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"Against Data Driven Price Discrimination"

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Against Data Driven Price Discrimination

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Abstract

Online marketplaces and retailers don't always show buyers the best deal for what they want to buy. Rather, they raise the price for those willing to pay more (and lower prices for those who would otherwise not buy). Many forms of this practice, known as price discrimination, are widely considered *prima facie* justifiable. In this paper, I present a novel account of why *data driven* price discrimination is objectionable per se. Data driven price discrimination involves setting prices based on consumer footprints. This, I argue, attaches a cost to every (online) activity imaginable, disincentivizes all manner of online activity, and makes it rational for consumers to be paranoid about the potential monetary repercussions of whatever they do or say online. This rational paranoia diminishes our cognitive control and undermines the capacity to engage freely in many of the activities essential to a functioning liberal society, including the pursuit of knowledge and the liberty of action and expression.

Introduction

Online marketplaces and retailers don't always show buyers the best deal for what they want to buy. Rather, they raise the price for those willing to pay more (and lower prices for those who would otherwise not buy). This is often done to maximize profits, though sometimes it is also done to make certain goods accessible for a greater share of the population. Many forms of this practice, known as price discrimination, are widely considered *prima facie* justifiable. New technologies have increased the prevalence and sensitivity of price discrimination, making it possible for companies to raise or lower prices based on consumer footprints. And

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this version of price discrimination, which I call data driven price discrimination, has drawn public ire.[1]

Studies suggest there is widespread moral outrage about online price discrimination.[2] Echoing this outrage, scholars have argued that the practice may, in some instances, deceive consumers,[3] perpetuate inequality,[4] or amount to otherwise objectionable conduct.[5] But none

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[1] The practice goes by other names, including "dynamic pricing," "personalized pricing," "algorithmic pricing," and "surveillance pricing." Some authors use these labels to refer to slightly different practices (for instance, Krugman 2000 seems to use the term "dynamic pricing" to refer to both online price discrimination and a practice that is inclusive of sellers simply changing prices at random and without personalizing them). Elsewhere, dynamic pricing refers to adjustment of price based on supply and demand but not their personalization. For an excellent normative evaluation of dynamic pricing, see Ramsi A. Woodcock (2020), *The Efficient Queue and the Case Against Dynamic Pricing*, 105 IOWA L. REV. 1759.

[2] Joseph Turow, Lauren Feldman, and Kimberly Meltzer, *Open to Exploitation: American Shoppers Online and Offline*, ANNENBERG PUBLIC POLICY CENTER OF THE UNIVERSITY OF PENNSYLVANIA (2005) (Finding that in a nationally representative sample, 87% of Americans disagreed with the statement, "it's OK if an online store I use charges people different prices for the same products during the same hour."). Poort, Joost, and Frederik Zuiderveen Borgesius (2019) *Does Everyone Have A Price? Understanding People's Attitude Towards Online And Online Price Discrimination*, INTERNET POLICY REVIEW, 8(1) (based on a sample of people from the Netherlands, finding that "[a]n overwhelming majority considers online price discrimination unacceptable and unfair"). See also *Consumers Hate 'Price Discrimination,' but They Sure Love a Discount* THE NEW YORK TIMES, April 6, 2024 https://www.nytimes.com/2024/04/06/business/economy/wendys-company-price-discrimination.html.

[3] Van Loo, Rory and Nikita Aggarwal (2024), *Amazon's Pricing Paradox* 37 HARVARD JOURNAL OF LAW & TECHNOLOGY 1 (arguing that not showing consumers their best deal is deceptive and in violation of consumer protection law).

[4] Rory Van Loo, *Broadening Consumer Law: Competition, Protection, and Distribution*, 95 NOTRE DAME L. REV. 211, 215, 241 (2019) (observing that "companies' ability to engage in behavioral overcharge has increased significantly due to sophisticated pricing algorithms and quantitative insights into consumers" and concluding that such practices can contribute significantly to economic inequality). Oren Bar-Gill, Algorithmic Price Discrimination When Demand is a Function of Both Preferences and (Mis)perceptions, 86 U. CHI. L. REV. 217, 236 (2019) (arguing that whereas the distributive costs of price discrimination can be offset by economic efficiency in traditional cases of price discrimination, such costs cause net welfare loss in algorithmic price discrimination because economic efficiency cannot be guaranteed).

[5] Many of these concerns are raised by Akiva Miller (2014), "What Do We Worry About When We Worry About Price Discrimination? The Law and Ethics of Using Personal Information for Pricing," 19 J. Tech. L. & Pol'y 41.

of these accounts have identified what is wrong with data driven price discrimination per se. This paper fills that gap.

What makes data driven price discrimination itself objectionable is that it sets prices based on consumer footprints. This, I argue, attaches a cost to every (online) activity imaginable, disincentivizes all manner of online activity, and makes it rational for consumers to be wary about the potential monetary repercussions of whatever they do or say online. This rational distrust diminishes our cognitive control and undermines the capacity to engage freely in many of the activities essential to a functioning liberal society. It interferes with the pursuit of knowledge and the liberty of action and expression. It also encourages reclusiveness and inauthenticity, which can jeopardize key values of a liberal society. In this manner, data driven price discrimination can diminish agency *en masse* and create trends that are incompatible with key ideals of a liberal and democratic society.

The paper proceeds as follows: in section 1, I briefly discuss price discrimination in economic theory. In section 2, I define *data driven* price discrimination in terms of reliance on consumers' online footprints to personalize prices. In section 3, I present my own view. In section 4, I juxtapose data driven price discrimination to a benign form of activity-based price discrimination. In section 5, I contrast my view to the ones in the existing literature. In section 6, I close with a brief reflection on areas for further research.

1. Price Discrimination in Economic Theory

Three economic conditions are necessary for a seller to be able to practice price discrimination.[6] First, the seller must have some market power, meaning that it must have some ability to control the price despite limitations imposed by market competition. Price

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[6] Hal R. Varian1989, "Chapter 10 Price discrimination," in THE HANDBOOK OF INDUSTRIAL ORGANIZATION, Volume 1, eds, Richard Schmalensee and Robert Willig. Elsevier: 597-654 at 599. DOI:10.1016/S1573-448X (89)01013-7

discrimination is most practicable for a monopoly, but it is also possible for firms with loyal consumer bases or large market shares. In today's online markets, online retailers such as Amazon already enjoy enough market power to exercise price discrimination.[7]

Second, the seller must have some ability to sort consumers to find those who are willing to pay more than the market price. In practice, this means that firms must either have information about consumer preferences or an ability to induce consumers to self-select into price-categories. In online practices of our interest, firms can predict consumer preferences with exceptional accuracy based on data collected from them, including their prior market behavior.

Third, the seller must be able to prevent resale and arbitrage, since a price discrimination strategy will fail if those who receive a lower price can resell the item to those who might otherwise pay more and thereby, to undercut the would-be price discriminating original seller. This makes it difficult to price discriminate on goods that are easily tradable.[8] Where transaction costs are high or where the good is specific to the individual (e.g., flight tickets), price discrimination is easier to implement. For simplicity, I shall limit the scope of analysis to cases where sellers can circumvent would-be arbitragers.

The most distinctive of these conditions to price discrimination is the second: the sellers' ability to price discriminate depends on their ability to identify which consumers are willing to pay a higher price. Sellers can achieve this at three different degrees, as categorized by Pigou.[9]

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[7] Van Loo (2019), *supra note* 4.

