

TABOO AND TECHNOLOGY: EXPERIMENTAL STUDIES OF DATA PROTECTION REFORM

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Decades after data-driven consumer surveillance and targeted advertising emerged as the economic engine of the internet, data commodification remains controversial. The latest manifestation of its contested status comes in the form of a recent wave of more than a dozen state data protection statutes with a striking point of uniformity: a newly created right to opt out of data sales. But data sales as such aren't economically important to businesses; further, property-like remedies to privacy problems have long and repeatedly been debunked by legal scholars, just as the likelihood of efficient privacy markets has been undercut by an array of experimental findings from behavioral economics. So, why are data sales a dominant point of focus in recent state legislation?

This work proposes a cultural hypothesis for the recent statutory and political focus on data sales, and explores this hypothesis with an experimental approach. Inspired by the taboo trade-offs literature, a branch of experimental psychology looking at how people handle morally uncomfortable transactions, this work describes two experiments that explore reactions to data commodification. The experimental results show that selling data is far more contested than selling a traditional commodity good, suggesting that selling data fits within the domain of a taboo transaction. Further, various potential modifications to a data sale are tested, but in each case the initial resistance to the taboo transaction remains.

The experimental results show a robust resistance to data commodification, suggesting that newly enacted state-level sales opt-out rights provide a culturally powerful balm to consumers. The results also suggest a new framework for analyzing economic measurements of privacy preferences, suggesting a new possibility for interpreting those findings in light of the taboo nature of data commodification. More broadly, the normative implications of the results suggest the need for culturally-responsive privacy reform while keeping an eye to the possibility for taboos to distort technology policy in ways that ultimately fail to serve consumer protection interests.

* Visiting Assistant Professor, Harvard Law School. For helpful comments and critiques, the author thanks Elliot Ash, Oren Bar-Gill, Stefan Bechtold, Omri Ben-Shahar, Pamela Bookman, Molly Brady, Guy Uriel Charles, Jacob Goldin, Hank Greely, Hajin Kim, Bruce Kobayashi, Matthew Kugler, John Manning, Florencia Marotta-Wurgler, Daphna Renan, Sarath Sanga, Holger Spamann, Chris Sprigman, Lior Strahilevitz, Kathy Strandburg, Alexander Stremitzer, Rebecca Tushnet, Maggie Wittlin, Joy Wu, and Jonathan Zittrain, as well as audiences at the American Law and Economics Association Annual Meeting, the Privacy Law Scholars' Conference, NYU Law's Privacy Research Group, and the Chicago/Michigan PALS Workshop.

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INTRODUCTION

State consumer privacy reform is booming. In a wave of state legislative activity that began in 2018 and that continues to accelerate, more than a dozen U.S. states have passed personal data protection reform.¹ A key point of uniformity among these statutes has been an emphasis

1. Aileen Nielsen, *State Data Protection Reform Sales Components* (2023) (unpublished manuscript) (on file with author).

on data sales, with all the reforming states providing a statutory right to opt out of data sales and nearly all the states also conditioning applicability of the opt-out right partly on the proportion of revenue a firm derives from data sales.² Legal compliance issues related to data sales also constituted the focus of the first state attorney general's enforcement action—in California—under a new privacy regime.³

In recent years, federal lawmakers have also crafted proposals around data sales as a locus of regulation. In April 2021, a bipartisan slate of federal lawmakers proposed “The Fourth Amendment Is Not For Sale Act”⁴ to prevent the federal government from purchasing data from private data vendors without any court oversight in the case of criminal investigations. In June 2022, Senator Elizabeth Warren proposed the “Health and Location Data Protection Act” to prohibit data brokers from selling Americans' location and health data.⁵ Federal regulators have also shown interest in data sales, with the Federal Trade Commission (FTC) announcing an enforcement action against a firm premised largely on a theory that its selling of certain sensitive data was an unfair practice.⁶

2. *Id.*

3. In August 2022, California's Attorney General announced its first ever CCPA enforcement action, against Sephora, Inc., in part due to a failure to comply with data sales opt out requirements, after concluding that Sephora's transmission of data to third party analytics companies constituted a sale. Steven Millendorf & Eileen R. Ridley, *California Attorney General Announces First CCPA Enforcement Action*, NAT'L L. REV. (Aug. 26, 2022), <https://www.natlawreview.com/article/california-attorney-general-announces-first-ccpa-enforcement-action> [https://perma.cc/Z7W4-6BZ6].

4. Press Release, Sen. Ron Wyden, Wyden, Paul and Bipartisan Members of Congress Introduce The Fourth Amendment Is Not For Sale Act (April 21, 2021), <https://www.wyden.senate.gov/news/press-releases/wyden-paul-and-bipartisan-members-of-congress-introduce-the-fourth-amendment-is-not-for-sale-act> [https://perma.cc/CP2Z-MGP6].

5. Press Release, Sen. Elizabeth Warren, Warren, Wyden, Murray, Whitehouse, Sanders Introduce Legislation to Ban Data Brokers from Selling Americans' Location and Health Data, (June 15, 2022), <https://www.warren.senate.gov/newsroom/press-releases/warren-wyden-murray-whitehouse-sanders-introduce-legislation-to-ban-data-brokers-from-selling-americans-location-and-health-data> [https://perma.cc/M4MV-47M9].

6. *FTC v Kochava, Inc.*, FED. TRADE COMM'N (Nov. 6, 2023), <https://www.ftc.gov/legal-library/browse/cases-proceedings/ftc-v-kochava-inc> (“The Federal Trade Commission filed a lawsuit against data broker Kochava Inc. for selling geolocation data from hundreds of millions of mobile devices that can be used to trace the movements of individuals to and from sensitive locations. . . . The FTC alleges that by selling data tracking people, Kochava is enabling others to identify individuals and exposing them to threats of stigma, stalking, discrimination, job loss, and even physical violence.”) (emphasis added). The original complaint was dismissed, but at the time of writing the FTC had filed an amended complaint, which was recently unsealed and upon which the District Court had not issued a judgment. Amended Complaint, *FTC v. Kochava, Inc.*, No. 2:22-cv-00377-BLW (D. Idaho June 5, 2023).

Politicians in both state and national politics have likewise taken to looking at the economics of data sales as an opportunity to score points with populist constituents. California Governor Gavin Newsom proposed “data dividends” in his first State of the State address.⁷ 2020 Democratic presidential primary contender Andrew Yang made data property rights a key campaign promise in his surprisingly popular election bid, though Yang never gave concrete details about what data ownership would entail.⁸

Data sales’ political salience has coincided with increased relevance in state legislation. In June 2018, Vermont passed the nation’s first data broker legislation, requiring data brokers—businesses that aggregate personal information about consumers from diverse sources and package that information for resale—to sign up for a public registry. A year later, California passed a similar data broker law. Few kinds of businesses are required specifically to be in a registry because of the business they conduct,⁹ so these statutory registration schemes suggest the implication of an unsavory whiff about data brokers. In the months and years following these initial, more targeted interventions, there has been a groundswell of state privacy legislative reform.

