Sure You Are Buying an Authentic Watch*, EBAY: BUYING GUIDES (Apr. 12, 2009), https://www.ebay.com/gds/HOW-TO-MAKE-SURE-YOU-ARE-BUYING-AN-AUTHENTIC-WATCH-/10000000006353743/g.html [http://perma.cc/ZRJ4-KTWW] (last visited Jan. 13, 2019).

136. Joseph M. Forgione, *Counterfeiting, Couture, and the Decline of Consumer Trust in Online Marketplace Platforms*, 61 N.Y.L. SCH. L. REV. 195, 197 n.8 (2017) (indicating that as a measure of the significance of the counterfeiting, "[w]atches and jewelry accounted for 47% of the value of goods seized by Customs in 2016, a value of $653,590,442 had they been genuine").

This in turn affects the sellers likely to sell on eBay, a group who have changed over time. On eBay generally, fraud is a major issue, experiencing "explosive growth" since the development of the platform.[137] This in turn makes it riskier to sell on platforms such as eBay and could influence gender disparities. First, the risk of counterfeiting increases the importance for sellers of having reputable suppliers, which in turn intensifies the importance of experience, expertise, and reliable networks.[138] Yet, for example, the jewelry business has been called "sexist," making it more likely that male sellers will have such connections and experience.[139] Second, these risks increase the importance of the platform being able to deal with buyers engaged in fraudulent practices.[140] Finally, there is the possibility that the men earning more than women on eBay are themselves engaging in manipulative or deceptive practices. While no studies exist documenting gender differences in eBay fraud, studies in other contexts suggest that men are more likely than women to engage in corporate fraud,[141] and fraud against their employers or customers.[142] This makes the question of what causes gender differences in platform world more complex.

In dealing with price differences in services, such as those on TaskRabbit, fraud is less of an issue. Nonetheless, different pathways into platforms may account for some of the differentials. Consider two workers with identical

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137. *See, e.g.*, NETNAMES, COUNTING THE COST OF COUNTERFEITING 4 (2015) ("In an environment where counterfeiting is as profitable as illegal drugs . . . we are seeing explosive growth. Expanding by over 15% every year, counterfeiting now costs more than 2% of total global economic output, or around $1.8 trillion per year. There is little doubt as to the crucial role played by the digital world in this meteoric rise, with a 15% increase in sales of counterfeit goods online last year.").

138. Aron Hsiao, *Top Risks eBay Sellers Face*, BALANCE SMALL BUS. (Sept. 9, 2017), https://www.thebalancesmb.com/top-ten-risks-ebay-sellers-face-1140349 [http://perma.cc/383N-JLRG] (noting the problems associated with determining whether the goods are counterfeit).

139. *See, e.g.*, Andrea Cheng, *How a Massive Gender Gap Is Hurting the Diamond Industry*, FASHIONISTA (Sept. 14, 2017), https://fashionista.com/2017/09/diamond-industry-gender-gap [http://perma.cc/L9TE-4JMB] ("The industry itself is fundamentally sexist. It's controlled by a few key players whose families have been in the business for generations, all of which—you guessed it—is run by men.").

140. Tims, *supra* note 115 (noting accusations against eBay of failing to protect its sellers).

141. *See* Darrell J. Steffensmeier, Jennifer Schwartz & Michael Roche, *Gender and Twenty-First-Century Corporate Crime: Female Involvement and the Gender Gap in Enron-Era Corporate Frauds*, 78 AM. SOC. REV. 448, 469 (2013).

142. Joe Pye, *Women Are More Honest Employees, Yet Still Are Paid Less*, DEBT.COM (July 11, 2018), https://www.debt.com/2018/men-likely-women-commit-fraud-work/ [http://perma.cc/CZ5D-YAHM]. Women are also more likely to be punished. Mark L. Egan, Gregor Matvos & Amit Seru, *When Harry Fired Sally: The Double Standard in Punishing Corporate Misconduct* 2 (Nat'l Bureau of Econ. Research, Working Paper No. 23242, 2018), http://www.nber.org/papers/w23242 [http://perma.cc/N69N-JH7Z].

education and years of experience. One is a plumber, who would like to work full time, but has had a falloff in customers. The other took time off after the birth of a child. Both use TaskRabbit to pick up additional income in ways that can accommodate their other responsibilities. In the case of the plumber using platform world to supplement other income, the other plumbing activities establish price expectations. The first plumber will not want activities on platform world to undercut the price for non-platform plumbing services, and if the difference in price is too great, the first plumber is likely to look elsewhere for additional plumbing jobs. The second plumber will not have other plumbing work as a base point for price expectations. Instead, platform world is likely to be the only option to produce additional income as a plumber, while also acting as a primary caretaker for the children. The result may be that each of these two plumbers has a different "reservation price" for participation in platform world.[143] And these factors may affect a wide swath of the gig workers in platform world. Men generally are more likely to be doing side jobs than are women; that is, they were more likely to be working a second job to add their income from a first job.[144] And women earn just more than a third of what men earn per month when they do side jobs, in part because the men doing them are more likely than the women to be experienced professionals.[145] These disparities, which do not include the differences in education or experience that most empirical studies control for, could explain women's tendency to set lower prices, given that women are more likely to be turning to platform world because of its greater flexibility and accommodation of family responsibilities. Is this speculative about gendered traits? Yes. But it is not fundamentally different from the speculation about the other roles gender plays in price differences.

Most empirical studies that find differences in price assume one of two stories. The first is that women undersell themselves, although the story could just as easily be told in terms of male narcissism, entitlement, or dominance displays in negotiations.[146] These authors suggest that women, perhaps

143. *Reservation Price*, NEGOTIATIONS, https://www.negotiations.com/definition/reservation-price/ [http://perma.cc/KMJ9-9VJ2] (last visited Jan. 26, 2019).

144. Lisa Rabasca Roepe, *How Side Hustles Can Impact the Gender Pay Gap*, FORBES (Apr. 24, 2018, 10:36 AM), https://www.forbes.com/sites/lisaroepe/2018/04/24/how-side-hustles-can-impact-the-gender-pay-gap/#7713be8178e7 [http://perma.cc/DH4M-X95A].

145. Fourteen percent of men, compared to 9% of women, are doing side work each week. Amanda Dixon, *The Average Side Hustler Earns Over $8K Annually*, BANKRATE (June 25, 2018), https://www.bankrate.com/personal-finance/smart-money/side-hustles-survey-june-2018/ [http://perma.cc/93ZG-5QT9]. The patterns may be somewhat different in Europe. *See* Jan Drahokoupil & Agnieszka Piasna, *Work in the Platform Economy: Beyond Lower Transaction Costs*, 52 INTERECONOMICS 335, 337–38 (2017), https://archive.intereconomics.eu/year/2017/6/work-in-the-platform-economy-beyond-lower-transaction-costs/ [http://perma.cc/M9PH-AK7F].

146. *See* Cahn, Carbone & Levit, *supra* note 4, at 464–66.

because of risk aversion or conflict avoidance, set lower prices to avoid negotiations.[147] The second, complementary story is that customer bias drives the behavior, with customers' undervaluing women's services or reacting more negatively to women than when they attempt to drive a hard bargain on the same terms as men do.[148] The alternative story developed in this Article is not necessarily inconsistent with the gender traits (women are more risk averse) or gender bias accounts. It suggests, however, that structural factors may play at least as big a role in observed gender disparities. All studies show that more experienced sellers and workers do better in platform world.[149] And, indeed, studies of gender-based risk aversion also show that gender differences decline or disappear among professionals trained to manage risk.[150] The eBay study, however, does not and cannot control for experience in dealing with fraud in jewelry or gift card sales,[151] and the studies of worker platforms do not fully control for participants' experience in price setting out of platform world, even if the study does control for education and experience in the task.

What this means is that the sellers who sell on eBay may be far more varied than any statistical study can capture, making gendered price comparisons of uncertain value. The fact that female eBay sellers are more likely to set reserve prices, for example, can involve both greater risk avoidance and a realistic choice to protect against vulnerability to customer bias. Both indicate adaptions to platform world over time. And one of the things that has changed on eBay since the study was conducted is that there is less information about sellers. Today, it would be harder to determine gender than at the time the study was conducted. In a recent search for Bulova watches, for example, the top dealer listed had a username of "officialwatchdeals" and was listed as an "[o]fficial Bulova seller."[152]

147. Barzilay & Ben-David, *supra* note 111, at 420–21 (noting that women tend to set lower prices to avoid negotiations, and that "leaning in" has more negative consequences for women than men); *see also* Kricheli-Katz & Regev, *supra* note 118, at 2, 7 (suggesting that women eBay sellers are more risk averse than men and therefore more likely to use the "Buy It Now" option with fixed prices rather than use the auction system).

148. Kricheli-Katz & Regev, *supra* note 118, at 6–7.

149. *See e.g.*, *id.* at 4.

150. *See* Cahn, Carbone & Levit, *supra* note 4, at 462.

151. Nor does it control for other seller characteristics such as experience outside of eBay. Kricheli-Katz & Regev, *supra* note 118, at 4.