[8] For the suggestion that preventing competitors from arbitraging amounts to monopolization, see Ramsi A. Woodcock (2019) *Personalized Pricing as Monopolization*, 51 CONNECTICUT LAW REVIEW 311. https://digitalcommons.lib.uconn.edu/law_review/415

[9] A. C. Pigou 1920. THE ECONOMICS OF WELFARE. London: Macmillan & Co.

First-degree price discrimination requires the most information about the consumer. With accurate information about the consumer (and some degree of market power or friction), a seller can charge exactly the price that each consumer would be maximally willing to pay. This is the most severe price discrimination since every buyer could be charged a different price. This form of price discrimination will achieve economically efficient allocation.

Second-degree price discrimination occurs when the seller does not have an available cache of information but acts strategically to convince buyers to sort themselves. In second-degree price discrimination, the seller offers products in different quantities or qualities in an effort to force consumers to identify themselves. Consumers with lower willingness to pay will accept the inconvenience of buying in bulk or buying a product of a shoddier quality, while others will be willing to pay a higher price to avoid these inconveniences. Second-degree price discrimination will not achieve overall efficiency, but it will often increase efficiency relative to a monopolist that charges a single price.

Third-degree price discrimination occurs where different groups of consumers are categorically charged a different price for the same good. A straightforward example is student pricing, where students are charged a lower price by virtue of their status as students. Groups can be segregated by time (peak and off-peak), geography (resident discounts), or observable characteristics, including senior discounts, student prices, and youth fares with the idea that members of these groups will on average have different willingness to pay. This will not achieve overall efficiency except in the limiting case, but it could improve efficiency from a standard monopoly outcome.[10] For example, in the case of student pricing, it is easy to imagine a situation where the seller makes greater profits, students get the benefit of the service, and

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[10] Aguirre, Iñaki, Simon Cowan, and John Vickers. 2010. *Monopoly Price Discrimination and Demand Curvature*, AMERICAN ECONOMIC REVIEW 100 (4): 1601–15. DOI: 10.1257/aer.100.4.1601.

other buyers are unaffected. By drawing in those who would otherwise be excluded, it is possible for third-degree price discrimination to benefit some without costs to others.

2. Data Driven Price Discrimination

Recent development of data tools to track and analyze customer behavior facilitates price discrimination in a way that doesn't neatly fit the three degrees just discussed. Big data helps firms to gather information on consumers. More data gives firms the opportunity to track behavioral patterns to determine which consumers may have a higher willingness to pay, then to adjust prices and available options accordingly. It also allows them to increase sales by lowering their prices just for those who would not otherwise buy. These developments have progressively enabled many online sellers to price discriminate.

Examining sixteen top e-commerce websites covering general retail, hotel, and rental car markets, Hannak et al. found evidence of price discrimination or price steering among eight of the sites.[11] In their study, "price discrimination" occurs when users are shown inconsistent prices for the same product, while "price steering" occurs when sites generate different search results for the same query in an effort to match certain users to more expensive products. Mikians, et al. find price discrimination on the order of a ten to thirty percent price disparity among online consumers based on search behaviors, with isolated cases ranging to double the price for some consumers.[12]

Under data driven price discrimination, consumers are charged different prices using algorithmic predictions of their willingness to pay based on past online actions. This is

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[11] Aniko Hannak, Gary Soeller, David Lazer, Alan Mislove, Christo Wilson, *Measuring Price Discrimination and Steering on E-Commerce Web Sites*, PROCEEDINGS OF THE 2014 CONFERENCE ON INTERNET MEASUREMENT CONFERENCE (2014): 305–18.

[12] Jakub Mikians, László Gyarmati, Vijay Erramilli, Nikolaos Laotaris, *Crowd-assisted Search for Price Discrimination in E-Commerce: First results*, PROCEEDINGS OF THE NINTH ACM CONFERENCE ON EMERGING NETWORKING EXPERIMENTS AND TECHNOLOGIES (2013): 1–6.

sometimes described as first-degree price discrimination.[13] However, data driven technology blurs the boundaries of first- and third-degree price discrimination. In a dystopian technological future, sellers may be able to charge every buyer the most they are willing to pay (in line with first-degree price discrimination). With the right mix of advancements in AI technology and further erosion of online privacy rights, this dystopia may one day become reality.[14] With current technology however, sellers can realistically only group buyers into price profiles, which can be much more granulated than traditional categories used in third-degree price discrimination. Perhaps, some degree of first-degree price discrimination already exists.[15] Still, I shall proceed by regarding data driven price discrimination as enhanced third-degree price discrimination.

It is not too important if data driven price discrimination is best described in terms of first- or third-degree price discrimination (or something else). What is more important is whether data driven price discrimination can be distinguished from conventional forms of third-degree price discrimination in normatively relevant ways. The latter also involves setting prices based on personal information, such as immutable characteristics (e.g., age for senior or youth discounts) or on high-stakes past actions (e.g., military or student discounts). Data driven price discrimination involves collecting data to either similarly categorize buyers (e.g., customers who did x are students) or set prices directly (e.g., customers who did x also bought y at this or that price). As I will discuss in section IV, using personal information to categorize buyers or set their prices isn't inherently problematic. What makes data driven price

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[13] *See* e.g., Bar-Gill (2019) *supra note* 4; Zephyr Teachout, Algorithmic Personalized Wages, 51 Pol. & Soc'y (2023) Available at: https://ir.lawnet.fordham.edu/faculty_scholarship/1276 (2023).

[14] But *see* Herbert Hovenkamp (2011) Federal Antitrust Policy: The Law of Competition and Its Practice, 4th ed. (St. Paul, MN: West) at 769 (writing that first-degree price discrimination "never exists in the real world but is a good tool for analysis.").

[15] See Teachout (2023) *supra note* 13 at 439 (writing "The consensus is that some first-degree price discrimination exists, it is not totally clear how much, and it is likely to grow—how much is still a matter of contention").

discrimination uniquely problematic is that it involves tracking online activity and much more granular price profiles. It is this combination of factors involved in data driven price discrimination that I shall focus on.[16]

3. Why *Data Driven* Price Discrimination is Intrinsically Objectionable

When asking whether tracking consumers' actions to set personalized prices is *in principle* objectionable, we should consider not only those whom it will affect, but also the broader implications of its ratification. As T. M. Scanlon points out, when we evaluate whether actions are permissible in principle, we must take into account both "the consequences of general performance or nonperformance of such actions and of the other implications (for both agents and others) of having agents be licensed and directed to think in the way that that principle requires."[17] This is not only because "widespread performance of acts of a given kind can have very different effects from isolated individual instances," but also because "the general authorization or prohibition of a class of actions" can have significance in terms of how people think or organize their lives.[18] General authorizations and prohibitions figure in our practical reasoning. They affect what sorts of life plans we consider for ourselves and the situations we prepare to face.

Thus, to evaluate a practice like data driven price discrimination, we must evaluate whether people can reasonably object to this change in how they must plan their lives. Specifically, this means considering the significance of generally authorizing sellers to gather the consumers' personal information from their online footprint and to personalize prices based

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[16] Very blunt price discrimination based on tracking online activity may not generate the problems I shall discuss, because it is the effort at granularity that generates the disincentives to speak and share. If membership in the handful of categories traditionally used to create different pricing tiers were easily discernible were the only ones used in data driven price discrimination, then one's further revelations would not be disincentivized given they presumably won't make a difference in how one is categorized, hence no difference to the prices one is charged.