The unifying feature of the recent state data protection legislation has been an explicit right of consumers to opt out of “sales” of their personal data.¹⁰ The feature has proven popular as the most commonly used opt-out provision since the California Consumer Privacy Act (CCPA) came into force.¹¹ Likewise, media coverage of this right suggests that

7. Jeff Daniels, *California Governor Proposes ‘New Data Dividend’ that Could Call on Facebook and Google to Pay Users*, CNBC (Feb. 13, 2019), [cnbc.com/2019/02/12/california-gov-newsom-calls-for-new-data-dividend-for-consumers.html](https://www.cnbc.com/2019/02/12/california-gov-newsom-calls-for-new-data-dividend-for-consumers.html) [<https://perma.cc/8T9X-FG9K>].

8. Marty Swant, *Andrew Yang Proposes Digital Data Should Be Treated Like a Property Right*, FORBES (Oct. 1, 2019), <https://www.forbes.com/sites/martyswant/2019/10/01/andrew-yang-proposes-digital-data-should-be-treated-like-a-property-right/?sh=6439808a3ab7> [<https://perma.cc/A9CP-SJAH>].

9. For example, in the state of Vermont, a search of the Secretary of State Corporations Division Website revealed only three other industries with publicly searchable registries: Amusement Ride Operators, Telemarketers, and Fantasy Sports. Amusement Ride Operators must report their insurance information, so this may reflect a public interest in disseminating information rather than an implicit moral condemnation. On the other hand, telemarketers and fantasy sports operators do not provide insurance information but only provide their business location information, suggesting that—as in the case of data brokers—the state sees some need to name and shame, or publicly identify, those trafficking in undesirable goods and services. See *Other Registration Services*, VT. SEC’Y STATE (2022), <https://sos.vermont.gov/corporations/other-services/> [<https://perma.cc/SEK2-SA5B>].

10. This is necessarily the only point of uniformity between states, as Nevada’s original data protection statute did not grant any right other than that of opting out of data sales.

11. While there is no consistent reporting scheme in any state regarding the absolute frequency of such “do not sell” requests, in September 2020, DataGrail reported that

it is a compelling topic for readers.¹² In short, the data sales opt out right is likely quite popular in both use and discourse, at least relative to other rights provided by these new statutes.

The legislative histories of these state bills indicate widespread and bipartisan concern amongst legislators about *profiteering* off data. Consider statements from the sponsor of the Nevada data protection bill—State Senator Nicole J. Cannizzaro—when presenting the bill: “*Unfortunately*, consumer data is an extremely lucrative industry.”¹³ It is uncommon in America—particularly in the historically freewheeling, libertarian state of Nevada—to lament a lucrative industry. Cannizzaro, a Democrat from the booming urban region of Las Vegas, expressed a viewpoint shared by many Republicans. For example, Utah’s Republican State Senator Kirk A. Cullimore opined in defending his sponsored data protection bill that it would allow Utah residents to “opt out of allowing these businesses to sell their personal data *for profit*” while exempting “small businesses that are *not necessarily using that data to sell it and profit* off consumer data.”¹⁴ Even Utah Republicans appear unenthusiastic about this way of making a profit despite erstwhile concerns to develop a business-friendly statutory scheme.

The concern that companies are making a *profit* off data seems to be widely shared and rhetorically powerful judging by the wide use of this terminology in support of state data protection reform. But there is no uniform consensus between states on the definition of such profiteering. States have split on how they define a data “sale,” resulting in

they were the most common kind of data request in the first six months of CCPA being in effect, with nearly 50% of all requests being of this type. *Do Californians Use CCPA to Protect Their Privacy?*, HELP NET SEC. (Sept. 16, 2020), <https://www.helpnetsecurity.com/2020/09/16/ccpa-use/> [<https://perma.cc/KET8-LJNH>].

12. See, e.g., Geoffrey A. Fowler, *Don’t Sell My Data! We Finally Have a Law for That*, WASH. POST (Feb. 19, 2020), <https://www.washingtonpost.com/technology/2020/02/06/ccpa-faq/> [<https://perma.cc/N5QY-JHNZ>].

13. *Hearing on S.B. 260 Before the S. Comm. on Com. and Lab.*, 81st Sess. 11 (Nev. 2021) (statement of Sen. Nicole J. Cannizzaro, Member, S. Comm. on Com. and Lab.) (emphasis added).

14. *Hearing on S.B. 227 Before the S. Revenue and Tax’n Comm.*, 2022 Leg., at 10:23, 17:42 (Utah 2022) (statement of Sen. Kirk A. Cullimore, Member, S. Revenue & Tax’n Comm.) (emphasis added), <https://le.utah.gov/av/committeeArchive.jsp?timelineID=203487> [<https://perma.cc/5VD4-MJKB>]. Apparently, Senators Cullimore and Cannizzaro found data commodification equally distasteful and politically powerful despite their very different political identities. In this issue, they find common cause with state legislators in Connecticut, another state with a recent data protection bill. Connecticut’s Senate Majority Leader Bob Duff spoke in favor of that bill, condemning data collection conducted “to *make a profit* at the cost of consumer privacy” while Connecticut State Representative Lucy Dathan likewise expressed concern about businesses “tracking user data and selling it for profit”. GEN. L. COMM., 2022 LEG., JOINT FAVORABLE REP. 4 (Comm. Print, Conn. 2022), <https://www.cga.ct.gov/2022/JFR/S/PDF/2022SB-00006-R00GL-JFR.PDF> [<https://perma.cc/VPA4-KSNM>].

differences in how broadly they extend sales opt-out rights. Some states, including Nevada, Utah, and Virginia, have taken a narrow approach to sales, defining these transactions as solely those where data is exchanged for monetary consideration.¹⁵ Other states, including California, Colorado, and Connecticut, have defined sales more broadly to include exchanges for “monetary or other valuable consideration.”¹⁶ Assuming legislators wish to develop data protection regimes that track the moral intuitions of their constituents, should a data sale be strictly defined as entailing monetary consideration, or more broadly defined to encompass a variety of data exchanges or sharing arrangements?

The concerns about making a profit off an otherwise legal activity, as shown by the focus of the statutes themselves, the legislative history of these statutes, and the response by rights holders and the press, all suggest that data commodification involve a surprising amount of controversy. Might it be the case that these transactions are appropriately understood as controversial, even contested transactions? If data transactions are morally controversial, the reactions such transactions elicit are likely to resemble reactions already well understood in the taboo trade-offs literature. Taboo trades are trades—like valuing human life for money but also like re-gifting or selling gifts one has received—that have some amount of stigma, but which point to a shared understanding that certain commercial transactions may be morally fraught.