152. *Officialwatchdeals*, EBAY, https://www.ebay.com/usr/officialwatchdeals [https://perma.cc/N3ZR-A878] (last visited Jan. 13, 2019).

c. Takeaways

What these results suggest is that the terms of platform world have yet to be institutionalized. Informal economies across the globe build in greater variation in the terms of sales and employment contracts than the standardized arrangements of large institutions. They also offer more opportunities for fraud, manipulation, and gender bias. Over time, standardized prices might limit some of the gender disparities in platform world, but more standard prices might also mean that the women who post lower prices eventually lower the price for the men as well. And disguising gender may solve problems associated with bias and harassment,[153] but may not eliminate gender differences in dealing with the risks associated with unscrupulous practices.

The more important questions may become, as they are in platform world, issues of access. Experience creates greater ability to deal with fraud on eBay, price expectations on TaskRabbit, and gender bias in customer expectations. One of the advantages of platform world has been its relatively few barriers to entry, but the more that experience is necessary to counter its gendered effects, the less open it may become.

B. Shooting Someone on Fifth Avenue and Getting Away with It[154]*: Safety Concerns*

"'They make us drive to these really unsafe zones,'" reported one female driver who works for a grocery delivery company.[155]

With its celebration of "disruption," platform world often emphasizes its disdain for the traditional standards and regulation that apply to traditional industries. eBay first gained attention through its use of an auction format that eschewed fixed prices. Airbnb and Uber originally came into existence ignoring the regulations—for better and ill—that govern taxi companies and hotels.[156] As courts, legislatures, and platform creators respond, the platforms

153. *See* Schoenbaum, *supra* note 109.

154. Jeremy Diamond, *Trump: I Could 'Shoot Somebody and I Wouldn't Lose Voters,'* CNN: POLITICS (Jan. 24, 2016, 12:03 PM), https://www.cnn.com/2016/01/23/politics/donald-trump-shoot-somebody-support/index.html [https://perma.cc/W26H-J5Z6].

155. Sam Levin, *Sexual Harassment and The Sharing Economy: The Dark Side of Working for Strangers*, GUARDIAN (Aug. 23, 2017, 6:00 AM), https://www.theguardian.com/business/2017/aug/23/sexual-harassment-sharing-economy-uber-doordash-airbnb-twitter [https://perma.cc/7CXT-ZHEZ].

156. These protections involve insurance to cover accountability for passenger safety and a variety of other issues accidents. Andrew J. Yawn, *Uber v. Taxis: What's the Difference?*,

change, ironing out insurance requirements in some cases, or addressing scammers in others. Overall, however, the platform exchanges remain less regulated than the traditional economy, creating new opportunities for the ambitious *and* the unscrupulous. And the lack of regulation—or simply ordinarily policing—can make platforms more dangerous, particularly for women.

Unsafeness in the platform operates both virtually and physically. As the previous sections have demonstrated, women are not protected from negative reviews or differential pricing, and in some cases, outright fraud. Moreover, women are vulnerable to online harassment. Finally, women experience physical and sexual vulnerability as both workers and customers, particularly where the work takes place in someone else's home or requires interactions with customers in cars or other unprotected places.[157]

Women report that customers grab their breasts and send them pornographic texts and pictures; harassment goes unpoliced.[158] HoneyBook, a popular online platform for freelancers who work in event planning, surveyed its users. While not a scientific study, the findings show that more than half of the workers had been harassed at least once; some had been called demeaning nicknames, some had been physically intimidated, and most had received "unprofessional comments" on their appearance.[159]

Women, of course, also face such challenges in traditional employment. It is thus important to consider what is different—and what isn't—in platform world. First, platform world rarely involves standardized workplaces.[160] Craigslist sellers who are based at home incur greater risks than sellers in antique stores. Second, platforms connect workers with the public. On the one hand, the apps often allow greater screening than might otherwise occur.

MONTGOMERY ADVERTISER (Jan. 21, 2016, 5:31 PM), https://www.montgomeryadvertiser.com/story/news/2016/01/21/uber-vs-taxicabs-whats-difference/79132286/ [https://perma.cc/VMN7-L8WC].

157. Schoenbaum, *supra* note 2, at 1044.

158. Elizabeth King, *How Freelancers Are Forced to Fend for Themselves Against Sexual Harassment,* BROADLY (Nov. 2, 2016, 12:40 PM), https://broadly.vice.com/en_us/article/vb4m73/how-freelancers-are-forced-to-fend-for-themselves-against-sexual-harassment [https://perma.cc/YLF3-PL9B]; Levin, *supra* note 155.

159. Nathan Heller, *The Gig Economy Is Especially Susceptible to Sexual Harassment*, NEW YORKER (Jan. 25, 2018), https://www.newyorker.com/culture/cultural-comment/the-gig-economy-is-especially-susceptible-to-sexual-harassment [https://perma.cc/R6ED-RRXX]; *Sexual Harassment Is Pervasive Among Self-Employed Creatives*, HONEYBOOK (Jan. 25, 2018), https://www.honeybook.com/risingtide/sexual-harassment-report/ [https://perma.cc/83UX-WNU9].

160. EUR. AGENCY FOR SAFETY AND HEALTH AT WORK, A REVIEW ON THE FUTURE OF WORK: ONLINE LABOUR EXCHANGES, OR 'CROWDSOURCING': IMPLICATIONS FOR OCCUPATIONAL SAFETY AND HEALTH 2–3 (2015), https://osha.europa.eu/en/tools-andpublications/publications/future-work-crowdsourcing [https://perma.cc/M3CT-7LUV].

On the other hand, they may provide less training and standardized protection. Consider ride sharing platforms. Taxi driving is one of the most dangerous jobs, and the industry has historically had few women drivers.[161] Ride sharing programs have attracted more women, and they allow their drivers to avoid bar districts or time periods such as 2 a.m. that produce more drunken or rowdy passengers. In addition, platform drivers, unlike taxi drivers, do not carry cash and the customer ratings that are part of the ride sharing apps allow them to identify—and exclude—troublesome riders more easily than a driver picking up customers who hail them on the street. Nonetheless, the platforms provide less in the way of safety training or vehicle safety features such as grilles separating drivers and passengers than cab companies.[162] And Uber incentives discourage ride cancellation, limiting the drivers' ability to screen potential customers on the basis of their individual characteristics.[163] Some entrepreneurs have looked into the possibility of starting a women only ride-sharing company—with women drivers picking up only women customers for reasons related to safety and comfort to address the issue.[164]

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161. Molly McHugh, *Uber and Lyft Drivers Work Dangerous Jobs—But They're on Their Own*, WIRED (Mar. 10, 2016, 7:00 AM), https://www.wired.com/2016/03/uber-lyft-can-much-keep-drivers-safe/ [https://perma.cc/M57U-T7ZR]. On the percentage of women, see *supra* notes 79–81 and accompanying text.

162. *See* McHugh, *supra* note 161.

163. *See, e.g.*, *Can Uber Drivers Get Deactivated for Cancelling Too Many Rides?*, MAXIMUM RIDESHARING PROFITS, https://maximumridesharingprofits.com/can-uber-drivers-get-deactivated-canceling-many-rides/ [https://perma.cc/manage/create?folder=20275] (last visited Mar. 1, 2019) ("You can't get deactivated for acceptance rate requirements, but you can get deactivated for canceling too many rides. Your cancellation rate is determined by Uber: They take the number of trips that you canceled, divided by the number of trips that you accept."); *see also* Julie Wehmeyer, *Ten Reasons That Your Uber/Lyft Driver Cancels on You*, LINKEDIN (Feb. 23, 2017), https://www.linkedin.com/pulse/ten-reasons-your-uberlyft-driver-cancels-you-julie-wehmeyer/ [https://perma.cc/5RVV-VTEK].

Uber explains, on the passenger side:

> All ride requests are blindly matched with the nearest available driver. So there is no discrimination based on race, gender, or destination.
>
> **Driver profiles**
>
> When you're matched with a driver, you'll see their name, license plate number, photo, and rating—so you know who's picking you up ahead of time. And even after the trip, you're able to contact your driver if you left something behind.

From Start to Finish, A Ride You Can Trust, UBER (Apr. 3, 2017), https://www.uber.com/en-TR/blog/safety-4/ [https://perma.cc/EVA3-4YRP].

164. *See* Rebecca Gale, *When Men Sue Women's Empowerment Orgs for Gender Discrimination*, SLATE (July 3, 2018, 10:00 AM), https://slate.com/human-interest/2018/07/men-

Safety concerns may also affect women's performance in other ways. One factor in the Uber gender discrimination study was men's tendency to drive faster, allowing them to pick up more rides in a given time period;[165] Uber rewards drivers who carry more customers farther in a given amount of time.[166] To the extent faster driving is an advantage, making the fact apparent to female drivers or giving them more training might eliminate the disparity. But platform operators like Uber might have a different motive. On the one hand, they may not wish to explicitly encourage their drivers to speed, for fear of incurring greater liability. On the other hand, Uber may, as a practical matter, be benefitting from risk-taking drivers without accepting responsibility for the results. In this case, gender disparities may be associated with an avoidable increase in safety risks and deserve to be addressed on that ground, perhaps through tort liability, not antidiscrimination law.

Some of the disparities arise from platform world's ability to evade the legal obligations that ordinarily arise from the employment relationship and tort liability more generally.