[17] T. M. Scanlon (1998) WHAT WE OWE TO EACH OTHER. Harvard University Press: 202-03.

[18] *Id* at 203.

on them. We must consider the foreseeable rational stances of the involved parties in the aftermath of the ratification and adoption of a market where everyone's prices are calculated using their online footprint and examine whether those stances are reasonably rejectable.

Where sellers gather the information necessary for price discrimination from consumer behavior, consumers have reason to associate their behavior with potential increased costs for important goods. This means that it would be reasonable for them to anticipate that each of their behaviors could potentially be penalized. The information gathered is based on their online footprint: the views they express on social media, questions they search, goods they purchase, or places they visit, etc. Each potentially reveals their willingness to pay extra for at least some commodities. Thus, before taking any action at all, they must account for the increased price of milk that may follow as a result.

Suppose one day I get curious to look up Czechia on the map. The worry isn't only that after doing so, travel sites may raise my prices. Instead, the worry is that it would be reasonable for me to wonder what sellers would correctly or incorrectly infer about me from this inquiry and how such inferences could potentially affect my price of various goods. Perhaps they would infer that I am an immigrant with family ties to Czechia. Or they'd think that I am a historian or a social scientist. They could think I am a student. Or a businessman. This or that inference could affect this or that price. "But wait a minute," I think to myself. "Yesterday, I also read something about Georgia, not the state but the country." Is the country of Georgia, I think to myself, in any way related to Czechia? Too bad, I can't find the answer to that question either. But if they are related, I continue to wonder, what would searching both in such proximity reveal about me that I don't know myself? In short, it would now be reasonable for me to try to understand, evade, mislead, or outsmart this gamified system of pricing instead of actually doing the things I wanted to do, like looking up Czechia on the map. The problem is that this kind of rational paranoia is justified if our aim is to avoid paying higher prices.

What's more, our digital footprint isn't limited to what we *publicly* do or say online. Just like our search inquiries, what we read, what we say in private conversations, and what we write in our personal diaries, may be used by online platforms to personalize our prices. Our online footprint isn't even limited to *content* we generate. What browser tabs we passively keep open, how long we spend on each page, how long we spend online or offline, our total screen time, what time of day do we undertake various tasks and where, what devices we do or don't use—and the list goes on.[19] Even our eye movements, mouse movements, and keystrokes can be recorded.[20] All this information can be gathered even when we are offline and communicated to platforms when we go online again. All this information can also be combined with information available offline.[21]

The worry doesn't stop with a buyer's own prices. Rather, buyers would also be reasonable to worry about how their actions could affect *others*. Suppose it is you who solicits book recommendations, not me. In considering whether to recommend you any books and if so which ones, it would be reasonable for me to wonder what inferences price algorithms make not just about me but also about you. Any book I recommend reveals something that I believe to be true about you. If the book is a novel set in Czechia, it is reasonable for me to wonder about how that recommendation would affect your prices just as my own. Similar concerns extend to groups and corporate entities we are members of. Our actions can affect their price fates too and the price fates of their other members. It would be reasonable to worry about all that as well.

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[19] For some vivid descriptions, see Ramsi A. Woodcock (2017), *Big Data, Price Discrimination, and Antitrust*, 68 HASTINGS L.J. 1371, 1372-73 and the references there.

[20] Nitasha Tiku, The Dark Side of "Replay Sessions" That Record Your Every Move Online, WIRED (Nov. 16, 2017, 6:00 AM), https://www.wired.com/story/the-dark-side-of-replay-sessions-that-record-your-every-move-online/

[21] See also Michelle Geronimo (2017), *Online Browsing: Can, Should, and May Companies Combine Online and Offline Data to Learn About You?* 9:2 HASTINGS SCI. & TECH. LJ, 211.

3.1. Unfreedom

In this section, I argue that data driven price discrimination makes it rational to be paranoid, that this rational paranoia is a cognitive burden, and that there is a sense in which this burden makes us less free. In sum, by making it rational for buyers to monitor themselves and hold themselves back from doing and saying what they want online, data driven price discrimination diminishes a certain kind of freedom.

Zephyr Teachout identifies a kind of rational paranoia that affects gig workers, e.g., employees of platforms like Doordash, Uber, or TaskRabbit. She tells the story of workers who are frustrated because they do not fully understand what factors affect their opportunities and earning. These workers are offered personalized bench-marks and milestones to meet, including seemingly random monetary incentives that encourage them to extend their shifts. As Teachout writes: "workers are then employed in a state of rational paranoia, where they know that they are being punished and rewarded and experimented upon, but they have no way of knowing whether any given decision they are faced with is a result of a game, an experiment, a punishment, a reward, or changing circumstances on the ground and changing needs at the job."[22] The idea here is that gig workers don't quite know what would maximize their earnings, meeting their milestones or deviating from them. The situation of buyers is structurally similar but global.[23] Where gig workers are only unsure about their decisions in a single context, albeit an important one, shoppers must second guess their every decision.

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[22] See Teachout (2023) *supra note* 13 at 446.

[23] Teachout (2023) *supra note* 13 at 447-49 also worries that employer surveillance of employees can make "actual political discrimination possible" and "perceived political discrimination likely," both of which can in turn chill political speech, including union organizing. But to my surprise, she prefaces this discussion with the observation that "intrusive surveillance and experimentation and differentiation [of workers by employers] necessarily shapes speech and debate in a way that consumer surveillance does not." I can understand why the risk would be exacerbated given a credible threat of political discrimination by one's employer. But I am not sure why she exempts consumer surveillance from having such effects.

Buyers may be able to mitigate the effects of data price discrimination by better protecting their online privacy, say, by using anonymized searches. Still, the need to resort to privacy enhancing practices is itself a testament to the problem. And the burden imposed by these practices is an added cost. Many buyers may not even know how to implement such precautions. Additionally, sellers could make inferences about buyers who do engage in privacy enhancing practices (perhaps precisely because it requires more awareness and expertise). Moreover, these practices only lessen rather than erase one's digital footprint.[24]

In making these claims, I am not just echoing the common sentiment that price discrimination necessarily makes buyers worse off.[25] I am ready to grant that, like all other kinds of price discrimination, data driven price discrimination may sometimes confer benefits to buyers too.[26] This could be the case in specific transactions or in the aggregate (i.e., across all that a buyer buys, say, in a month or a year). Thus, suppose that in contrast to average buyers, for whom better and worse deals cancel out over time (such that they end up neither saving nor losing due to data driven price discrimination), the poor would benefit overall for getting better deals most of the time (say, in eighty percent of their total spendings). Conversely, suppose that the rich would lose overall for only rarely getting better deals (say, in twenty percent of their spending). No one, however, will always get a better or worse deal than others, but would at best get better or worse deals proportionally more often than others. This is because a buyers' 'willingness to pay' is not only a function of their affordability but also a function of their desire and need. Thus, a poor buyer may end up having to pay more for some goods as compared to an average buyer. These are goods that the poor buyer needs more

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[24] Woodcock (2017), *supra note* 19 at 1372-73 and the references there.