Taboo trades are not just an interesting psychological phenomenon; they deserve serious consideration from a consumer protection perspective. Taboo trade-offs are associated with exaggerated bounded rationality effects, i.e. bounded rationality effects that greatly exceed the typical frequency or effect size of a known rationality effect. For example, if the endowment effect¹⁷ is usually characterized by a 40% disparity between willingness-to-pay (WTP) and willingness-to-accept (WTA), an exaggerated bounded rationality effect might find a 100%, or even 400%, disparity. In other words, the deviations from rational behavior already observed in most people most of the time, such as the endowment effect or losses looming larger than gains, become even more important in understanding threats to consumer welfare in taboo markets because the effects are more substantial and thus cause more deviation from what is thought to be the desired form of ‘rational’ behavior wherein a consumer pursues her own best interests in the marketplace.¹⁸ If we believe that data markets—the

15. Nielsen, *supra* note 1.

16. Nielsen, *supra* note 1.

17. The endowment effect is a term from behavioral economics used to describe the phenomenon by which people systematically attribute a higher valuation to a good when it belongs to them than when it belongs to someone else.

18. Taboo trade-offs are highly vulnerable to framing effects, rendering them particularly vulnerable to manipulation. *See, e.g.*, Carmen Tanner, Douglas L. Medin, & Rumen

most common manifestation of privacy markets—are affected by a taboo, it’s likely that consumers are not behaving rationally. If consumers are not behaving rationally—especially if they are behaving *far from rationally*—they are particularly likely to be disadvantaged in privacy markets because they are less able to look after their own interests, a possibility that is discussed in greater detail in the next section.¹⁹

If privacy markets are taboo markets, there is much to be learned from previous regulatory experiences with other contested commodities and controversial markets. American legislators have long been in the business of telling people what they can and cannot exchange for money, including under what terms and to what extent exchanges of certain goods or services may take place at all. Despite the pronouncements of the *Lochner* era Supreme Court about freedom of contract, and despite the possibility that *Lochner* style skepticism of economic regulation may rise again,²⁰ even the most demonstratively liberty-loving states of the union prohibit sales of various *res sacra*, including, but not limited to, prohibitions on exchanging money for sexual²¹ or reproductive²² services or in exchange for human organs.²³

Iliez, *Influence of Deontological Versus Consequentialist Orientations on Act Choices and Framing Effects: When Principles Are More Important Than Consequences*, 38 EUR. J. SOC. PSYCH. 757 (2008); see also Paul J.H. Shoemaker & Philip E. Tetlock, *Taboo Scenarios: How to Think About the Unthinkable*, 54 MGMT. SCI. 5, 10–12 (2012).

19. Experts familiar with taboo trade-offs consider bounded rationality effects associated with these trade-offs to be reduced. See, e.g., Austin Frakt, *Putting a Dollar Value on Life? Governments Already Do*, N.Y. TIMES (May 11, 2020), <https://www.nytimes.com/2020/05/11/upshot/virus-price-human-life.html> [<https://perma.cc/TCA2-QMU7>].

20. *Lochner v. New York*, 198 U.S. 45 (1905). *Lochner* and its companion cases were widely reviled for decades by both sides of the political spectrum, but recent scholarship and media speculation alike point to a potential return by conservatives to a commitment to “some form of robust judicial protection for economic rights.” Thomas Colby & Peter J. Smith, *The Return of Lochner*, 100 CORNELL L. REV. 527, 527 (2015). See also James B. Stewart, *Did the Supreme Court Open the Door to Reviving One of its Worst Decisions?*, N.Y. TIMES (Jul. 2, 2022), <https://www.nytimes.com/2022/07/02/business/scotus-lochner-v-new-york.html> [<https://perma.cc/6C6N-J4K6>].

21. Nevada is the only state where prostitution is legal. Yet, even in such cases, it seems that practitioners of prostitution and adjacent services seek to emphasize other elements of their work to make the work more normatively acceptable. For sales of legal sexual services, practitioners can place emphasis on the non-monetary elements of their work. See, e.g., Emily Lefroy, *I Made \$2M as the Queen of Sexting – Here Are Tips to Do It Right and Not Be a Creep*, N.Y. POST (June 20, 2022, 1:15 PM), <https://nypost.com/2022/06/20/i-made-2m-as-the-queen-of-sexting-here-are-tips-for-doing-it-right/> [<https://perma.cc/HQ5Q-93N4>] (“As well as making money, she was also drawn by the connections she could make with fans. ‘I’ve actually created some amazing and real connections with people through the sexting,’ she said.”).

22. Gestational surrogacy notably remains an area of diverse state law approaches. See *The United States Surrogacy Law Map*, CREATIVE FAM. CONNECTIONS (2020), <https://www.creativefamilyconnections.com/us-surrogacy-law-map/> [<https://perma.cc/CZQ6-2H4N>].

23. 42 U.S.C. § 274e(a) (“It shall be unlawful for any person to knowingly acquire, receive, or otherwise transfer any human organ for valuable consideration . . .”).

Taboo markets don't always have to engender bans. Lighter regulatory interventions can also characterize a response to a taboo market. Sometimes taboo markets can be recognized not because they are banned altogether but because governments have taken steps to limit the size of a market. In other words, for these markets legislators do not necessarily want a regime that results in the maximum number of entrants and the maximum volume of transactions. For example, a recent federal proposal to prohibit the export but not the sale of Native American artifacts would have limited the market size to only participants willing to keep the artifacts within the United States.²⁴ Likewise, Nevada's laws regarding sex work apply geographic constraints, limiting these markets to low-population counties and also imposing geographic restrictions on where the businesses can advertise.²⁵ While American culture has historically been pro-market, taboos are sometimes found associated with regulation of transactions in otherwise free markets.

The rationale for laws justifying the regulation of taboo markets can be diverse, both philosophical but also sometimes deeply pragmatic. A deontological anti-commodification impulse has sometimes been cited as an important motive in such transaction prohibitions and restrictions.²⁶ In other cases, market restrictions or transaction prohibitions have been rationalized through consequentialist anti-commodification arguments that markets can corrode traditional social values in some domains, negating the positive externalities otherwise produced by those social values.²⁷

24. Press Release, Sen. Martin Heinrich, U.S. Sen. for N.M., Heinrich Introduces Bill to Prohibit Exporting Sacred Native American Items (July 6, 2016), <https://www.heinrich.senate.gov/press-releases/heinrich-introduces-bill-to-prohibit-exporting-sacred-native-american-items> [<https://perma.cc/26K8-9N4X>].

25. Nevada state law explicitly prohibits prostitution in counties with a population of 700,000 or more. NEV. REV. STAT. § 244.345 (2022).

26. Regarding the rationale for outlawing prostitution, see *Coyote Publ'g, Inc. v. Miller*, 598 F. 3d 592, 605 (9th Cir. 2010) ("The anti-commodification orientation of the early opponents of legalized prostitution was reflected in the nature of the criminal prohibitions adopted early in the twentieth century. Criminal laws were not directed at women themselves but at those profiting from 'commercialized forms of vice.'"). In the case of proposed legislation to prohibit the export of Native American artifacts, Senator Tom Udall explained, "[t]ribal sacred objects play a fundamental role in connecting Tribal members to their culture and their personal identity. . . . These aren't items of art to be collected and exploited . . ." Press Release, Sen. Martin Heinrich, *supra* note 24. This is an intuition also demonstrated by ordinary people. Consider a recent example from the work of humorist David Sedaris, in which Sedaris indicated that being solicited for sexual advice by his sister was undesirable and uncomfortable but that the experience was especially distasteful because his sister was seeking advice to improve her sexual services, which she performed for money. DAVID SEDARIS, *HAPPY-GO-LUCKY* 204–05 (2022).