C. Gendered Work Patterns

By the height of the manufacturing age, the state had built support for families and communities in large part through the structure of employment. These supports, which included the regulation of wages and hours, subsidization through the tax system of Medicare, retirement contributions and other benefits, employer mandates to provide paid disability accommodations, and discrimination protections, contributed to family security and the standardization of full-time employment.[167]

The platform economy eliminates much of the standardizations and the subsidization that contributed to family and community stability. While the platform economy's greater flexibility and lower barriers to entry help many,

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are-suing-womens-empowerment-organizations-for-gender-discrimination.html [https://perma.cc/DJP2-T257].

165. Cook et al., *supra* note 9, at 3.

166. Stephen J. Dubner, *What Can Uber Teach Us About the Gender Pay Gap?*, FREAKONOMICS (Feb. 6, 2018, 11:59 AM), http://freakonomics.com/podcast/what-can-uber-teach-us-about-the-gender-pay-gap/ [https://perma.cc/RZ3C-HW2H].

167. Although that standardization often worked to the disadvantage of women with children and others who preferred more flexible arrangements, the system itself did not discriminate explicitly.

men and women's typical work patterns are still replicated because of fundamental differences in familial demands.[168]

For example, the same study of Uber that found that men earned more because they drove faster also found that men earned more because of their choices over where and when to drive. Men were more likely to take advantage of surge pricing rates, even if the times were less convenient of the places were father away. Some of these differences may involve motivation; men may have cared more about the extra cash than the women did. But the differences were also likely to involve women's greater family responsibilities, which may have interfered with their ability to drive during rush hour, for example.

More generally, men and women participate in platform world in different ways. As noted above, men are more likely to use platform world to supplement other employment, while women were more likely to use platform jobs as their sole source of income.[169] And women earn just more than a third of what men earn per month when they do side jobs, in part because the men doing them are more likely than the women to be experienced professionals.[170] This may contribute to women's tendency to charge less than men, even for the same jobs, and it may determine the type of jobs they seek.

Nonetheless, the differences may be less than in bricks-and-mortar world. The platform world reduces the privileges that are associated with the ability to be an "ideal-worker" with a stay at home spouse.[171] The promotion ladders as an Uber driver or Etsy seller are limited, although, as in a bricks-and-mortar world, the ability to work long hours is associated with more money.[172]

The larger impact of platform world, however, may come from its overall effect on the labor market and worker protections. Platforms like Uber, TaskRabbit and others increase the labor supply by tapping into people who would like to work more hours. The net effect, as an economist would predict, ought to be to increase the labor supply and lower the price of that labor. Moreover, these workers bear the costs of illness, health insurance, and

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168. *See* Marianne Bertrand, *The Glass Ceiling* 14–15 (Becker Friedman Inst. for Econ. at U. Chi., Working Paper No. 2018-38, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3191467 [https://perma.cc/TJ6H-UL5V] (noting that the difference in home schedules helps explain why women are underrepresented at the upper levels of the earning curve).

169. *See* Roepe, *supra* note 144.

170. *See* Dixon, *supra* note 145.

171. JOAN C. WILLIAMS, RESHAPING THE WORK-FAMILY DEBATE: WHY MEN AND CLASS MATTER 103 (2010).

172. Claudia Goldin, *A Grand Gender Convergence: Its Last Chapter*, 104 AM. ECON. REV. 1091, 1110 (2014).

retirement savings entirely on their own. The platform economy does not offer its gig workers benefits such as health insurance nor are the businesses subject to mandates such as family leave.[173]

This lack of benefits may affect men and women differently depending on their marital status. The lack of health insurance, for example, may not be a concern for workers who have a partner with a family health insurance plan. Nonetheless, the spread of platform world increases the number of workers who will need health insurance from another source, and who are not receiving the public benefits available to employees, such as unemployment insurance. Workers dependent on their platform economy income may feel pressure to work longer or less convenient hours to compensate for the absence of a social safety net. The platform companies have faced some pressure to create better workplaces that provide benefits beyond flexibility. If they don't do so, the government could step in to offer workers the health care and pensions they need.[174] As for the gig workers themselves, those with marketable skills will move on, either into management or into other jobs altogether. But overall, "advantaged people still end up leveraging their advantages."[175]

The net result is likely to have three effects: 1) an increase in overall inequality as platform creators join the ranks of the wealthy; 2) an increased in the gendered wage gap at the top of the economy as men remain more likely to get and retain competitive full-time jobs with benefits; and 3) a decrease in the gendered wage in the bottom half of the economy as men's employment become more precarious. Nonetheless, as platform world moves from experimental to mature, gender differences may diminish—or accelerate.

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173. *See* Dynamex Operations W., Inc. v. Superior Court, 416 P.3d 1, 5 (Cal. 2018) (If workers are classified as employees, and not independent contractors, "the hiring business bears the responsibility of paying federal Social Security and payroll taxes, unemployment insurance taxes and state employment taxes, providing worker's compensation insurance, and . . . complying with numerous state and federal statutes and regulations governing the wages, hours, and working conditions of employees.").

174. Uber offers various discounts, for example, on phones and health plans. In the United Kingdom, it gives sick days and maternity benefits. Margi Murphy, *Uber Bows to Pressure by Giving Drivers Sick Leave and Maternity Pay*, TELEGRAPH (May 23, 2018, 1:00 PM), https://www.telegraph.co.uk/technology/2018/05/23/uber-bows-pressure-giving-drivers-sick-leave-maternity-pay/ [https://perma.cc/L6CM-7S9B].

175. Nathan Heller, *Is the Gig Economy Working*, NEW YORKER (May 15, 2017), http://www.newyorker.com/magazine/2017/05/15/is-the-gig-economy-working [https://perma.cc/EED5-K8PT].

D. Funding and Silicon Valley's Bro Club

The biggest gender differences in platform world involve platform owners and creators rather than workers.[176] First, there are few female engineers developing the algorithms in the first place;[177] the environments in which these programs are generated are "chilly" to women, albeit in subtle ways that may fall outside conventional employment discrimination laws. So too may the quite apparent gendered consequences of platform world addressed in the next section.

Second, venture capital overwhelmingly funds male-run companies; only 2.7% of VC-backed companies had a female CEO.[178] Venture capital funding itself is widely seen as a young boys club in which personal relationships and networking are seen as the key to success.[179] Moreover, studies of the VC process indicate that women performing the same entrepreneurial pitch as men received considerably worse evaluations by professional investors than their otherwise identical male counterparts.[180]

Third, although women have not shied away from entrepreneurship and women-owned businesses grew 68% between 1997 and 2014,[181] the amount of money going to women-owned firms has not increased proportionally with the rise in the numbers of such firms.[182] Consider crowdfunding, which typically raises funds from a large number of small investors over the Internet, thereby attempting to democratize the funding

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176. Employees, perhaps to a greater extent than the gig workers, also face a gendered and racist environment. *E.g.*, Mike Isaac & Katie Benner, *At Uber, New Questions Arise About Executive Behavior*, N.Y. TIMES (July 13, 2018), https://www.nytimes.com/2018/07/13/technology/uber-barney-harford-behavior.html [https://perma.cc/KY7Z-Z87T].

177. *See* Alison T. Wynn & Shelley J. Correll, *Puncturing the Pipeline: Do Technology Companies Alienate Women in Recruiting Sessions?*, 48 SOC. STUD. SCI. 149, 154 (2018).

178. CANDIDA BRUSH ET AL., DIANA REPORT—WOMEN ENTREPRENEURS 2014: BRIDGING THE GENDER GAP IN VENTURE CAPITAL 7 (2014), http://www.babson.edu/media/babson/site-assets/content-assets/about/academics/centres-and-institutes/blank-institute/global-research/diana-project/diana-project-executive-summary-2014.pdf [https://perma.cc/2FHN-MTGQ].

179. Venture capital is overwhelmingly white and male, and 40% of investors have attended Harvard or Stanford. Richard Kerby, *Where Did You Go to School?*, NOTEWORTHY: J. BLOG (July 30, 2018), https://blog.usejournal.com/where-did-you-go-to-school-bde54d846188?stream=top [https://perma.cc/D6L2-TQF9].

180. Jason Greenberg & Ethan Mollick, *Leaning In or Leaning On? Gender, Homophily, and Activism in Crowdfunding* 8 (Wharton U. Pa. Scholarly Commons, Management Paper No. 189, 2015), https://repository.upenn.edu/cgi/viewcontent.cgi?article=1294&context=mgmt_papers [https://perma.cc/9FRF-SHQV].

181. Samantha Zabell, *This Crowdfunding Platform Will Change the Way Women Raise Money*, REAL SIMPLE, https://www.realsimple.com/work-life/life-strategies/inspiration-motivation/karen-cahn-ifundwomen [https://perma.cc/2ELE-FCUY] (last visited Jan. 13, 2019).