[25] For an excellent exposition of this common view, see Gerhard Wagner & Horst Eidenmuller, *Down by Algorithms? Siphoning Rents, Exploiting Biases, and Shaping Preferences: Regulating the Dark Side of Personalized Transactions*, 86 U. Chi. L. Rev. 581 (2019).

[26] See Jean-Pierre Dubé and Sanjog Misra (2023) *Personalized Pricing and Consumer Welfare*, Journal of Political Economy 131:1, 131-189.

than the average buyer needs them. Similarly, a rich buyer may end up being able to pay less than the average buyer for those goods that they don't particularly need but would buy at a bargain.

My contention is that it would be rational for all such buyers to think twice before doing anything online if their aim is to avoid paying higher prices. More to the point, it is rational for even the poor to worry about revealing their data, despite our assumption that they have something to gain from doing so. This is for two reasons. First, buyers won't necessarily know which category they would end up in, meaning they won't know whether they are in to gain, lose, or be unaffected in the aggregate. But suppose that some shoppers knew they were going to end up in the poor category, thus situated to gain. Still, it would be reasonable for them to want to gain even more, that is, to avoid paying more in the stipulated twenty percent of the time that they otherwise would. This worry will still affect their every action, and so its cognitive burden will be just as much. This is because even if they think that their data might get them a better deal for specific good, it's rational for them to worry that the *same* information may get them a worse deal for other goods. Thus, everyone can reasonably object to data driven price discrimination because it is justified for all buyers, be they rich or poor, to experience the rational paranoia specified above.

How about buyers who think that in the absence of full redistribution, something seems fitting about charging the rich more (given higher ability to pay)? Let's call such buyers egalitarians. Would it be rational for them, and specifically for rich egalitarians, to think twice before revealing their data? I believe that the answer is, again, yes. This is because the egalitarian must attend the distinction between setting prices based on the 'ability to pay' and the 'willingness to pay.' Data driven price discrimination sets prices according to buyers' willingness to pay, which is not always a good proxy for their ability to pay. People may be willing to pay any price for necessities even if they cannot easily afford them. In other words,

what people can afford is relative to the price of everything else. A seller who sets prices on willingness to pay alone can affect what sort of life buyers can ultimately afford. And even egalitarian buyers would be reasonable to fear that.

Second, even egalitarians may reasonably fear a mismatch between the scheme they regard to be just and the one that is being put to practice. For instance, egalitarians may reasonably fear a mismatch between a price scheme they would regard to be just and those that sellers charge in practice. Or they may worry that sellers are only personalizing prices for them and not for everyone else. As such, it seems that we can't rule out the paranoia even affecting the egalitarians, absent controversial assumptions about them *trusting* that the price scheme being implemented is the one they would regard as just. In practice, even egalitarians would be reasonable to worry about revealing their own price preferences, given the mere possibility that their preferences could be used in ways that deviate from the scheme they would regard as just.

Finally, we cannot assume that people who ratify a redistributive scheme are also motivated to support it even to their own detriment. In reality, people are sometimes selfishly motivated, so they may want to free ride on such a scheme or contribute less than their fair share to it. If so, people will be concerned about their own prices even if they ratify the price discriminatory scheme as a whole as just.

In sum, insofar as all buyers want to avoid paying higher prices, it would be reasonable for them to monitor themselves and hold back on their online actions, irrespective of their own situation or conviction *vis à vis* the practice. This causes a feeling of paranoia and helplessness as buyers try to game a system that's gaming them.

In such a world, we may or may not give up on doing or saying what we want. In that respect, the menu of our choices or our possibilities for action and thought may or may not diminish. What will certainly diminish though, is the value of our agency. This is because we have to live with ongoing frustration, knowing that anything we do or say (or even refrain from

doing or saying) could cost us something, though we don't know what. As my example above suggests, this requires us to spend cognitive energy, potentially to no limit, on things other than what we would like to spend it on. This brings us to a state of paralysis and paranoia. It requires means-ends reasoning to no productive end. This is how data driven price discrimination impinges on our freedom.

Recently, there have been accounts of freedom that emphasize the importance of *feeling* free. These accounts show that freedom consists in more than having options or having the capacity to be responsible for actions. For instance, Jonathan Gingerich argues that an essential kind of freedom consists in "the freedom of unplanned and unscripted activity enjoyed by 'free spirits.'"[27] A core idea here is that our ability to engage in unplanned activity contributes to our feeling of being free.

A similar kind of cognitive freedom lies in the background of Sophia Moreau's work on the wrongness of invidious discrimination.[28] Moreau says that one way discrimination can wrong the discriminatee is by way of violating her "deliberative freedom." When we internalize stereotypes about ourselves, we struggle to think outside of the box that others put us in and to make choices apart from what is expected of us. The idea isn't that our options are necessarily diminished. But, rather, that we will have to expend more cognitive effort to even imagine the choices that go against the stereotypes. To have deliberative freedom, in contrast, entails having the ability to make plans for one's life without external cognitive pressure.

I believe the cognitive burden that data driven price discrimination places on us undermines freedom in a similar way. Data driven price discrimination makes it rational to think twice before doing anything that might leave a digital footprint. As a result, we will

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[27] Jonathan Gingerich (2022), *Spontaneous Freedom*, ETHICS 133, 38-71.

[28] Sophia Moreau (2020). FACES OF INEQUALITY: A THEORY OF WRONGFUL DISCRIMINATION, Oxford University Press.

always have a reason to self-monitor and, potentially, to stop ourselves from doing anything online. This posture of self-surveillance and hesitance is not compatible with spontaneity, nor with Moreau's deliberative freedom. We are not free to be ourselves authentically in a space where all self-revelation has the potential to be penalized.

3.2 Loss of Important Goods

The kind of freedom that data driven price discrimination impinges on is important in itself. But it is also foundational, meaning that without it we are unable to pursue other social and individual goods. Today, the internet plays a central social role as a commons, a kind of global public plaza.[29] It functions as a marketplace, a platform for discourse and the exchange of ideas, and as a repository of human knowledge. Individuals who want to access these fundamental and social goods must do so by navigating the internet. But data driven price discrimination disincentivizes the use of the internet for these purposes, as it incentivizes withdrawal from online spaces, or inauthentic self-presentation on the internet. In the rest of this section, I will outline, in turn, each of the goods undermined by the practice of data driven price discrimination, how and why they are threatened, and why they matter in a liberal society like ours.

3.2.1 Public Discourse and the Exchange of Ideas

Placing costs on online speech and freedom to seek knowledge impairs public discourse in a way that undermines the achievement of the values that a free speech regime and a democratic society are dedicated to. Neil M. Richards famously argued that what free speech norms primarily protect is "intellectual privacy," i.e., our ability to form bad ideas as a precursor of

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[29] For two accounts of this much discussed idea see: Camp, L. & Chien, Y. (2000). "The Internet as Public Space: Concepts, Issues, and Implications In Public Policy." ACM SIGCAS COMPUTERS AND SOCIETY (30) 13-19; and Mary Anne Franks (2021), "Beyond the Public Square: Imagining Digital Democracy," THE YALE LAW JOURNAL FORUM.

forming good ideas that are worth expressing publicly.[30] The idea is that we need safe spaces, in solitude or among confidants, to make mistakes which will be the precursors to good ideas. Surveillance undermines free expression because it prevents us from having certain kinds of thoughts.