27. For example, such arguments have been advanced against the practice of auctioning the right to shoot an endangered animal. See Jenny Isaacs, *Shoot to Conserve*:

Experimental economics has amassed a wide and varied set of behavioral facts suggesting that many people do not engage in consistent behaviors expected from rational economic agents in commercial privacy markets, but researchers have not proposed any unifying theme to explain the inconsistencies in behavior. I offer such an explanation in this Article. In contrast to existing work, this Article goes backwards, first reasoning from existing results that there is something tricky in measuring privacy preferences with monetary valuations. Exploring a possible explanation for the diverse set of behavioral results that point to non-rational privacy preferences, I posit that tabooeness would explain the current results, assuming that tabooeness can be shown independently in separate experimental work. This Article aims to show that tabooeness is relevant to privacy markets and therefore relevant to developing appropriate statutory reform in the states. However, before that argument can be made, two threshold issues must be resolved: whether the line demarcating the taboo from the ordinary can be precisely defined, and whether data commodification falls beyond it.

Taboos are behaviors that are understood to be controversial and potentially morally problematic. For example, it is widely acknowledged that sexual and reproductive services exchanged for money are taboo. Even those who find such services morally unproblematic know that their opinion is a contentious one. For this concept to be interesting and useful but not all-encompassing, this Article also operates under the presumption that for a topic or behavior to be taboo, a significant minority or even a majority of the relevant population must support the taboo description.²⁸ Recognizing the existence of a taboo is not the

Corey Knowlton's Rhino Hunt Escalates the Debate over Trophy Hunting and Environmentalism, MONGABAY (Feb. 20, 2014), <https://news.mongabay.com/2014/02/shoot-to-serve-corey-knowltons-rhino-hunt-escalates-the-debate-over-trophy-hunting-and-environmentalism/> [<https://perma.cc/ACZ3-49JX>]. Likewise, the corrosive effect of commodification might apply to the elimination of discharge by purchase, a short-lived U.S. policy (1890 - 1953) in which the U.S. government allowed otherwise draft-eligible men to pay in order to be released from their service obligation. *President Kills Army Discharge by Purchase*, MADERA TRIB., Jul. 17, 1953, at 1, CAL. DIGIT. NEWS-PAPER COLLECTION, <https://cdnc.ucr.edu/cgi-bin/cdnc?a=d&d=MT19530717.2.14&e=-----en--20--1--txt-txIN-----1> [<https://perma.cc/55DC-YDMV>]. For a wide-ranging exploration of practical and normative problems with applying market logic too widely relative to pursuing policy goals, see MICHAEL J. SANDEL, *WHAT MONEY CAN'T BUY: THE MORAL LIMITS OF MARKETS* (2013). For experimental work demonstrating such an outcome, see Bruno Frey & Felix Oberholzer-Gee, *The Cost of Price Incentives: An Empirical Analysis of Motivation Crowding-Out*, 87 AM. ECON. REV. 746, 753 (1997) (finding that a compensation offer dramatically reduced the stated willingness of Swiss research participants to accept the siting of a nuclear waste facility near their home village relative to no offer of compensation).

28. This semi-statistical requirement likely distinguishes a taboo from a fringe religious or political belief. To illustrate the distinction, consider the following. By this definition, abortion can be understood as taboo in the United States because a substantial

same as choosing a normative judgment; recognizing a taboo instead proposes a descriptive account of a behavior. This is the project the current work undertakes: to test a descriptive account of the taboo status of data commodification and then to subsequently, but separately, draw policy implications from that descriptive account.

Recognizing a taboo need not imply that an observer shares the normative judgment that may explain the taboo. This recognition merely involves accepting that a particular good or service or behavior is controversial, is controversial for reasons of morality, and is likely going to face certain social, political, or even legal restrictions as a result of its tabooeness. Consider sex work, a profession that has held a taboo status across diverse societies for centuries. Even those who happily earn their living with sex work would recognize that their work is controversial. But likewise, they will point out that a taboo against sex work is not universally supported even if it is likely universally recognized. A majority of American voters support the decriminalization of prostitution,²⁹ suggesting that the taboo nature of sex work is not grounded in a majority shared opinion. Further, people may support or not support a taboo, but in either case may not necessarily regulate their behavior according to the taboo. The popularity of patronizing sex workers supports the limited role of taboo in strongly constraining behavior; consider that the lifetime prevalence of men paying for sexual services has been measured at around 5% in Tampa, Florida and runs significantly higher in other Western nations, such as Spain (25.4%) and in Sao Paulo, Brazil (26.5%).³⁰ In other words, many people are not opposed to such markets and even participate in them, despite recognizing that those markets are taboo. Yet these statistics do not in any way call into question that selling

minority opposes any practice of this procedure, even though a majority of Americans support access to this essential healthcare. According to one recent poll, 49% of Americans believe that abortion should not be legal in any circumstances or legal only in limited circumstances. *Where Do Americans Stand on Abortion?*, GALLUP (July 7, 2023), <https://news.gallup.com/poll/321143/americans-stand-abortion.aspx> [<https://perma.cc/JYN2-GY3Q>]. In contrast, eating meat does not appear to be taboo as a matter of statistics, with even the most optimistic recent polling among recent survey results indicating that at most 10% of Americans identify as vegetarians or vegans. F. Bailey Norwood & Courtney Bir, *1 in 10 Americans Say They Don't Eat Meat – Growing Share of the Population*, THE CONVERSATION (Mar. 1, 2022), <https://theconversation.com/1-in-10-americans-say-they-dont-eat-meat-a-growing-share-of-the-population-176948> [<https://perma.cc/C8RM-STGY>].

29. Nina Luo, *Decriminalizing Survival*, DATA FOR PROGRESS (Jan. 2020), <https://www.filesforprogress.org/memos/decriminalizing-sex-work.pdf> [<https://perma.cc/BE6K-C39G>]. This report included details of a representative sample of U.S. voters conducted in November 2019 by YouGov.

30. Danielle C. Ompad et al., *Men Who Purchase Sex, Who Are They? An Interurban Comparison*, 90 J. URB. HEALTH 1166, 1166–67 (2013).

and buying sex is a commonly recognized cultural taboo, even if a substantial portion of the public may not see it as such.

Thus, in exploring the possibility of a data commodification taboo, I explore not the possibility that all people condemn data commodification but the possibility that this practice is contested by some—at least a substantial minority—and the related possibility that a large majority recognizes the controversial nature of data commodification. It may very well be that data commodification is recognized as a morally contentious argument, that some people support this moral opposition while others do not, and finally that people do not necessarily abstain from data commodification even if they recognize the taboo, and indeed even if they agree with the taboo.³¹ One might contemplate markets for marijuana as having a taboo status similar to data commodification. The proportion of Americans who object to the legal sale of marijuana (around 10%³²) is substantially lower than the proportion of Americans who object to the decriminalization of prostitution (around 36%³³), but this is in part due to a recent cultural shift towards greater acceptance of marijuana use. Culture evolves, and so do taboos. Even where taboos co-occur in time, they need not manifest in the same way, and their origins can be quite diverse. For purposes of this work, taboo is a fluid concept that refers to the morally contentious nature of an action rather than to a strict moral prohibition on an action.