182. Lexie Carmon, *Closing the Gender Gap: Women Founders Win on Crowdfunding Platforms*, CNBC (July 20, 2017), https://www.cnbc.com/2017/07/20/why-women-join-the-crowd-gender-gap-in-bank-lending-vc-funds-narrow.html [https://perma.cc/2TLR-VXJU].

process.[183] By soliciting money through online platforms, women can bypass the personal networks that dominate Silicon Valley, and they pitch their companies through impersonal online presentations designed to showcase their strengths—or at least diffuse bias.[184]

And in fact women are more successful than men in securing crowdfunding. Although the percentage of overall funds they receive remains under 10%, women founders on Kickstarter enjoyed "40% greater odds of a successful funding raise, net of other factors."[185] The reason, in part, is that many women funders, who do not ordinarily fund tech projects, do so when women pitch the projects.[186] Nonetheless, women are more reluctant than men to participate in these ventures at all, particularly if they are not entirely confident of their product.[187]

The source of these differences in pursuing engineering, becoming venture capitalists, or starting a crowdfunding effort is unclear.[188] They may correspond to women's socialization into subordinate roles in which they are expected to care for others. They may also reflect gender-based differences in hormonal development. Or they may reflect women's greater wariness about online or commercial transactions more generally.[189] In any case, this gendered behavior assumes disproportionate importance in an economy that attempts to match preferences, traits, and patterns without examining their sources.

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183. *What Is Crowdfunding?*, FUNDABLE, https://www.fundable.com/learn/resources/guides/crowdfunding-guide/what-is-crowdfunding [https://perma.cc/N4TN-TYNU] (last visited Jan. 11, 2019).

184. Greenberg & Mollick, *supra* note 180, at 14–15 (indicating that in at least 70% of projects on Kickstarter, it is possible to tell the gender of the founder even if a picture or full name is not present).

185. *Id.* at 23.

186. *Id.* at 23–25 (male funders do not show similar differences, for either men or women).

187. In the somewhat analogous situation of women applying for jobs, a study at Hewlett Packard showed that "[m]en apply for a job when they meet only 60% of the qualifications, but women apply only if they meet 100% of them." Mohr, *supra* note 70.

188. We take no position on whether there might be some innate tendencies toward particular responses or whether these traits are the product of a millennia of social teachings, because it is most likely a combination of both. *See supra* notes 46–47 and accompanying text.

189. *See, e.g.*, CORDELIA FINE, TESTOSTERONE REX: MYTHS OF SEX, SCIENCE, AND SOCIETY 86–87, 107 (2017) (demonstrating that patterns of behavioral characteristics depend on a mosaic of factors and circumstances other than genetic and hormonal factors determined by sex); Coren Apicella & Johanna Mollerstrom, *Women Do Like to Compete—Against Themselves*, N.Y. TIMES (Feb. 24, 2017), https://www.nytimes.com/2017/02/24/opinion/sunday/women-do-like-to-compete-against-themselves.html [https://perma.cc/7UT4-4SHA] (reviewing a study that found women are just as competitive as men when they were "*choosing to compete against their own past performance*"); *see* Cahn, Carbone & Levit, *supra* note 4, at 486.

The question of whether platform world is oppressive or liberating depends on what happens next—to the workers, other participants, and the economy. Some gig workers may use online platforms to gain needed experiences before they go off on their own; they might seek to become an independent contractor who moves from small jobs on TaskRabbit to building homes or taking on major remodels.[190] Other women may wish to return to full-time conventional employment once their children start school. But many workers may find that they are stuck. Online platforms may bid down the prices that once went to independent construction workers, and the full-time jobs for those whose children have grown may no longer be there.[191]

IV. THE LAWS AROUND PLATFORM WORLD

"Antidiscrimination law [has] historically had two components: a moral one—discrimination is wrong—and a structural one that sought to promote equality for workers collectively . . . ."[192] Both components were particularly effective in targeting the large employers who dominated the manufacturing era. These employers provided "good" jobs that offered career ladders with secure employment, regular raises, and opportunities for advancement. They also standardized working conditions and wages. It was easy to tell if the female worker on the assembly line was paid less for the same work than the male worker.

The legal and economic infrastructure in which this approach flourished is gone, along with the good jobs that offered security and provided benefits, and the standardized work conditions that facilitated the development of

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190. Diane Mulcahy, *Who Wins in the Gig Economy, and Who Loses*, HARV. BUS. REV. (Oct. 27, 2016), https://hbr.org/2016/10/who-wins-in-the-gig-economy-and-who-loses [https://perma.cc/7ZZY-9PCX].

191. *See id.*

192. Cahn, Carbone & Levit, *supra* note 4, at 486. Lawrence Lessig warned, almost two decades ago, that

> [t]he threats to values implicit in the law—threats raised by changes in the architecture of code—are just particular examples of a more general point: that more than law alone enables legal values, and law alone cannot guarantee them. If our objective is a world constituted by these values, then it is as much these other regulators—code, but also norms and the market—that must be addressed.

Lessig, *supra* note 11, at 548–49.

traditional employment discrimination law.[193] In platform world, in contrast, access is rarely the issue; the whole point of online apps is to facilitate access. While women may not necessarily be first movers in the adoption of new technology, and while they may not be equally represented on crowdfunding sites or on eBay, there are no formal barriers keeping them out, and their representation is often higher than in the bricks-and-mortar analog. Moreover, as the Article indicated above, a large part of what the apps do is to eliminate the standardization of bricks-and-mortar world and the midlevel supervisors who oversaw the system.[194] As a practical matter, this means both the mechanisms of antidiscrimination law, such as class actions against large employers and their substantive standards, are practically meaningless.[195]

Other scholars have taken two distinct approaches: finding that the laws are inadequate and difficult to adapt—or that the laws can be adapted, based on their specific statutory or doctrinal constraints. Our approach is that both of these positions are accurate. Existing laws already prohibit some forms of sex discrimination,[196] and they can be adapted to prohibit other forms, but those steps are inadequate to address the larger problems that produce sex disparities in the gig economy. It is virtually impossible for traditional antidiscrimination laws to apply where success involves equal access to insecure gigs that may last no longer than a few hours, or equal pay for work in a context where wages and prices fluctuate on what may be a daily basis. Traditional laws were not created with gigs in mind, and apply only awkwardly to algorithms; in addition, cramped legal interpretations limit both their applicability and their usefulness for platform world.

This Part reviews existing laws applicable to bricks-and-mortar relationships—and finds them wanting as correctives for disparities in platform world.

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193. *See, e.g.*, Cahn, Carbone & Levit, *supra* note 4, at 433–34, 440–42; *see also* Suzanne B. Goldberg, *Discrimination by Comparison*, 120 YALE L.J. 728, 745–48 (2011) (providing a brief history of Title detailing the rise of the "comparator" methodology and arguing against courts' reliance on these evaluative devices); Susan Sturm, *Second Generation Employment Discrimination: A Structural Approach*, 101 COLUM. L. REV. 458, 465 (2001) (detailing the stages of employment discrimination law).

194. *See supra* text accompanying notes 25–33.

195. The various disparities would, however, appear to implicate a number of different laws, including those relating to public accommodations, employment discrimination, and communications decency. The first three are discussed in Datta et al., *supra* note 63, at 102–06 but only in the context of targeted ads. Similarly, Schoenbaum questioned whether employment, housing, and public accommodations laws apply to the gig economy. Schoenbaum, *supra* note 2, at 1058–60.

196. *E.g.*, Moussouris v. Microsoft Corp., No. C15-1483JLR, 2016 WL 4472930, at *8–12 (W.D. Wash. Mar. 7, 2016).

A. Employment Discrimination

Title VII and the Equal Pay Act provide the most obvious source of addressing disparities.[197] The Equal Pay Act requires equal pay for similar work; for example, issues of under- and over-pricing would be handled through an Equal Pay Act case against an employer who paid men and women differently for substantially similar work.[198]

1. The Laws

Title VII protects against additional gender-based disparities. At its most basic level, Title VII bans explicit barriers to hiring. Thus, the first U.S. Supreme Court case to interpret Title VII ruled that the law prohibited a sex-based classification that prohibited hiring mothers (though not fathers) with pre-school age children,[199] and a subsequent case upheld a prohibition on male and female want ads against a First Amendment challenge.[200] Yet when it came to different treatment based on what it deemed individual employee choice—such as becoming pregnant—the Court rejected efforts to consider this as a form of discrimination.[201] The Supreme Court did not view individual choices as a structural obstacle to women's workplace access of a kind with the types of barriers Congress intended Title VII to address.[202]

Nonetheless, once employers moved away from explicitly race- or sex-based classifications, the courts struggled with the question of what proof would establish discriminatory intent. In doing so a primary focus was securing access to what had historically been all white or all male "good jobs."

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197. *See* Barocas & Selbst, *supra* note 2, at 675.

198. 29 U.S.C. § 206(d) (2018).

199. Phillips v. Martin Marietta Corp., 400 U.S. 542, 544–47 (1971) (Marshall, J., concurring) (describing the policy as an explicit gender-based classification).

200. *See* Pittsburgh Press Co. v. Pittsburgh Comm'n on Human Relations, 413 U.S. 376, 391 (1973) (upholding prohibitions of sex-segregated help-wanted advertisements in the face of a First Amendment challenge).

201. Gen. Elec. Co. v. Gilbert, 429 U.S. 125, 136, 145–46 (1976), *superseded by statute*, Pregnancy Discrimination Act of 1978, Pub. L. No. 95-555, 92 Stat. 2076.