As I discussed above, on my view too, surveillance can undermine free expression.[31] But the problem I describe is the inverse of the one outlined by Richards. Rational paranoia is an enemy of free thought and expression, not because it directly prevents us from forming certain kinds of thoughts, but because it imposes thoughts on us that waste our time and burden us. The freedom of thought can be undermined by the imposition of useless thoughts. When there is good reason for paranoia, we waste our time stuck in loops of pointless means-ends reasoning. This may prevent us from pursuing other, more useful, lines of thought. It may also warp our thinking and color our world with suspicion and distrust.

Data driven price discrimination also disincentivizes the exchange of ideas online. This may cause people to withdraw from engaging in any activity that may leave a digital footprint. For instance, people would have a reason against blogging, writing diaries, or taking and sharing photos. Equally, they would have a reason to subdue every kind of expression and not just, say, political speech or other forms of expression that a free speech regime is often thought to chiefly protect. For instance, they will have a reason to refrain from sharing what they struggle with, enjoy, or look forward to; to share their favorite gingerbread recipe for instance or write an online review for a pair of shoes they recently purchased. They will have a reason against soliciting gift ideas or book recommendations online. They will also have a reason

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[30] Neil M. Richards (2008) *Intellectual Privacy*, 87 TEXAS LAW REVIEW, 387.

[31] See however an abstract posted to SSRN by Professor Abbey Stemler, which suggests that she is worried about the First Amendment limitations of governmental bans on price discrimination. A full draft of this paper is not yet available but for the abstract, *see* Abbey Stemler, Surveillance Pricing (January 02, 2025). Available at SSRN: https://ssrn.com/abstract=5159387 or http://dx.doi.org/10.2139/ssrn.5159387.

against engaging with any and all kinds of content that's available to them or is shared with them online.

3.2.2 Sincerity, Reclusiveness, and Reticence

One idea that I've touched on is that self-surveillance leads to self-censorship. But self-censorship feels lonely. Lack of expression is itself damaging. Having to swallow your thoughts is painful. We are speaking animals. The ability to speak our minds sincerely in a carefree and spontaneous way is a good in itself.

Data driven price discrimination undermines our ability to speak our minds sincerely to each other. Under this kind of surveillance, there is a real possibility that reticence or lying could decrease the price of some goods. This makes it rational for buyers to refrain from engaging with others, to engage inauthentically with others, or both. Coming up with the "right kind of lies" (those that presumably reduce the prices for items on the shopping list) of course involves a cognitive burden too. But a widespread incentive to lie undermines our ability to develop and exist as moral and social beings. It also downgrades the very goods that I was discussing above.

Suppose you post something on social media. I won't know how to take it. Was it sincere or was it your attempt to get a better deal on some goods? The worry isn't that your post may be disinformation and that I have reason to not trust it. But the point is that you only get a benefit out of posting something on social media when what you post is sincere. I too only get a benefit out of reading what you post if it's authentic. When this is diluted with insincere posts that are addressed to the algorithm, the value of engagement diminishes for both of us. The good of freely speaking our minds is in some ways only available to us if we can reliably default to the sincerity of communication.

The reticence and inauthenticity that data driven price discrimination incentivizes also threatens our moral development and agency. Seana Shiffrin emphasizes the central role of sincere communication in our personal moral development and flourishing:

> We cannot develop or flourish in isolation. Our mutual interdependence is not merely material but also, importantly, mental. The exchange of thoughts, beliefs, emotions, perceptions, and ideas with others is essential to each person's ability to function well as a thinker and as a moral agent.[32]

Speaking our minds freely, to ourselves and others, and receiving the same from others, contributes to our development as moral agents. The development of our rational, emotional, and perceptual capacities depends on the ability to communicate and rely on the sincerity of others.[33]

As Shiffrin goes on to explain, sincere communication is also a prerequisite for the fulfillment of our moral duties to others:

> Because we cannot peer into one another's minds, we depend upon others to convey their mental contents with precision and rich content through sincere communication…. Thereby, we are enabled to form and execute complex cooperative plans, to understand one another, to appreciate and negotiate around our differences, and to gauge, somewhat, the extent of our mutual ineffability.

We are social beings. Sincere speech is the way that we make our minds known to each other. Without sincere speech, humans could not cooperate successfully with each other. And cooperation is key to the fulfillment of our full range of moral duties and ends, a list which includes "mutual recognition, helping and respecting others, and responding to others as

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[32] Seana Valentine Shiffrin (2014), SPEECH MATTERS: ON LYING, MORALITY, AND THE LAW. Princeton University Press, 1.

[33] *Id.*

individuals."[34] Where "truth-telling stops being reflexive or agents often find themselves in reasonable and serious doubt about whether assertions presented to be trusted,"[35] the communicative process necessary for our identity, development, and success as moral agents will be compromised.

3.2.3 Marginalization of Valuable Activities

Many activities that enrich our lives would also become marginalized, because they reveal information of the relevant type. For instance, our appreciation of art or other aesthetic articles may become prohibitively revealing and therefore costly. Even visiting a museum may leave a digital footprint (your cellphone location, credit card trace, etc.). Collective online activities will have such effects on all participants and will have the highest total costs.

Data driven price discrimination can also set a trend toward a generic and monotonous world. This is because, say, the more eccentric the articles of appreciation are, the more uniquely they identify the consumers. The same holds with respect to inquiries and expressions of opinion. Popular opinion will be cheap to consume, since it individuates users less. Meanwhile specialized or advanced knowledge will cost users more, for it more uniquely identifies their interests, and so their preferences. So too would be the cost of seeking or disseminating *dissenting* opinions. The higher the associated costs of dissenting opinions, the greater the threat to fundamental values of open public discourse and democratic governance. These interrelated issues can cause a snowball effect. As more people opt out, those who resist are penalized even more.

3.3. Grounds For Rejection

Let us recap. I argued that data driven price discrimination impinges on a kind of freedom.

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[34] *Id*.

[35] *Id* at 188.

I also suggested that the kind of freedom in question is foundational, meaning that infringements on it also undermines our full pursuit and realizations of other individual and social goods. Some such goods, moreover, are central to a liberal and democratic society. In sum, there are strong reasons against data driven price discrimination that flow from many core moral and political values.

But I don't mean to suggest that a doomsday will arrive, where people feel too paranoid to do anything online or that the internet will as a result collapse.[36] Bad outcomes like diminished online engagement are possible. But even if everyone ultimately acts exactly as they would have, the cognitive burden is enough reason to reject data driven price discrimination.

I, however, think it unlikely that everyone will act exactly as they would have in an internet where data driven price discrimination is rapidly spreading. Even a moderate amount of data driven price discrimination, which today's existing technologies and laws facilitate and permit, can have lasting and rippling negative effects. This is because the values in question can be frustrated even with minimal interference: any amount of associated cost to expressing ideas or information will impede their exchange. Any amount of disincentive for participation or discursive engagement frustrates the institutions of a deliberative democracy. Moreover, this is true whether or not particular consumers are actually targeted. The mere fact that anyone *could* be targeted diminishes everyone's full pursuit and realizations of the goods at stake.