This work does not hypothesize that data markets are taboo in the very same way as markets for sex or for babies or for drugs. Rather, the work suggests that reactions to privacy markets may trigger some of the same distaste and moral censure, or the same psychological mechanisms of moral outrage or avoidance or exaggerated bounded rationality, as are triggered by other more traditional taboo markets. Just as we judge that markets for sex or for marijuana are likely to involve consumers in situations where they need additional protections relative to less controversial markets, we may find reasons *not* to leave data markets unfettered.

31. Consider that many married adults commit adultery despite presumably believing it is wrong to do so. Also consistent with the presentation of taboo the reasons that married adults believe adultery is wrong would likely be varied. Some might have religiously grounded concerns while others would see it as a violation of their secular marriage contract.

32. Ted Van Green, *Americans Overwhelmingly Say Marijuana Should Be Legal for Medical or Recreational Use*, PEW RESEARCH CENTER (Nov. 22, 2022), <https://www.pewresearch.org/short-reads/2022/11/22/americans-overwhelmingly-say-marijuana-should-be-legal-for-medical-or-recreational-use/> [<https://perma.cc/Q3GE-U3RD>].

33. Zach Budryk, *Poll: Majority Supports Decriminalizing Sex Work*, THE HILL (Jan. 30, 2020), <https://thehill.com/regulation/other/480725-poll-majority-supports-decriminalizing-sex-work/> [<https://perma.cc/H6F8-QYYY>].

The work proceeds first by presenting the existing state of empirical research on behaviors in privacy markets, followed by the description of two original experiments designed to measure the tabooeness of data commodification. Part I presents insights from theoretical and behavioral studies of personal data markets, highlighting known normative and behavioral constraints on the functioning of privacy markets. Parts II and III then present two related experiments to address four key policy questions related to the limits of rationality by consumers in privacy markets.

Q1: How do ordinary people judge data sales?

Q2: Does the possibility of profit sharing mitigate objections to data sales?

Q3: Does the possibility of data subjects selling their own data reduce objections to data sales?

Q4: Does exchanging data for digital services rather than directly for monetary value reduce objections to data sales?

These questions are designed to ask, essentially, is data commodification a taboo, and if so, how strong is that taboo? The results show that the taboo exists and is robust. A substantial portion of Americans demonstrate strong resistance against the idea of selling data (Q1), and their resistance is not reduced by the opportunity for “data dividends,” i.e. the prospect for redistributing the economic gains of data commodification to data subjects (Q2), or by the notion of consumers selling their own data (Q3). Further, Americans object to the selling of data whether that data be for money or for other valuable consideration (Q4). In short, the experiments confirm that newly created data sales opt-out rights address a culturally salient topic, showing that legislative proposals that would embrace data commodification or that would cabin the data sales opt-out right narrowly would likely be unpopular among the electorate. Part IV discusses the implications of these experimental findings showing taboo-like behaviors around data markets.

I.

THE BEHAVIORAL ECONOMICS OF PRIVACY MARKETS

The hypothesis that privacy markets may be problematic and therefore may warrant legal intervention isn't new. Behavior in privacy markets has long been known to be distorted as compared to the expected behavior of rational, self-interested actors. In behavioral studies, stated and revealed privacy preferences³⁴ are often

34. Revealed preferences are measures taken to indicate what a consumer prefers or how much a consumer values a good through their behavior rather than through costless statements.

paradoxical,³⁵ with people stating that privacy is important to them but declining to pay to protect that privacy, or conversely, accepting low prices to sell their privacy. Such results have been obtained in many and varied circumstances, including situations in which privacy is made highly salient.³⁶ This piece makes a novel contribution to that literature by hypothesizing that tabooeness is an accurate account of the irrational behaviors observed in privacy markets and, further, that this tabooeness provides insights highly relevant to consumer protection policy and legislative reform for digital privacy.

Within the wide body of scholarship on the topic, the interpretation of divergences in the outcomes of measures of privacy preferences remains both contested *and* legally important, which is an unfortunate state of affairs. If policymakers would like privacy law to reflect reasonable expectations and desires by the electorate—a reasonable presupposition—it is necessary to know how much emphasis to place on privacy. Historically, however, this has been quite difficult to determine, in part due to a body of empirical results with conflicting outcomes, which has come to be known as the privacy paradox.³⁷

The “privacy paradox” is shorthand for the fact that, when ordinary people are *asked* to *describe* how important privacy is to them, they nearly universally say that privacy is very important. On the other hand, when ordinary people are asked to *price* the value of their data or to *pay for* privacy protections or to *accept payment* for reductions in their privacy, they are often willing to do so for surprisingly low amounts of money—sometimes as low as a few cents—to reveal what they might otherwise consider sensitive information. Under interpretations of the privacy paradox that take stated preferences as true and contemplate pricing distortions as a source of the paradox, this is cause for concern.³⁸ This interpretation of the privacy paradox suggests that

35. This unfortunate shorthand of “paradox” is used for convenience, but many scholars have made convincing arguments that there is no actual paradox. *See, e.g.*, Daniel J. Solove, *The Myth of the Privacy Paradox*, 89 GEO. WASH. L. REV. 1 (2021).

36. *See, e.g.*, Alessandro Acquisti, *Privacy and Human Behavior in the Age of Information*, 347 SCIENCE 509 (2015); Henry Mance, *Is Privacy Dead?*, FIN. TIMES (July 19, 2019), <https://www.ft.com/content/c4288d72-a7d0-11e9-984c-fac8325aaa04> [<https://perma.cc/N2SF-4X6B>]; Alessandro Acquisti et al., *The Economics of Privacy*, 54 J. ECON. LITERATURE 442 (2016).

37. *See generally* Sarah Spiekermann, *E-Privacy in Second Generation E-Commerce: Privacy Preferences Versus Actual Behavior*, ASS’N COMPUTING MACH. 38 (2001).

38. *See generally* Jamie Luguri & Lior Jacob Strahilevitz, *Shining a Light on Dark Patterns*, 13 J. LEGAL ANALYSIS 43 (2021). In empirical work it is well established that manipulations of choice architecture influence privacy choices in digital products. *See, e.g.*, Jan M. Bauer et al., *Are You Sure, You Want a Cookie? – The Effects of Choice Architecture on Users’ Decisions About Sharing Private Online Data*, 120 COMPUTS. IN HUM. BEHAV. 106729 (2021).

people are simply not able to effectuate their normative preferences in a market setting.³⁹ On the other hand, under interpretations of the privacy paradox in which the economic pricing is held to be the true preference and the stated preferences are thought of as cheap talk or costless virtue signaling, there is no need for concern about the largely unregulated⁴⁰ state of privacy markets.