202. *Id.* At the time Title VII was passed, only 30% of married mothers with children under the age of eighteen were in the labor force. Sharon R. Cohany & Emy Sok, *Trends in Labor Force Participation of Married Mothers of Infants*, MONTHLY LAB. REV. Feb. 2007, at 9–10, https://www.bls.gov/opub/mlr/2007/02/art2full.pdf [https://perma.cc/XQ6Z-94RD]. The big increases in women's labor force participation would become between 1980 and 2000. *Id.* at 10. Since then, there has been much greater commitment to women's workplace inclusion, and recognition that full inclusion of women in the workplace requires treating pregnancy and family responsibilities as matter of workplace structure. *See, e.g.*, JOAN WILLIAMS, UNBENDING GENDER 90–91 (2000).

In individual cases alleging disparate treatment, the Supreme Court established a burden-shifting framework that required a "comparator."[203] In these cases, courts allowed plaintiffs to prove discrimination where they otherwise lacked sufficient direct evidence of bias by establishing unequal treatment between two employees, creating an inference of discrimination if the employer treated the member of the protected class, such as a woman, less favorably than the employer treated a comparably situated male employee.[204]

Disparate impact law is the second means the Supreme Court developed for addressing the subtler forms of discrimination. Disparate impact analysis differs from disparate treatment cases in that given sufficient proof that an employment practice has a disparate impact on a suspected class, no proof of discriminatory intent is necessary.[205] It is this second form of discrimination on which platform economy scholars have seized.[206] The Supreme Court initially set out the elements of disparate impact doctrine in *Griggs v. Duke Power Co*.[207] During the fifties, the company imposed a high school degree requirement for assignment to the company's better-paid positions, and after Title VII became effective, it required those seeking employment or transfers to pass two written examinations.[208] Only one of the African-Americans in a position to seek reassignment was a high school graduate and whites generally outperformed African-Americans on the tests by three to one.[209] A unanimous Supreme Court found the tests to be discriminatory, and the case set the paradigm for a successful disparate impact suit. Feminists and other antidiscrimination scholars have argued for an expansion of disparate impact theory to reach a variety of employment practices that have a differential impact on protected groups.[210] This has been difficult, as Mike Selmi explains, because the Supreme Court adopted the disparate impact approach "to deal with specific practices, seniority systems and written tests, that were perpetuating past intentional discrimination" and that "the reality has been that the theory has proved an ill fit for any challenge other than to written examinations."[211]

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203. *See, e.g.*, McDonnell Douglas Corp. v. Green, 411 U.S. 792, 804 (1973).

204. Goldberg, *supra* note 193, at 745–46.

205. *See* Michael Selmi, *Was the Disparate Impact Theory a Mistake?*, 53 UCLA L. REV. 701, 705–06 (2006).

206. *E.g.*, Barocas & Selbst, *supra* note 2, at 701.

207. 401 U.S. 424, 431–32 (1971).

208. *Id.* at 427–28.

209. *Id.* at 427 n.2, 430 n.6.

210. Selmi, *supra* note 205, at 704–05.

211. *Id.* at 705.

The Supreme Court has extended disparate impact theory outside of the employment discrimination context to reach housing discrimination under the Fair Housing Act.[212]

2. The Problems with These Laws

While these laws would certainly cover the failure to hire a software engineer because she was a woman, or a gender pay differential based solely on sex, they otherwise have little relevance to platform world. One major problem is that these laws only cover employers and employees, and most of the transactions in platform world occur outside of traditional workplaces. Moreover, disparate treatment theory under Title VII and the Equal Pay Act both require comparators who are treated differently;[213] what platform world does is customize every job and perhaps even every employment relationship, making equal pay analysis meaningless.

First, for the platform world, the employment discrimination issue that has received the most scholarly attention[214] is whether workers are employees. Bills have been introduced into at numerous state legislatures that would keep the status quo, under which platform workers are not employees.[215] The issue is still working its way through the legal system, with most courts finding that they are not employees, but a 2018 California decision suggesting otherwise.[216] Nonetheless, even if Title VII covers ride-sharing drivers, it does not cover independent contractors on TaskRabbit, sellers on eBay, or even the customers themselves.

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212. *See* Tex. Dep't of Hous. & Cmty. Affairs v. Inclusive Cmtys. Project, Inc., 135 S. Ct. 2507, 2525 (2015).

213. Stephanie Bornstein, *Equal Work*, 77 MD. L. REV. 581, 641 (2018).

214. *See* Brishen Rogers, *Employment Rights in the Platform Economy: Getting Back to Basics*, 10 HARV. L. & POL'Y REV. 479, 480–81 (2016).

215. *Id.* at 481.

216. *Id.* at 481–82. *But see* O'Connor v. Uber Techs., Inc., 201 F. Supp. 3d 1110, 1135–36 (N.D. Cal. 2016) (describing proposed but rejected settlement of claims that Uber misclassified drivers as independent contractors to avoid paying business expenses: In the Settlement Agreement, "Uber has agreed to pay $84 million, plus an additional $16 million contingent on an initial public offering (IPO) reaching one-and-a-half times Uber's most recent valuation (*i.e.*, about $93.75 billion)"); Warren, *supra* note 37 (discussing the loss of benefits, stability, and collective power). One California court ruled delivery drivers may be employees; another ruled that Grubhub drivers are not. *Compare* Lawson v. Grubhub, Inc., 302 F. Supp. 3d 1071, 1093 (N.D. Cal. Feb. 8, 2018) (finding that Grubhub drivers are not employees), *with* Dynamex Operations W., Inc. v. Superior Court, 416 P.3d 1, 41–42 (Cal. 2018) (finding that delivery drivers could be considered employees for purposes of class certification). *See also* Lobel, *supra* note 21, at 63–64 (proposing that the employment discrimination laws should apply to all workers, regardless of their classification as independent contractors or employees).

Second, Title VII works well with large organizations that have numerous employees doing roughly the same thing for the same (or what should be the same) pay. It never had much impact on either small employers or workplaces where every employee has a different set of responsibilities. Because platform world customizes every job and perhaps even every work relationship, this renders an Equal Pay or Title VII comparator analysis meaningless. Even if disparate impact remained a viable theory, it would still fail when asserted by independent contractors.[217] And even if platforms like Uber were considered to be employers, proof of discrimination would presumably require something more than a 7% difference in wages due to the fact that male employees drove faster or were more willing to work during peak pricing hours.

B. Additional Sources? Public Accommodations, Anti-Stalking, and Criminal Laws

The federal public accommodations law, by its terms, only covers discrimination based on race, color, religion, and national origin—not sex discrimination—and applies only to hotels, gas stations, restaurants, and entertainment venues, such as theaters and sports arenas.[218] And individual states have similarly limited contours in their individual statutes.[219] While there is some favorable precedent under the California state accommodations statute for considering web platforms as "business establishments,"[220] that Act is limited to intentional discrimination and will not reach claims of disparate impact.[221]

While numerous criminal laws touch on other behaviors occurring in platform world, almost all of these laws were developed for a bricks-and-mortar world and reach only inexactly, if at all, to internet activity. For instance, a federal statute prohibits posting threats to people or stalking them online.[222] However, even assuming the online activity is traceable (which is highly difficult to prove), the statute only reaches extreme instances. For example, federal law prohibits a course of conduct that places a person "in reasonable fear of . . . death . . . or serious bodily injury," or that "would be

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217. Lewis L. Maltby & David C. Yamada, *Beyond "Economic Realities": The Case for Amending Federal Employment Discrimination Laws to Include Independent Contractors*, 38 B.C. L. REV. 239, 256 (1997).

218. 42 U.S.C. § 2000(a) (2018).

219. *See*, *e.g.*, CAL. CIV. CODE § 51 (West 2018).

220. Butler v. Adoption Media, LLC, 486 F. Supp. 2d 1022, 1056 (N.D. Cal. 2007).

221. Greater L.A. Agency on Deafness, Inc. v. Cable News Network, Inc., 742 F.3d 414, 425 (9th Cir. 2014).

222. 18 U.S.C. § 2261A(2) (2018).

reasonably expected to cause substantial emotional distress."[223] In a case that is emblematic of the current anemic application of these laws, *United States v. Cassidy*,[224] the cyberstalking occurred through blog posts and hundreds of Tweets. The court demonstrated an absence of understanding of the purpose of the Act and even less comprehension of how emotional distress occurs when it suggested that the victim "had the ability to protect her 'own sensibilities simply by averting' her eyes from the Defendant's Blog and not looking at, or blocking his Tweets."[225] Cyberbullying statutes are equally unhelpful. Most protect only minors, and assume that the perpetrator is a minor as well.[226] Moving online makes much of the activity anonymous. The anonymity both empowers perpetrators and makes enforcement extraordinarily difficult.

In short, these laws were intended to deal with a different world: the laws that were created in the 1960s and 1970s never envisioned an economy in which employment relationships were premised on individual gigs, with a great degree of worker autonomy. They were not developed at a time when anyone could envision algorithms controlling relationships. Thus, the major laws that might apply to discriminatory practices are significantly limited in their abilities to stretch to reach conduct in platform world. No laws require that men and women performing the same gig services be paid the same.[227] And even outside of the gig economy, there is little protection against customer discrimination.[228] So reviewers can leave whatever reviews they want as often as they'd like, even if it means that women receive fewer reviews or that individuals habitually rate women as less competent than men. The structure—or lack of structure—of the gig allows the discrimination to continue. The vaunted flexibility of platform gig jobs ironically works against extending antidiscrimination law in anything like its current form.