4. Benign Price Discrimination Based on Activity

Activity-based price discrimination need not be data driven. A car salesperson may adjust prices for customers wearing their best clothes. Equally, a supermarket chain may raise prices

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[36] Arnd Vomberg, Christian Homburg, Panagiotis Sarantopoulos (forthcoming) *Algorithmic pricing: Effects on consumer trust and price search*, INTERNATIONAL JOURNAL OF RESEARCH IN MARKETING, https://doi.org/10.1016/j.ijresmar.2024.10.006. (concluding that "that retailers can implement ADP, as consumer backlash can be short-term").

at stores in affluent neighborhoods. In a sense, wearing your best clothes or going to affluent neighborhoods are also actions that somewhat reveal your price points. Perhaps these cases of action-based price discrimination are also objectionable. What would be worrisome for my view, is the thought that these cases purport to blur the line between data driven price discrimination and seemingly benign and conventional forms of price discrimination. Let me therefore highlight what I take to be their differences.

To begin, even when it can be described as 'informed by consumer activity,' conventional third-degree price discrimination relies on *isolated* pieces of data that yield very limited inferences about people's price preferences. The fact that the seller's data point is isolated (rather than comprehensive) allows me to cast doubt on the inferences they make with my other behavior. These practices are moreover easier to subvert. I can choose not to wear my best clothes to the car dealership.

Subverting non-pervasive forms of activity-based price discrimination are low-cost, precisely because sellers rely on isolated pieces of information. When I decide not to wear my best clothes to the car dealership, I lose very little. No personal or social goods are severely threatened. On the other hand, to avoid higher prices under data driven price discrimination, buyers must monitor their digital footprint in ways that threaten their pursuit of information, their capacity to engage in open discourse, and other valuable activities.

Additionally, sellers engaging in conventional kinds of price discrimination often don't enjoy market power, which allows buyers to opt out. If you want the discount despite your affluent appearance, you could threaten to go elsewhere or even bluff about cheaper options at a nearby dealership you know about. On the other hand, data driven price discrimination involves pervasive data collection and processing. Comparing every buyer's footprint against millions of other data sets and in light of robust correlation charts enables the comprehensive price profiling of all buyers. This makes each additional data point, even seemingly

inconsequential ones, much more revealing and conducive to placing buyers in more accurate price profiles for one or more goods. *This* is what gives buyers reason to refrain from even the most mundane or quotidian kinds of online engagement.

Finally, when the practice is data driven, comprehensive price profiles will be in the hands of marketplaces like Amazon that not only exercise market power but also offer a wide range of goods and services themselves in addition to hosting every kind of independent seller and service provider. Such firms can also in principle sell price profiles to further sellers of all kinds.

It is the combination of such factors that creates a system of hostile incentives, fueling concerns about paying more for every kind of good or service and chilling every kind of action as a result. In sum, under a contractualist framework, we may not be able to reasonably object to facing personalized pricing on the basis of our actions. But it seems to me that we are able to reasonably object to data driven price discrimination due to its pervasive and cumulative interference with our practical reasoning.

5. Earlier Critiques of Digital Price Discrimination

The view I defend here matters, in part, because it is the only plausible account of why data driven digital price-discrimination is in itself impermissible. Other objections to digital price discrimination, of which there have been many in recent years, hinge on factors that do not consistently play out in practice. As such they succeed only in showing that price discrimination can be impermissible under certain contingent circumstances or due to specifics of implementation.

A few words on the difference between these two kinds of objections may be worthwhile. The distinction is best understood as one about the *scope* of objections. An objection to a practice *per se* suggests that the practice in question itself amounts to a unique sort of wrong, irrespective of whether the practice may *also* be—either necessarily or

contingently—an instance of a familiar wrong. Such an objection shows that the practice is *intrinsically* problematic. My contention that data driven price discrimination diminishes freedom is of this kind. Earlier objections to digital price discrimination are not.

This doesn't mean however, that earlier objections to digital price discrimination "fail," as Lippert-Rasmussen and Munch suggest, just because they don't apply to the practice as such.[37] Rather, it means that we should think of earlier objections as specifying immoral instances of what otherwise may be a morally neutral practice. Now if I am right in diagnosing the practice as one that is not morally neutral but objectionable per se, then earlier objections describe various ways that the practice may contingently become even *more* objectionable.

Moreover, Lippert-Rasmussen and Munch may be at fault for taking these earlier objections as objections to the practice per se, rather than as critiques of what they sometimes explicitly target: ongoing specific instances of the practice by online markets like Amazon. To the extent that such specific instances of the practice, say, manipulate consumers or perpetuate inequality, existing critiques are illuminating and can inform policy that addresses them.

This brings me to the relevance of the scope of objections to policy implications. As with any practice whose specific instances may be either a bug or a feature, sound policy regarding price discrimination must outlaw its objectionable instances without hindering its innocuous or beneficial ones. To that end, my analysis suggests that *general* regulations of price discrimination should only target its *data driven* form. A plausible background assumption here is that when price discrimination happens to be contingently objectionable, it would violate existing measures that already prohibit *all* the forms of the relevant objectionable behavior, including any of its from that could result from price discrimination. For instance,

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[37] Lippert-Rasmussen, K., & Munch, L. A. (2021). *Price Discrimination in The Digital Age*, OXFORD HANDBOOK OF DIGITAL ETHICS 467-484, 468. While they do not draw a distinction between data driven and other kinds of digital price discrimination, what they have in mind under the umbrella of "digital price discrimination" inclusive of data driven price discrimination as well.

when price discrimination happens to be manipulative, its practice would violate measures that prohibit all instances of manipulative behavior, be they amidst price discrimination or not.

This point is fully appreciated by the critics of ongoing forms of price discrimination that online markets like Amazon are carrying out. Van Loo & Aggarwal, for instance, maintain that insofar as such practices are deceptive, they are in violation of existing consumer protection law that outlaw deceptive conduct.[38] Many other scholars are also interested to identify how specific forms of online price discrimination may be prohibited by existing law on grounds that those forms of price discrimination involve the kinds of prohibited conduct that the law in question prohibits.

But when a practice is inherently objectionable, it is objectionable not because it is a form of an already prohibited kind of objectionable behavior, but objectionable in its own way. In this context, what's objectionable is setting prices based on consumers' online footprints. This practice is objectionable in itself, and not because it is a form of some other form of objectionable behavior. Thus, proposals for judicial or legislative measures *specific* to price discrimination must target what's intrinsically problematic in its own right and as a unique and distinctive wrong. Such general measures must only narrowly outlaw this intrinsically objectionable form of price discrimination though, lest they risk inadvertently outlawing innocuous forms of price discrimination that are not data driven. In light of these findings, there is need for further research to evaluate existing and hypothetical proposals for judicial or legislative interventions,[39] clarifying whether they would succeed or fail by these lights.

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[38] Van Loo and Aggarwal (2024), *supra note* 3.

[39] These include pro-consumer technological interventions; class actions and agency interventions under consumer law, antitrust, and privacy law; class actions in private law; new legislations imposing (personalized) price caps; increasing privacy protections; and mandating information disclosures. *See* Van Loo, Rory, *Consumer Agents* (January 01, 2025). Available at SSRN: https://ssrn.com/abstract=5199350 or http://dx.doi.org/10.2139/ssrn.5199350; Miller, Andrew C., *Invisible Allies: Algorithmic Consumer Profiling and the Rise of New Group Harms* (2025), YALE JOURNAL OF LAW & TECHNOLOGY (forthcoming), Available at

Lippert-Rasmussen and Munch rebut many earlier objection to digital price discrimination as only contingently relevant. These earlier objections to the practice include "that it is manipulative; that it violates privacy; that it has an automatized nature; that it results in morally objectionable aggregative results, for example, greater distributive inequality; and that it is discriminatory in a pejorative sense." [40] In the remainder of this section, I raise several further objections that Lippert-Rasmussen and Munch do not consider. I shall argue that these further objections are also best understood not as critiques of price discrimination *per se* but as contingent objections instead.