The remainder of this Part draws on both theory and empirical data to address the question of whether privacy markets can be expected to serve consumers well, and for what reasons. Theoretical insights suggest that privacy markets will work contingent on the presence of rational, well-informed consumers. Empirical work provides abundant evidence that consumers in privacy markets are neither rational nor well-informed. All in all, there is little reason to expect privacy markets to function well. Nonetheless, existing accounts do not provide the novel contribution proposed here: taboo accounts for one, non-exclusive explanation for why privacy markets are unlikely to work to the benefit of consumers.

A. *Insights from Theorists*

Insights from legal and economic theorists provide some starting points for thinking about privacy as a taboo market. Consider first Margaret Jane Radin's work on *Market-Inalienability*.⁴¹ Radin proposed that market-inalienability, a compromise between universal commodification and universal anti-commodification, could sometimes be an appropriate mechanism to promote human flourishing in an imperfect world with taboo markets, protecting goods associated with personhood and personal dignity while also making allowances for material needs and desires. Radin might well have approved of the new wave of state data protection laws discussed *supra* as achieving just such a

39. We can also compare data markets to other taboo markets, such as the highly problematic market for opioids. Consider one way to understand the opioid crisis is of many people truly wishing not to be addicted to drugs that impair their abilities to function in basic roles, such as employees or parents, but being unable to consistently make choices consistent with their true preferences. A full backlash against the opioid crisis is now in full swing, with significant litigation, large awards, and substantial funding devoted to addressing this social crisis. Of course, the opioid crisis has also produced externalities, which may also be a significant explanatory variable in the government's decision to act. However, consumers' inability to follow their true privacy preferences likewise implicates both concerns about consumer welfare but also concerns about externalities. See Joshua A.T. Fairfield & Christoph Engel, *Privacy as a Public Good*, 65 DUKE L. J. 385 (2015).

40. By "largely unregulated," this piece refers to U.S. jurisdictions in which notice-and-consent governs data privacy. The vast majority of Americans still live in states that have not enacted comprehensive data privacy reform in recent years.

41. Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849 (1987).

midpoint between normative aspirations and reality, dealing effectively with the commercial realities of data commodification taboo. Her work indicated how normative values could be protected in the real world without undue restrictions on individual liberty and without undervaluing the material imperatives of day-to-day life. The permission for businesses to carry on with sales conditioned on the consumer's right to opt out might represent a middle ground Radin could embrace.

Consistent with Radin's advocacy of a middle way between existing forms of ownership, property scholars have come to the conclusion that the existing vocabulary for property and privacy is lacking. Decades ago, Pamela Samuelson considered whether personal data should be governed as a form of intellectual property.⁴² She concluded that existing forms of intellectual property rights are poorly matched to the policy goal of promoting appropriate levels of privacy.⁴³ Decades later, Julie Cohen reached a similar conclusion through a different path entirely, arguing that the vocabulary of "property," and also of "choice," forecloses prospects for data governance that do not revolve around atomized private-law notions of defining privacy rights.⁴⁴ Cohen argued that, once questions of property and choice are implicitly accepted, the range of potential privacy frameworks is effectively narrowed through choice of vocabulary.⁴⁵

Just as legal scholars have called for more nuanced approaches to taboo goods and questioned whether standard legal models can work for privacy, economic theorists have found that models of privacy markets suggest functioning conditions only in the case of rational market agents. For example, Curtis Taylor showed that the ability to make rational data control or sharing decisions is important to welfare outcomes in privacy markets, conditions that empirical scholars know to

42. Pamela Samuelson, *Privacy As Intellectual Property?*, 52 STAN. L. REV. 1125 (2000).

43. *Id.* Of course, property is not necessarily a commodity good. Nonetheless, law has at times used the demarcations of property to demarcate what is and is not appropriate for commercial traffic or amenable to legal remedies that recognize the economic value of a good. Consider, for example, the oft taught case of *Moore v. Regents of the Univ. of Cal.*, 793 P.2d 479, 480 (Cal. 1989), in which the Supreme Court of California concluded that the plaintiff could not access economic remedies through a claim of conversion for the nonconsensual use of his biological material to develop medical treatments. This effectively precluded any economic redress for the alleged wrongs done to the plaintiff.

44. Julie E. Cohen, *Turning Privacy Inside Out*, 20 THEORETICAL INQUIRES L. 1, 22 (2019).

45. *Id.* Cohen's arguments may explain the neglect of market-limiting regulatory proposals for data markets, despite the many comparable taboo markets in which such tactics are regularly applied, as discussed *id.* at 6–7.

be far from realistic.⁴⁶ More generally, Jack Hirshleifer has questioned the assumption that privacy behaviors could be understood and studied as purely market phenomena, instead citing the influence of biology, ecology, and culture as likely to influence complex behaviors associated with privacy.⁴⁷

In short, legal and economic theorists alike have described the difficulties of understanding how to study or govern privacy under typical conceptual divisions like intellectual property, common law forms of property, or markets. There is something challenging about governing privacy, even on a theoretical level, and the challenges grow even more apparent when we look to data on behavioral realities.

B. *Insights from Empiricists*

The dependence of functional privacy markets on rational, self-interested consumers necessarily raises questions as to whether such consumers indeed exist at all, and if so, with what abundance. The question of whether ordinary people *do* behave rationally with respect to privacy preferences was almost completely ignored by the empirical literature until quite recently. As Yi-Shan Lee and Roberto Weber noted in a groundbreaking working paper in 2019, then existing theoretical or behavioral scholarship on privacy left unaddressed the fundamental problem of testing for the very *existence* and *frequency* of rational privacy preferences.⁴⁸

Lee and Weber were likely the first experimentalists to measure whether individuals demonstrate rationally ordered privacy preferences. They designed an in-person laboratory experiment in which sensitive personal data points (body fat percentage and I.Q.) were measured. Student participants were then presented with pairs of options as to which

46. Curtis R. Taylor, *Consumer Privacy and the Market for Customer Information*, 35 RAND J. ECON. 631 (2004). In the economics literature, rational behavior is generally thought of as meeting some mathematical definition of the rational ordering of preferences. For example, such definitions are often motivated by assumptions that rational actors will have stable, mathematically ordered preferences, obeying basic mathematical assumptions, such as transitivity.

47. Jack Hirshleifer, *Privacy: Its Origin, Function, and Future*, 9 J. LEGAL STUD. 649, 663 (1980) (“Economic study of market interactions may yield satisfactory results while postulating purely egoistic men, acting within an unexplained social environment of regulatory law. But as the power of economics analysis comes to be employed outside the traditional market context, for example in the area of public choice, the egoistic model of man (as in ‘social contract’ theories) will not suffice.”).