V. THE JURISPRUDENCE OF PLATFORM WORLD: GENDERED SPACES AND SUSPECT PRACTICES

If traditional antidiscrimination law is ill-conceived to address women's needs in platform world, what alternatives exist? We have emphasized in this

223. *Id.*

224. 814 F. Supp. 2d 574, 579 (D. Md. 2011).

225. *Id.* at 585.

226. *See, e.g.*, 18 PA. CONS. STAT. § 2709(a.1) (2018) (protecting against "cyber harassment of a child" and prescribing penalties for juveniles who violate the statute).

227. By contrast, the Equal Pay Act requires employers to pay men and women who are performing substantially similar jobs requiring "equal skill, effort, and responsibility, and which are performed under similar working conditions" equal wages. 29 U.S.C. § 206(d)(1) (2018).

228. *See* Bartlett & Gulati, *supra* note 87, at 240.

Article that it is difficult to know, in most cases, what the sources of gender disparities are—much less to conclude that they necessarily reflect either conscious hostility toward, or unconscious bias against, women. Indeed, where the disparities create the greatest concern, they may not necessarily be connected to discrimination at all. Instead, they may involve factors such as the manipulation of eBay auctions or gender differences in family responsibilities, concerns that differ from the traditional issues in antidiscrimination law.

To deal with this new environment requires the following two overarching approaches. The first requires redefining equality in platform world. At present, the major advances are coming from private action. Lyft, for example, is attempting to recruit more women drivers to compete with Uber. The first section examines how to create environments in which gender equity prompts corrective actions. The second requires reexamining labor in the context of platform world more generally. This section takes up each of these issues in turn.

A. Redefining Equality in Platform World

In the manufacturing era, antidiscrimination law defined equality as the elimination of the gender and race-based barriers to jobs that provided employment security and pathways to advancement. In platform world, few jobs offer that same security and opportunity for promotion. Consequently, equality needs to be redefined in terms of access not so much to the platforms as to the resources necessary to succeed within them. Doing so requires a focus on the legal infrastructure for platform world. That infrastructure should depend less on antidiscrimination provisions than on more general regulatory measures that prompt greater accountability and worker protection.

1. Reporting Requirements Are Critical

As this Article indicates, the data establishing the cause and consequences of gender disparities is at a preliminary stage. Where gender disparities exist, however, they have sometimes prompted action. These changes have occurred for three distinct reasons that hold promise for further reform of platform world.

First, women matter. They have clout as participants, customers, and voters. Moreover, the idea of gender equality matters, both to women and to platform creators. And there are market niches where women can influence

developments. See Uber's competitors.[229] Moving forward might then involve a duty to keep track of the disparities, and investigate their causes, with transparent results.[230] Once this information is available, then decisions not to address the causes of the disparities where the causes involve otherwise illegitimate practices or easily fixable ones, then the platforms should be seen as assuming responsibility for the results.

Second, women are the canaries in the mine. Where gender disparities exist, they almost always indicate issues worth exploring further. For example, while eBay likes to publicize its efforts to combat internet fraud, it publicizes relatively few statistics about that fraud.[231] These issues may affect gender disparities, but without data that connects gender issues and other issues, it is impossible to know.

Third, Silicon Valley algorithms and apps provide solutions perhaps even more than problems. Lyft, for example, is attempting to use targeted ads to increase its percentage of women drivers.[232] With greater information and public pressure, platform world might solve a number of the issues raised in this Article.

Thus, while reporting should be legally required, that requirement need not be tied to other legally mandated actions. Accordingly, we propose new regulations that would require platform companies to keep track of and report such disparities.[233] Such an obligation should not be tied to legal definitions of employment nor even discrimination but rather to the dollar volume generation in connection with the platform.[234] The current lack of regulation means there is no monitoring, no reporting requirements concerning the creation, existence, or cause of gender disparities.

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229. *See, e.g.*, Patrick Sisson, *Safr, a Female-Friendly Uber Alternative Launches with Mission to Empower Women*, CURBED (Apr. 5, 2017), https://www.curbed.com/2017/4/5/15195806/uber-safr-ridehailing-for-women [https://perma.cc/N52W-YCYV].

230. Other countries have imposed various reporting obligations on gender disparities. *E.g.*, *Gender Pay Gap Reporting*: *Overview*, GOV.UK (Feb. 22, 2017), https://www.gov.uk/guidance/gender-pay-gap-reporting-overview [https://perma.cc/63X6-2K7X] (noting employers in the United Kingdom who have "250 or more employees must publish and report specific figures about their gender pay gap").

231. Tims, *supra* note 115.

232. *Taxi Drivers & Chauffeurs*, *supra* note 79.

233. The Equal Employment Opportunity Commission has recognized that eradication of identity-group based disparities begins with monitoring. It is precisely this premise of knowledge acquisition that underlies employer requirements to collect and report EEO-1 data. Agency Information Collection Activities; Notice of Submission for OMB Review, Final Comment Request: Revision of the Employer Information Report (EEO-1), 81 Fed. Reg. 45,479, 45,479 (July 14, 2016). We are suggesting an extension of this practice to platform world.

234. Compare this assertion with Lessig, *supra* note 11, at 535 ("Government, I have claimed, can influence the design of cyberspace in ways that enhance government's ability to regulate.").

2. Establishing Unacceptable Practices

Platform world, which prides itself on open access, involves little express discrimination on the basis of race or sex. Nonetheless, platforms do create gender-identified spaces. For example, eBay tends to involve more men than women, with women constituting only 23% of eBay sellers in the data that became available in 2014.[235] On Etsy, in contrast, 87% of sellers are female.[236] Neither of these results is intentional, and at least part of the reason for the disparity is that women tend to sell less expensive items, and eBay's fees are higher than Etsy's.[237]

To what degree should such gender disparities matter? The answer depends on whether they are the product of restricted access to platforms that offer important advantages; at that point, the practices go from merely expressing different preferences to being intrinsically offensive. To the extent existing studies, for example, indicate that women are more likely than men to produce the crafts typically sold on Etsy, that in itself is not offensive. And to the extent that male sellers prefer the auction format on eBay, that too does not trigger automatic disapproval. If, however, customer bias or harassment—or lack of access to legitimate sources of high-quality jewelry or watches—restricts women's ability to sell on eBay, that ought to be a subject of concern.

The difficult issue is determining the threshold that triggers increased scrutiny. Disparate impact law creates a presumption of discrimination when gender or other disparities exceed 80%.[238] If that criterion were applied to platform world, Etsy and Uber, but not eBay, would be suspect. In light of the relatively early stage of platform world development, this Article does not suggest adoption of a standard equivalent to disparate impact; that is, a

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235. Kricheli-Katz & Regev, *supra* note 118, at 2.

236. Andrea Durkin, *Etsy's Growth Illustrates That Even Local Is Global*, HINRICH FOUNDATION: TRADE VISTAS (Feb. 23, 2018), https://tradevistas.csis.org/etsys-growth-illustrates-even-local-global/ [https://perma.cc/SU3Y-THY5].

237. Emily Belcher, *Etsy vs. eBay for Reselling: How to Choose*, WORK HOME WOMAN, https://www.theworkathomewoman.com/etsy-ebay-reselling/ [https://perma.cc/2HW8-WVNL] (last visited Dec. 23, 2018) (noting eBay's higher fees but greater opportunity for higher prices).

238. EEOC Information on Impact Rule, 29 C.F.R. § 1607.4(D) (2018) ("[S]election rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact."); *see* Kevin Tobia, *Disparate Statistics*, 126 YALE L.J. 2382, 2399 (2017) (discussing the flexible application of the standard); *see also* Timothy M. Snyder, *You're Fired! A Case for Agency Moderation of Machine Data in the Employment Context*, 24 GEO. MASON L. REV. 243, 263 (2016) (discussing the standard and noting that "[t]he White House, EEOC, and FTC have indicated that big data within the employment context will become a growing priority for the Federal government").

standard that creates a presumption of discrimination in effect.[239] Instead, it suggests that when a platform produces a result in which fewer than 20% of its participants as either buyers or sellers are women, this triggers a requirement to generate sufficient data to explain why the disparities exist and whether the practices that produce them involve appropriate practices. Platform creators should be seen as having an obligation to ensure that their platforms do not become vehicles for increasing societal inequality.

3. Considering Tradeoffs

When the mandated reports show gender disparities that do not rise to the level of triggering automatic scrutiny, the factors that produce them should nonetheless be subject to some review. In many cases, this scrutiny need not turn on the issue of gender at all. On Uber, for example, while the gender disparity among its drivers is substantial, the gender disparity is in pay is small—Uber women make 93% of the income of Uber men.[240] Nonetheless, the question should arise whether the factor that contributes to this disparity—driving faster—is desirable. If it is associated with a higher accident rate, it clearly is not; if it simply rewards drivers who drive consistently and safely at the speed limit rather than at a slower rate, it should not be a source of concern. Nonetheless, the creation of a new platform should involve an obligation to determine the existence of gender disparities, and where they exist, to inquire about the causes. If the cause is associated with an inappropriate activity, such as driving faster than the speed limit, Uber should have an obligation to address it. After all, Uber designed the incentives that reward faster driving; it should be responsible for the consequences of those incentives.

This obligation, however, may not necessarily come from the fact of the gender disparities themselves, which as we have noted are relatively small. Instead, it should come from the increased risk Uber encourages its drivers to take. In this case, the problem arises from the presumed lack of tort liability in the platform context.[241]

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239. *See* 29 C.F.R. § 1607.4(D).