5.1 Unfairness

Unfairness can be understood in terms of an unfair advantage that sellers gain over buyers. Specifically, it could be thought unfair for sellers to invariably sell at a higher price than they are willing to sell where none of the buyers get to purchase at a lower price than they are willing to buy. The intuitive pull here is that there is some benefit that isn't shared. Sellers take it all and leave nothing for buyers. Buyers are likely not *entitled* to surplus. Still, one could think that any market should have some winners to be on the buyer side.

This line of thought is unpersuasive, however. First, sometimes sellers don't take all the surplus for themselves. Rather, sometimes they use additional earnings to cover selling at a loss to those who could not have otherwise accessed an important good or service. [41] But even when price discriminating sellers don't sell to any buyers at a loss, they need not keep the added surplus all to themselves. We can imagine a system in which the price charged reflects the average between what each consumer would maximally pay and what that seller would

[40] Lippert-Rasmussen & Munch (2021) *supra note* 37 at 468.

[41] More on this below in text accompanying *infra note* 39.

minimally charge. Call this "fair" price discrimination.[42] Here, sellers won't keep all the benefits to themselves but equally share it with buyers. This suggests that an objection to price discrimination on the basis of unfairness is contingent.[43]

5.2 Sellers Abnormally Profit at Buyers' Expense

A second argument says that price discrimination is unfair because it allows sellers to gain unfairly large profits at the expense of buyers. This argument is so influential that its refutation is taken by some as dispositive that those objecting to price discrimination *per se* are antiquated and misguided.[44] The difficulty with this argument is that its premise is not always true. While a price discrimination will be more profitable for a *particular* seller than if that seller charges a single price—otherwise the firm would not bother to price discriminate in the first place—it is not necessarily true that permitting price discrimination will enable all sellers to highly profit in the absolute sense. This distinction applies for two reasons.

First, not permitting price discrimination may render some industries unprofitable. This can happen for industries with high start-up costs and low operating costs.[45] In this case, price discrimination could make an otherwise unprofitable industry possible by raising profits up to zero economic profit, just enough to keep the sellers from exiting the market altogether. A natural response to such a possibility would say that any such industries should simply be allowed to shut down. However, this response overlooks that it is possible for such industries

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[42] [Acknowledgment redacted to preserve anonymity].

[43] Note that even in "fair" data driven price discrimination the paranoia persists (I'd be worried about having to pay the average of a higher price point rather than the average of a lower price point).

[44] See generally Daniel J. Gifford, and Robert T. Kudrle (2010), "The law and economics of price discrimination in modern economies: time for reconciliation," UC DAVIS L. REV. 43: 1235–1293.

[45] Friedman, M. (2002) CAPITALISM AND FREEDOM. University of Chicago Press, Chicago, 385; Schmalensee, R. (1981). Output and Welfare Implications of Monopolistic Third-Degree Price Discrimination. THE AMERICAN ECONOMIC REVIEW, 71(1), 242–247.

to have positive net social benefits[46] even if there is no single price that would make them profitable. In other words, there are industries with positive net benefits that can only function because of price discrimination. One possible example is urban transit systems, which fit the paradigm of high start-up costs and low operating costs. These transit systems can be trapped within a bind: if they raise a universal price too far, then they lose enough riders to outweigh the higher revenue per rider; if they lower the price, then they gain more passengers, but not enough to counteract the lower prices. At the sweet spot, even a transit system where society gains as a whole can fail to generate enough revenue to function with a single price. Under realistic conditions, the transit system may use price discrimination to enable a socially beneficial service to function without abnormal profits.[47]

Second, competition on the supply side may prevent even price discriminating sellers from collecting large economic profits.[48] Even if price discrimination increases profits relative to a single market price, those profits could be competed away through entry of new sellers, who also price discriminate, until all sellers earn zero economic profit. As discussed above, price discrimination depends on price-making power, but if this power is shared between a few powerful firms, competition could still drive down profits. One example may be the airline industry,[49] which price discriminates among consumers based on timing of sales to identify high-paying business travelers. Even with this clear price discrimination, this is not an industry well-known for its large profit margins, since all firms in the industry adopt similar practices

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[46] Positive social benefits should be taken here in the economic sense comparing the total benefits to consumers to the total costs of production.

[47] For another example, see Hal R. Varian (1987) INTERMEDIATE MICROECONOMICS: A MODERN APPROACH at 431.

[48] This assumes away the minor theoretical distinction between consumer surplus, compensating variation, and equivalent variation.

[49] Gifford and Kudrle (2010) *supra note* 44 at 1292.

and then compete.[50] In the end, there is an evident pattern of price discrimination without the sense that the industry is raking in abnormal returns.

In sum, even in the presence of price discrimination, it is entirely possible that sellers do not make any abnormal profit out of the transaction, meaning that abnormal profits at the expense of buyers cannot be a general objection to data drive price discrimination.

5.3 Disparity of Power

This objection criticizes the power disparity between buyers and sellers. This objection has strong intuitive pull, given a general anxiety about big powerful corporations like Amazon taking advantage of defenseless buyers. The objection can be motivated by the observation that the sellers involved are those with sufficient market power, which is the first economic condition for price discrimination. This market power gives large sellers the ability to control the price—as opposed to one small seller among many, who must accept some prevailing market price.[51] Two points mitigate the importance of this market power.

First, market power is not unusual. Noting the ubiquity of brand-differentiated products and unique services, Einer Elhauge argues that "the price discrimination normally taken to evidence market power is so ubiquitous that it would indicate market power exists everywhere."[52] Thus, objections grounded in the power relationship will again fail to distinguish cases of data driven price discrimination from typical market outcomes for brand-differentiated products.

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[50] For the view that price discrimination in the airline industry increases welfare too, see Williams, K. R. (2022). The Welfare Effects of Dynamic Pricing: Evidence from Airline Markets. ECONOMETRICA, 90(2), 831-858. https://doi.org/10.3982/ECTA16180.

[51] For the suggestion that price discrimination can help sellers gain and maintain market power through collusion see Salil K. Mehra (2021) "Price Discrimination-Driven Algorithmic Collusion: Platforms for Durable Cartels," 26 STAN. J.L. BUS. & FIN. 171, 173.

[52] Einer Elhauge, "Defining Better Monopolization Standards," STANFORD LAW REVIEW 56 (2003): 253–344, 258.

Second, it does not follow from the existence of power that the power is necessarily abused. Any number of public venues and public services, from opera halls to national parks, have some amount of market power by virtue of their lack of direct competition or access to a unique attraction. Surely it does not follow that an opera hall charging modest entrance fees with some kind of price discrimination, e.g., senior or student discounts, is necessarily acting unfairly. This common scenario shows that market power coupled with price discrimination does not necessarily entail unfairness.

5.5 Coercion

This objection appeals to some element of coercion imposed by sellers on the buyers. If sellers are forcing buyers into transactions where only the seller benefits, there would be good reason to characterize the transactions as wrongful.