48. Yi-Shan Lee & Roberto A. Weber, *Revealed Privacy Preferences: Are Privacy Choices Rational?* 6 (2019) (unpublished manuscript), <https://static1.squarespace.com/static/58318e41b8a79b98acd4fb9f/t/625343c458497c282010ae6b/1649624007826/Revealed+Privacy+Preferences+2022-03-10.pdf> [<https://perma.cc/929X-XDJW>].

data point (body fat percentage and/or I.Q.) would be presented and to how many of their fellow university students, with students indicating their preferences for any given pairing.⁴⁹ The key experimental question was whether participants traded off these preference pairings in a manner consistent with rationally ordered preferences.⁵⁰ Lee and Weber found that a majority (63%) of participants evinced consistent privacy preferences when trading off various privacy scenarios directly against other privacy scenarios (i.e. in-kind trades). However, these rationally-ordered preferences were not robust to the use of money. Use of monetary metrics for privacy valuations rather than direct privacy-privacy trade-offs resulted in a majority of participants (54%) deviating from expected rational orderings.⁵¹

Lee and Weber's results evince a mixed answer to the question of whether individuals can and do manifest rational privacy preferences. In a privacy-salient laboratory experiment, a majority of participants made rational choices in the scenario of privacy-privacy trade-offs. However, *only a minority of those same participants maintained consistently-ordered preferences once privacy options were traded against money*. Even under ideal circumstances, and among a participant pool of university students at an elite university,⁵² a claim of rational agents in privacy markets is a tenuous one at best, and altogether insupportable once privacy-for-money exchanges are involved. Further, even interpreted in the most generous light, Lee and Weber's results do not establish that individuals *do* evince rational responses in real world privacy markets but merely that, for a majority of participants in a highly stylized laboratory experiment at an elite university and under quiet laboratory conditions, some *can*.

Lee and Weber's results are particularly intriguing because they began with a relatively elite and sophisticated study population—students at a highly ranked university—and they gave those elite actors highly salient privacy stakes. Nonetheless, even in the case of relatively

49. The stakes were real. The data would be shown not just to other people but to fellow students at their university. *Id.*

50. More specifically, Lee and Weber looked to whether behavior was consistent with the Generalized Axiom of Revealed Preference (GARP). *Id.*

51. *Id.* at 23.

52. The participants were drawn from the University of Zurich, an institution regularly ranked in the top 100 universities in the world. In the most recent U.S. News and World Reports, the University of Zurich was ranked #67 globally. *University of Zurich*, U.S. NEWS & WORLD REP., <https://www.usnews.com/education/best-global-universities/university-of-zurich-505287> [<https://perma.cc/HM6D-CBW4>]. I do note, however, that not all students at the University of Zurich have necessarily passed through a rigorous vetting process, as 25% of students can enter the university without any entrance exam. Interview with Alexander Stremitzer, Professor, University of Zurich (2022).

sophisticated actors with quite salient privacy considerations, the experiment nonetheless failed to show a majority of participants exhibiting rationally-ordered preferences when trading money against privacy. Previous studies in other cases of bounded rationality have tended to suggest that research participants can demonstrate greater rationality when they have strong incentives to do so. Given the highly sensitive nature (to most people) of IQ and body fat percentage, Lee and Weber's participants ought to have been highly incentivized, but the participants still only achieved rationality around half the time.⁵³ These results suggest that in less clearly incentivized cases, including the stakes of real-world data privacy decisions, rates of rationally ordered privacy preferences would be far lower. The results also suggest the need for a mechanism to explain why the students performed so irrationally. Lee and Weber's results are consistent with (but not proof of) the taboo nature of data trades advanced in this work. The taboo nature of exchanging privacy for money could explain the decline in rationality Lee and Weber observed once privacy was directly traded for money.

Other studies offer further results that show how bounded rationality distorts consumers' behavior in privacy markets. Dan Svirsky studied information avoidance in participants who had access to a simple privacy policy but could choose to remain ignorant as to the contents of that privacy policy when deciding whether to sell their data to the researcher.⁵⁴ Svirsky showed that participants were more willing to sell personal information when permitted to remain ignorant of the associated privacy policy entailed by the sale. This occurred despite the fact that the privacy policies were nearly costless to read. Svirsky's results can be interpreted as consistent with participants *per se deriving value from avoiding information in the privacy policy* rather than from avoiding the work associated with reading the policy. In other words Svirsky shows that participants avoid mixing markets and privacy explicitly; they'd rather ignore privacy implications when they choose to engage in a market transaction.

Angela Winegar and Cass Sunstein found exaggerated bounded rationality effects when they conducted a large-scale survey of American

53. One question that necessarily poses itself here is what a "good" percentage would be. That is, what would a reasonable proportion of rational preferences look like? This is an open question. For example, Lee and Weber mention that their rationality measures are in line with other experimental work looking at other kinds of trade-offs, but they cite studies of varying designs that were deployed among varying populations. Thus, it is difficult to compare with certainty. In the table of results they cite, the range of frequency of rational behavior ranges from 10-90% suggesting that the typical rate of rationality is very much an unknown quantity. Lee & Weber, *supra* note 48.

54. Dan Svirsky, *Why Do People Avoid Information About Privacy?*, 2 J.L. INNOVATION 23 (2019).

adults regarding willingness to pay for privacy protections.⁵⁵ Specifically, the survey showed a large disparity regarding the monthly rate that respondents would be willing to pay to preserve the privacy of their data (WTP) as compared to the access fee they would charge for their data (WTA), with median values of \$5 and \$80 respectively.⁵⁶ Given this “superendowment effect,”—in which the typical scale of the endowment effect was magnified by several orders of magnitude—Winegar and Sunstein concluded that “little or no attention” should be given to WTP or WTA measures in establishing privacy preferences.⁵⁷ Winegar and Sunstein further suggested that people may use pricing metrics for an *expressive purpose* rather than an instrumental role; in other words, the very high prices powering the observed superendowment effect might reflect expressions of disagreement rather than information provided to facilitate a transaction.⁵⁸ I posit that the effect identified by Winegar and Sunstein can be described as a symptom of the tabooeness of data commodification. They identify pricing that was so extreme they posited it could have an expressive function. This is fully consistent with a tabooeness description of the behavior, in which refusal to price and high prices alike both express some moral disdain or concern regarding a transaction.⁵⁹

Further work confirms that extreme pricing behaviors are consistently found in economic experiments on privacy valuations. Consider a working paper by Avinash Collis and coauthors.⁶⁰ Collis et al. studied heterogeneity in data valuations. The authors measured the influence of economic information about data valuations on subjective valuations provided by research participants. They found that individuals were responsive to information about the market prices of data but that substantial variation in pricing remained even after valuation information was provided. From this, Collis et al. concluded that “consumer valuations of personal data are only in part influenced by market information,”⁶¹

55. A.G. Winegar & C.R. Sunstein, *How Much Is Data Privacy Worth? A Preliminary Investigation*, 42 J. CONSUMER POL'Y 425 (2019), <https://link.springer.com/article/10.1007/s10603-019-09419-y> [<https://perma.cc/XQ9L-GEV5>].

56. *Id.* at 425. As Winegar and Sunstein note, in typical endowment effect experiments, the multiplier between WTP and WTA is closer to 2 or 3, not 16 as it was in this case. *Id.*

57. *Id.* at 425.