240. Kirsten Korosec, *Pay Disparity Between Men and Women Even Exists in the Gig Economy*, FORTUNE (Feb. 6, 2018) http://fortune.com/2018/02/06/uber-gender-pay-gap-study/ [https://perma.cc/Q9RP-XHJK].

241. Agnieszka A. McPeak, *Sharing Tort Liability in the New Sharing Economy*, 49 CONN. L. REV. 171, 174–75 (2016) (addressing the limitations of current tort doctrines and the prospects for them to reach tortious behavior in the sharing economy).

If on the other hand, there are no safety factors that arise from faster driving in this context,[242] then Uber should simply have an obligation to be transparent in its pricing mechanisms allowing individual drivers to reach their own tradeoffs.

Some tradeoffs involve issues of safety or working conditions that may disproportionately affect women. Women, for example, have historically been reluctant to work as taxi drivers because of the safety concerns associated with picking up strangers. Ride sharing platforms have attempted to address safety concerns by rating customers and having payment take place offsite so that their drivers do not have to carry cash. To the extent that gender disparities involve safety concerns, however, that disproportionately affect women, should platform creators have an obligation to respond?

The answer should be yes where it does not place too great a burden. For example, ride sharing platforms could allow drivers to screen passengers for safety issues. In addition, platforms should have an obligation to provide protection from cyberbullying. Platforms like eBay have made it easier for sellers to disguise important aspects of their identity such as gender, and in many circumstances this will be appropriate. Where any employer or platform creator becomes aware that gender identity can lead to harassment, and where it is possible to disguise gender identity,[243] the platforms should have an obligation to consider protections for platform participants, including providing information about the harassment risks and designing adjustments that provide more protection.

B. Labor Market Redesign

Simply insuring women equal access to platform world, however, is likely to be meaningless if all that happens is that the greater inclusion of women increases labor supply in ways that drive down earnings for everyone. Instead, oversight of platform world will eventually require rethinking the relationship between individual responsibility and community support. The missing piece therefore in the discussion of gender in the platform world is the role of the state in meeting the information age's needs for fairness.

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242. *See, e.g.*, *Gig Economy Pressures Make Drivers 'More Likely to Crash,'* BUS. TELEGRAPH (Aug. 20, 2018), https://www.businesstelegraph.co.uk/gig-economy-pressures-make-drivers-more-likely-to-crash/ [https://perma.cc/GH7Y-SUXB] ("Research from University College London (UCL) indicated 42% of 'gig-economy' couriers and taxi drivers reported vehicle damage because of a collision. Close to half admitted time pressure could make them break the speed limit.").

243. Such techniques of gender-blindness exist in the employment setting. *See, e.g.*, Schoenbaum, *supra* note 109, at 32.

Without a more robust state effort to define and enforce fairness in the new age, the result is likely to be even greater gender disparities. Yet the state effort must be calibrated carefully.[244]

Concern should be devoted to where collective action is needed. Current law, for example, which requires employers to contribute to Social Security, imposes collective responsibility through higher labor and consumer prices for retirement security. Federal and state governments have acted through employers to insure the availability of a host of government benefits including subsidized health insurance,[245] pension benefits, and in some cases paid family leave.[246] Today, platform creators enjoy a competitive advantage over traditional employers in their ability to shift costs back on their workers. Regulatory choices going forward must consider the uneven playing field between types of activities and the security of workers' interests more generally.

Platform world is likely to expand as even more of our lives are lived and managed through online programs. Traditional employers, for example, may wish to use platform type apps to turn more of their workers into independent contractors, or temporary or contingent workers.[247] In addition, many workers would like the flexibility to be able to schedule working hours in ways that avoid the strictures of a forty-hour work week. The same type of apps that today create platforms for income-generating opportunities outside of traditional companies could be used to supply workers for an expanding range of activities within companies. The line between employees, independent contractors, and temporary and part-time workers could be further blurred. The significance of these developments for workers generally and women, in particular, depends less on specific provisions addressing gender equality and more on labor market conditions. These issues include:

Labor market policies. The combination of mechanization, globalization and neoliberal economic policies has contributed to slack labor markets with little pressure to increase wages. Platform world contributes to that as it takes

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244. Mayer-Schönberger & Ramge counsel against seeking to "eliminate human biases regardless of what an individual desires" with a single centralized system that would nudge people in the same direction. MAYER-SCHÖNBERGER & RAMGE, *supra* note 41, at 178.

245. Carbone & Levit, *supra* note 37, at 1020–25.

246. EILEEN APPELBAUM & RUTH MILKMAN, LEAVES THAT PAY: EMPLOYER AND WORKER EXPERIENCES WITH PAID FAMILY LEAVE IN CALIFORNIA 2 (2017), http://paidfamilyleave.org/pdf/leaves_that_pay.pdf [https://perma.cc/69R7-F2MH] (describing California legislation and policies).

247. Andrew Karpie, *New Study Dissects Organizations' Ongoing and Future Use of Contingent Workforce*, SPEND MATTERS (May 12, 2017, 6:00 AM), http://spendmatters.com/2017/05/12/new-study-dissects-organizations-ongoing-future-use-contingent-workforce/ [https://perma.cc/L683-Z5XE] (indicating that 90% of companies already use contingent workers to some degree and over half are planning to expand their use of such workers).

advantage of the availability of unemployed or underemployed workers who would like to earn additional income. Workers with family responsibilities may be at a particular disadvantage because of their lack of other opportunities. Labor market policies that contributed to a full employment economy would increase the price of labor generally, increasing prices on platform world without more direct regulation.

Health care and pension benefits. The growth of a contingent labor market, both within and outside platform world, makes reliance on employment for the delivery of these important benefits untenable. The largest tax subsidy in the federal budget goes to employer-provided health insurance, which means that platform workers do not enjoy access to one of the biggest federal subsidies. Creating universal access to health insurance would particularly benefit single mothers, and make it easier for more workers to participate in the platform economy.

Universal preschool and child care subsidies. Platform world, by making it easier for those with children to generate income, may nonetheless encourage the marginalization of those with family responsibilities. Indeed, the risk will be that more primary caretakers turn to platform world rather than full-time employment to generate income, lessening the pressure on traditional employers to adopt more family friendly practices. A comprehensive approach to family needs that includes universal free early childhood education and greater availability to subsidized, high quality child care might lessen the marginalization of those who seek income generating opportunities in platform world as the only option that accommodates caretaking responsibilities.

Education and training. Platform world depends on the existence of workers with needed skills, but unlike traditional employment, makes no provision for training. Moreover, with changes in demand for particular activities, platform workers bear the entire cost of income volatility,[248] and the potential need to update skills or transfer them to new types of activities. Greater opportunities for retraining or returning to school, perhaps through community colleges, might give workers greater flexibility and resilience.

Unemployment compensation. Piecework brings with it additional risks shouldered by workers: money management, career training, and seeking recompense for jobs performed—all of which bring additional costs, unpaid

248. *Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility*, JPMORGAN CHASE & CO. (Feb. 2016), https://www.jpmorganchase.com/corporate/institute/report-paychecks-paydays-and-the-online-platform-economy.htm [https://perma.cc/N67B-97JZ].

labor costs, and risks.[249] Platform world places these burdens entirely on the individual. And, indeed, the very idea of unemployment compensation has little place in platform world. Accordingly, some form of minimum income should be considered to provide any hope of greater individual and family security.[250]

In short, the complications raised by employment insecurity, ranging from lack of economic self-sufficiency to health care to retirement, cannot be resolved by looking to antidiscrimination law. Nonetheless, by revealing structural problems in the architecture of the platform world, an examination of gender disparities provides the basis for fundamental changes in regulation.[251] That regulation will ultimately need to address the question of whether the future lies with the more contingent nature of platform transactions or whether the economy will need to recreate the more permanent institutions of earlier ages.

VI. CONCLUSION

The platform world is truly the Wild West when it comes to the lack of laws and norms. It is an unregulated landscape. The bits of regulation that are starting to develop are focused on specific, narrow segments of the platform, and legal approaches to gender disparities provide a similarly piecemeal, only partial approach.

Reliance solely on norms or market discipline will, as has been shown, result in some minor changes.[252] But the companies themselves have every impulse to simply expand their reach of customers and their price points and no impulse to self-regulate; and the technologies keep improving what they do, meaning new laws have to be flexible as well. Automating information

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249. Ruth Berins Collier, V.B. Dubal & Christopher Carter, *Labor Platforms and Gig Work: The Failure to Regulate* 5 (Inst. Res. Labor & Emp't., Working Paper No. 106-17, 2017), http://www.irle.berkeley.edu/files/2017/Labor-Platforms-and-Gig-Work.pdf [https://perma.cc/K4MW-S32K].

250. *See* ANNIE LOWREY, GIVE PEOPLE MONEY: HOW A UNIVERSAL BASIC INCOME WOULD END POVERTY, REVOLUTIONIZE WORK, AND REMAKE THE WORLD 5 (2018); ALISSA QUART, SQUEEZED: WHY OUR FAMILIES CAN'T AFFORD AMERICA 225–48 (2018); *see also* Rosalind Dixon & Julie Suk, *Liberal Constitutionalism and Economic Inequality*, 85 U. CHI. L. REV. 369, 375 (2018) (noting that "many constitutional democracies . . . are actively considering, and passing, measures to increase investments in education and training, raise the minimum wage, guarantee a universal basic income").