Sellers can to an extent force consumers to disseminate their data, for instance, by conditioning service on consumers' agreement to disseminate their data. Even so, there is little reason to think that sellers can force buyers to purchase. Price discrimination does not influence what buyers want; they bring their preferences to the market[53] and are charged based on those preferences.[54]

Of course, ongoing price discrimination by sellers like Amazon is mostly conducted covertly. This means that buyers are kept in the dark about the pricing methods they are subjected to. Such deception might well undermine voluntariness, which is a point that Lippert-Rasmussen and Munch address.[55] But absent such deception (or other contingently coercive tactics like pressure marketing), we must assume that buyers still enter transactions voluntarily.

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[53] *See however*, Wagner & Eidenmuller (2019), *supra note* 25, who argue that sellers also shape preferences by personalizing ads.

[54] *See however* Cristina Isabel Ceballos, "The Case Against Algorithmic Price Discrimination" (unpublished manuscript, on file with author), who argues that sellers can nudge or inflate what buyers are willing to pay.

[55] Lippert-Rasmussen & Munch, *supra note* 37 at 474 ("If the practice were adequately communicated, there would be no objection along these lines and, thus, that DPD is not morally objectionable per se").

Even in the most extreme case of first-degree price discrimination, buyers are charged so that they get exactly the worst bargain they would accept, but a bargain they still *accept*.[56]

I must acknowledge that the fact that people accept something or buy something is not evidence that it is voluntary (drug addict); and even if it is voluntary, this does not imply that it is not exploitative (sweatshop employment). Existing literature on exploitation and price gouging addresses these matters in some detail.[57] But these are still contingent features of some price discriminatory transactions that need not hold true of others.

5.6 Collusion

Many worry that pricing algorithms enable sellers to collude.[58] In an experimental study of pricing algorithms, Calvano et. al. suggest that the algorithms can learn to charge supracompetitive prices, without communicating with one another.[59] In addition to such tacit collusion, there is a risk of systemic collusion. Mehra for instance argues that platforms capable of price discrimination now "knit together" and set the prices of a large numbers of previously-independent firms. The worry is that constituent firms will no longer feel a need to undercut

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[56] This assumes away the minor theoretical distinction between consumer surplus, compensating variation, and equivalent variation.

[57] See Zwolinski M. (2008). "The Ethics of Price Gouging." BUSINESS ETHICS QUARTERLY, 18(3): 347-378. Snyder J. (2009). "Efficiency, Equity, and Price Gouging: A Response to Zwolinski." BUSINESS ETHICS QUARTERLY, 19(2):303-306. See also Zwolinski, Matt, Benjamin Ferguson, and Alan Wertheimer, "Exploitation," THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Winter 2022 Edition), Edward N. Zalta & Uri Nodelman (eds.), URL = <https://plato.stanford.edu/archives/win2022/entries/exploitation/>.

[58] For an early expression of the worry about algorithmic collusion, see Ariel Ezrachi & Maurice Stucke (2016), VIRTUAL COMPETITION. Harvard University Press. See also Inge Graef (2017), *Algorithms and Fairness: What Role for Competition Law in Targeting Price Discrimination Towards End Consumers?*, 24 COLUM. J. EUR. L. 541 ; and Afrouzi (2018), *The Dawn of AI Philosophy*, THE AMERICAN PHILOSOPHICAL ASSOC. BLOG, available at https://blog.apaonline.org/2018/11/20/the-dawn-of-ai-philosophy/ (writing "AI agents that customize your hotel prices can secretly collude with those that book your flight to drive up prices. Similar collusive behavior can create utility crises or stock market bubbles").

[59] Emilio Calvano, Giacomo Calzolari, Vincenzo Denicolò, and Sergio Pastorello. 2020. "Artificial Intelligence, Algorithmic Pricing, and Collusion." American Economic Review 110 (10): 3267–97. DOI: 10.1257/aer.20190623.

each other in price competition to increase sales, when they know they will be able to sell at supracompetitive prices set by the platform's algorithmic wisdom. As Mehra puts is, the platform's ability to price discriminate can enable constituent firms to collude rather than compete, thereby jointly create and maintain a collective monopoly.[60]

While sound, an objection to price discrimination on grounds of likely collusion is also contingent. This is for the obvious reason that sellers can exercise data driven price discrimination without collusion. Though this may eminently change, it is telling that existing law by and large only prohibits those instances of price discrimination that amount to antitrust violations under the Robinson-Patman Act or the Sherman Act.[61]

6. Conclusion

Recently, The *New York Times* speculated that data driven price discrimination "strikes a nerve" because people hate both feeling watched and feeling ripped off.[62] My own guess is that people also feel competitive about finding deals and associate accepting worse deals with being duped. This is yet one more thing that people presumably hate. What motivates the public outrage could be a combination of the above factors and more. But this paper is not meant to explain what *motivates* the public outrage about data driven price discrimination. What motivates the documented public outrage is a worthwhile question that merits further empirical research. My aim has been to instead explain whether this practice is objectionable. This matter should remain true whether or not there was ever an outrage about it and if so for what reasons.[63] In fact, my discussion, if right, should have the potential to *change* these matters.

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[60] Mehra (2021) *supra note* 51.

[61] Gifford and Kudrle (2010) *supra note* 44 at 1269–71.

[62] https://www.nytimes.com/2025/11/21/business/why-surveillance-pricing-strikes-a-nerve.html

[63] For the same reasons, I also largely set aside the question of the *legality* of the phenomenon in question, focusing instead on its *permissibility*. Nevertheless, as I briefly discuss in section 6, I do hope that my findings will allow a better evaluation of existing and proposed regulation and stated rationales for them.

Specifically, I argued that data driven price discrimination is objectionable per se because it necessarily involves setting prices based on consumer footprints. This, I argued, makes it rational for consumers to be paranoid about the potential monetary repercussions of whatever they do or say online. This rational paranoia diminishes our cognitive control: it forces us to expend mental effort on pointless means-ends reasoning. This also undermines our capacity to engage freely in many of the activities essential to a functioning liberal society, such as the pursuit of knowledge and the free exchange of ideas.

My analysis here has implications for the broader trend of digital personalization of information and transactions. Algorithmic wage personalization for instance, is a similar practice that gig economy platforms undertake *vis à vis* gig workers. In this case, platforms personalize the wages of workers depending on what wages they are willing to accept. Platforms can auction tasks among workers to find the lowest bidders. But they need not show different workers the same wages for the same task. Rather, they can track each worker's acceptance history, as well as other data, to offer tasks at lower wages to those willing to accept them. In that way, algorithmic wage personalization is akin to data driven price discrimination, or perhaps a less discussed form of it.[64] Features unique to employer-employee relationship complicate this kind of price discrimination in a way that requires a separate treatment. Still, I believe that my analysis in broad brushes extends to wage personalization too: its various instances could be subject to contingent pros (e.g., allocation efficiency) and cons (e.g., exploitation) but it is inherently wrong for disincentivizing every kind of action.

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[64] For an excellent exposition, see Teachout (2023) *supra note* 13. Teachout essentially treats algorithmic wage personalization as a form of price discrimination, arguing in effect that the former has an often-exacerbated form of all the ills often associated with the latter, while emphasizing the astute forms of domination, retaliation, and alienation of labor that are unique to wage personalization.