251. *See* Frank Pasquale, *Two Narratives of Platform Capitalism*, 35 YALE L. & POL'Y REV. 309, 312 (2016).

252. *See generally* Lessig, *supra* note 11 (discussing the limits and benefits of the various legal and nonlegal approaches).

should not mean disavowing responsibility for building in disparities.[253] The pace and source of innovation further complicates oversight. The furthest reaching innovations tend to emerge from start-ups that experience intense pressure to grow overnight or shut their doors.[254] Large companies, like Amazon or Facebook, which often purchase the most successful innovations, enjoy greater insulation from market pressures and (as Facebook discovered) greater susceptibility to public outcries. But the public (and sometimes even the companies themselves) may not become aware of disparities or abuses until they have been deeply embedded in the operation of a platform. Even then, the challenges of regulating AI technologies that keep changing and improving means that future regulation must be potentially infinitely adaptable as well.[255]

Silicon Valley entrepreneurs celebrate the incorporation of design principles into the infrastructure of innovation. They advocate testing, adjustment, and iteration in the creation of new programs. They increasingly incorporate artificial intelligence to assist in these adjustments. In the process, they make conscious decisions about factors such as whether the personal assistant on iPhones (Siri or Alexa but not Bob or George) should have a male or a female voice, and they base these decisions on the reactions of their targeted audiences. As these companies acquire the power to create these infrastructures, and as they celebrate the process of empathy, observation, testing, adaptation, and iteration, they should also acquire a greater obligation to consider whether the programs they design enshrine discrimination in the processes they create. After all, if Apple is busy spending enormous sums in judging whether consumers like Alexa better than Bob, it should have an obligation to ensure that real-life women are not losing out to their male colleagues because of the name the company instructs women to put on the bottom of their emails.

On the other hand, sensationalist headlines that shout out that women are losing in the gig economy merit much more nuanced examination to find out the source of those disparities.[256] Where it is men driving faster or having

253. SAFIYA UMOJA NOBLE, ALGORITHMS OF OPPRESSION: HOW SEARCH ENGINES REINFORCE RACISM 148 (2018).

254. *See* Schoenbaum, *supra* note 2, at 1061–63. Companies resist course corrections that threaten the perception of success, leaving little room for self-regulation.

255. Jonathan Kay, *How Do You Regulate a Self-Improving Algorithm?*, ATLANTIC (Oct. 25, 2017), https://www.theatlantic.com/technology/archive/2017/10/algorithms-future-of-health-care/543825/ [https://perma.cc/B3TW-56JK].

256. Lydia Depillis, *Even in the Gig Economy, Women Earn Less than Men*, KSAT12 (July 5, 2018, 5:53 AM), https://www.ksat.com/money/even-in-the-gig-economy-women-earn-less-than-men [https://perma.cc/2AQL-XMY9]. This CNN Money article highlights findings from a

worked on a particular platform for longer, the proposed regulatory response is not necessarily to sue the platform for pay discrimination but to enforce speeding laws, to hold the company liable in tort, and to ensure that women receive benefits for parental responsibilities. Or, where there is sexual harassment and discrimination at the parent companies, then shareholder derivative actions provide an additional form of monitoring and potential remedies.[257]

Indeed, as tech companies design new, self-contained platforms that restructure employment, shopping, our virtual and real worlds, there are critical questions about their obligations to test their designs and adjust them so that they do not create or perpetuate gender and other forms of inequality. As we enter the fourth industrial revolution, the merging of digital and human lives,[258] existing antidiscrimination laws and constitutional doctrines remain relevant, but they do not address a significant portion of the disparities in the platform world. The platform world replicates the norms and patterns of gender disparities in the bricks-and-mortar world. Yet many of these disparities are not actionable under conventional doctrines and show instead the need to think just how this new world should develop.[259]

Because the current body of doctrinal law is cramped and limited with respect to platform world, in this Article, we have discussed a framework to shift the thinking, to create a new set of ethics for regulating platform world. We suggest that moving forward requires acknowledging that not all disparities are, or should be, actionable. On the other hand, developers must be attentive to how their algorithms and business practices create gender disparities. Accordingly, the law must confront the trade-offs in counteracting bias. Equal treatment may conflict with equal opportunity,

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recent study by Stanford University and the University of Chicago that found a 7% hourly earnings gap between male and female drivers on Uber. *Id.* Nearly half of this gap is attributed to men driving faster than women, enabling them to complete more rides. *Id.* Researchers also attribute the gap to longer use of the app, awareness of productivity tips, and driving in the most lucrative areas (which are often high crime). *Id.*

257. *See, e.g.*, Martin v. Page, No. 19CIV00164 (Super. Ct. Cal.) (filed Jan. 10, 2019); Cyrus Farivar, *Alphabet Board Sued over Massive Payout to Android Creator, Among Others*, ARSTECHNICA (Jan. 11, 2019), https://arstechnica.com/tech-policy/2019/01/alphabet-board-sued-over-massive-payout-to-android-creator-among-others/ [https://perma.cc/5GXK-YE4N].

258. *See* Elizabeth Schulze, *Everything You Need to Know About the Fourth Industrial Revolution*, CNBC (Jan. 17, 2019), https://www.cnbc.com/2019/01/16/fourth-industrial-revolution-explained-davos-2019.html [https://web.archive.org/web/20190117101420/https://www.cnbc.com/2019/01/16/fourth-industrial-revolution-explained-davos-2019.html].

259. *See also* Stephanie Bornstein, *Antidiscriminatory Algorithms*, 70 ALA. L. REV. 519, 526 (2018) ("[S]ome algorithmic discrimination may be challenged as disparate treatment using Title VII's stereotype theory of liability."); Pauline Kim & Sharion Scott, *Discrimination in Online Employment Recruiting*, 63 ST. LOUIS U. L.J. (forthcoming 2019) (suggesting that while existing doctrine covers the most "egregious practices," their additional scope is less clear).

efficiency may conflict with regulation. A new framework considers the competing benefits and drawbacks of various approaches as it provides advice on how to counter bias. Our approach also recommends strengthening research.

Ultimately, we argue that gender disparities show the need for a fundamental rethinking of how to protect workers in this new world.[260] This goes beyond merely adapting conventional employment discrimination and public accommodations laws and focuses on whether workers have adequate health care, protection against fraud, family leave benefits, and retirement security. The gender disparities that we have identified point directly to other, more systemic difficulties with the very idea of platform world—the absence of responsibility for the provision of basic necessities. Some of these necessities have been funneled to certain classes of individuals through jobs. The upheaval of the traditional view of employment ultimately raises questions about the reinvention of the state.

As the legal system faces the challenges of our new data-driven world, there is an opportunity to ensure that bricks-and-mortar gender disparities are not replicated, much less magnified. The source of this opportunity, and the justification for developing new legal obligations, is not traditional antidiscrimination law, however. It instead involves ensuring responsibility for what might otherwise be a tragedy of the commons, that is, what happens in a shared-resource system when individual users take actions based solely on their own self-interest and behave contrary to the common good of all users by spoiling that resource.[261] In other words, the new platform companies focus solely on profit, evade existing regulations designed to protect employees through the structure of their businesses, and rely on collective resources—government funding, family resources accumulated by other family members (in couples, one person may have employer-provided health care that the other accesses), even internet access—in a way that depletes those resources.

The argument should not be whether the disparities are the product of intentional discrimination in the same sense as Title VII. Instead, the question is whether those who disrupt traditional practices and create new ones for their own benefit assume responsibility for what they produce. We argue that the answer is yes—in accordance with the arguments made in this Article. Those who produce "discrimination by design," whether that design involves

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260. *See* Warren, *supra* note 37 ("[P]olicy—rules and regulations— . . . will determine whether workers have a meaningful opportunity to share in that new wealth.").

261. *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244–45 (1968), http://science.sciencemag.org/content/sci/162/3859/1243.full.pdf [https://perma.cc/3GA2-HDGE].

deliberately creating algorithms that target by gender, or looking the other way as gender disparities arise by accent, are responsible for the products of their creations and have an obligation to document them, evaluate them, and address them, albeit with remedies outside of antidiscrimination law. Addressing them will not be easy, there may be unintended consequences,[262] but a commitment to regulation that ensures products and designs that don't reflect existing biases, even when that affects the bottom line, requires a changed approach.

Having combed through the evidence with respect to the gender disparities that other scholars find in platform world, we conclude that much of it is not discrimination in the traditional sense of exclusion, or even bias, in hiring or promotion. While there are recognizable forms of employment discrimination within the companies, while women may disguise their names to be gender-neutral and receive lower ratings, the reasons are not traceable to bias at the core of contemporary antidiscrimination law. They instead result from the lack of regulation, the lack of safety protections, and social norms. Nonetheless, even though the evidence does not always support findings of traditional forms of sex discrimination—and also shows that platform world can give women more equality than bricks-and-mortar world—it points to the larger problems in regulating a new economy and protecting workers.

262. For example, if task-selling or ride-sharing companies allow screening, this may make women feel more comfortable —but might also result in discrimination against some groups.