58. *Id.* at 431.

59. There is no existing literature on expressive as compared to instrumental pricing, as this is a scholarly discussion in its earliest stages. These attributes are likely not entirely orthogonal but can represent mixed information baked into the same price.

60. Avinash Collis et al., *Information Frictions and Heterogeneity in Valuations of Personal Data* (2022) (unpublished manuscript), <http://dx.doi.org/10.2139/ssrn.3974826> [<https://perma.cc/6LAK-922A>].

61. *Id.* at 5.

a finding similar to previous experimental work on how market price influences data valuations.⁶² Such results suggest that pricing of data is not merely a valuation exercise, but an expressive exercise too. A particularly compelling detail from Collis et al.'s results—consistent with Winegar and Sunstein's theory of the *expressive role of pricing hypothesis* and the data commodification taboo thesis explored in this work—is that participants given higher data prices were least responsive to market information. The working theory proposed via the taboo description is that the high prices were not responsive to market information precisely because they were expressive prices related to moral disdain and not instrumental prices relating to promoting a transaction.

If pricing plays an expressive role, and that expression is against data transactions, this evidence supports a taboo against trading data for money. There is also some experimental evidence that supports this more directly. In a working paper by the author, lay judgments of medical data sales were studied.⁶³ Participants rated the fairness of a decision by a medical executive to sell or not to sell the medical records of patients, with reference to a specific buyer and with a specific purpose in mind for the funds that would be generated from a data sale. The results of that study showed that participants valued privacy so highly that it was functionally comparable to saving a child's life. Participants gave statistically equivalent mean fairness ratings for one scenario of selling data to fund a life-saving operation for a child with an alternative scenario of refusing to sell the data to fund a life-saving operation for the child.⁶⁴ This suggests that privacy can function as a sacred good, exchangeable with other sacred goods such as a human life or security but only controversially exchangeable for profane goods like money and market commodities.

In short, there is an abundance of experimental evidence related to data valuation and data trading that shows ordinary people consistently fail to show behavior evocative of a rational market participant, and further that the behaviors evince some avoidance of knowledge about a privacy trade as well as a high degree of volatility in pricing such trades. Even with university students in elite settings and in a high-saliency

62. See, e.g., Aileen Nielsen, *Measuring Lay Reactions to Personal Data Markets*, in AIES '21: PROCEEDINGS OF THE 2021 AAAI/ACM CONFERENCE ON AI, ETHICS, AND SOCIETY 807 (2021), https://ethz.ch/content/dam/ethz/special-interest/gess/law-neconomics/leb-dam/documents/Nielsen_AIES_21.pdf [<https://perma.cc/6L4B-R9K4>].

63. Aileen Nielsen, *Experimental Evidence on the Fairness of Medical Data Sales* (Sept. 2022) (unpublished manuscript), <https://www.research-collection.ethz.ch/handle/20.500.11850/572431> [<https://perma.cc/6RTD-QZLA>].

64. *Id.*

privacy experiment, participants exhibited particular shortcomings when providing monetary valuations for their privacy preferences, *showing a particular cognitive vulnerability in the case of data commodification*. In short, existing studies on pricing data suggest that consumers deviate very far from models of rational actors in privacy markets.

C. *An Experimental Strategy for Tabooness*

As described in the Introduction, this Article posits and tests a tabooness hypothesis regarding data commodification. Specifically, the work tests whether data commodification may reflect behavior that shows a taboo regarding data commodification. Parts II and III present two experiments to test the tabooness hypothesis by experimentally measuring how participants judge data sales. Part II presents a data sale experiment in which participants are invited to participate in a pricing exercise related to a proposed sale of either data or paper. Their willingness to participate in such an exercise and the prices they give are taken as an indication of their judgments as to the acceptability of selling data (or paper). In this way, participant attitudes regarding the moral valence of data sales are measured. Participants are also invited to indicate what portion of the proceeds should be shared with data subjects, providing information as to how their reactions might change if they had the opportunity to implement a data dividends policy. Part III presents another data sale experiment, slightly different from the first, which manipulates two additional factors that might mitigate the data sale taboo demonstrated in Part II: who is trading the data and what they are trading the data for, be it money or digital services.

The experimental design is modeled after work in the taboo trade-offs literature as presented by two of the foremost theorists of taboo trade-offs, Peter McGraw and Philip Tetlock.⁶⁵ Their original experiment measured how the social valence through which an object was obtained (e.g. through friendships, working relationships, etc.) influenced pricing behaviors, and by inference, moral judgments, when that same object was proposed for resale. In that study, the object was a pen. Sometimes the pen was regarded as inappropriate for resale, as when it was originally received as a gift from a peer or mentor.⁶⁶ At other times the resale of the pen was judged appropriate. In circumstances where the pen was received as a gift from a peer or a mentor, rates of refusal to price the pen for resale were high, while rates of refusal were zero where the pen had been previously bought at cost from a work colleague.⁶⁷ Further,

65. A. Peter McGraw & Philip E. Tetlock, *Taboo Trade-offs, Relational Framing, and the Acceptability of Exchanges*, 15 J. CONSUMER PSYCH. 2, 5 (2005).

66. *Id.* at 6.

67. *Id.* at 7.

in the case where the pen was received as a gift, the price for the pen was above market price even among participants who agreed to price the pen.⁶⁸ This circumstance didn't hold when the pen was originally acquired at cost, in which case it was priced at the prevailing market price for resale.

McGraw and Tetlock's experiment provides an empirical definition of taboo. When participants widely agree to price, and offer a price close to the market price, they demonstrate the behavior typical of an uncontested market practice and therefore demonstrate that the transaction is not taboo. On the other hand, when substantial portions of participants refuse to price a transaction, and where those who agree to price nonetheless deviate significantly upwards from the market price, this constitutes the pattern of a taboo transaction.

As will be shown *infra*, the results of the experiments in this work show that behaviors associated with data sales are consistent with taboo trade-offs, and that the taboo extends to many data transactions regardless of the market price, who is selling the data, and what the data is traded for.

II.

DATA SALES ARE TABOO, EVEN WITH THE PROSPECT OF REDISTRIBUTION

This first experiment concerns a website owner who is approached by a data aggregation firm to sell data about his website's users. The transaction is described as legal and consistent with the website's terms of service. The website owner, John, must decide whether to sell his data, and if so, what price to ask. Participants are invited to suggest a price, but also have the option to decline to provide a price because the sale should not take place. After the pricing exercise, participants are told that the website owner may wish to return some of the value of the data to the website users and are asked what portion of the proceeds should be returned to the users, again with the option to refuse to provide a number and instead say that the sale should not take place. The responses from the participants in response to this scenario can be used to address the first two experimental questions as posed in the Introduction:

Q1: How do ordinary people judge data sales?

Q2: Does the possibility of profit sharing mitigate objections to data sales?

A. Methodology

Both the experiments and analyses presented in this work were pre-registered on Open Science (osf.io). The preregistration

68. *Id.* at 8.

included the full experimental design, targeted sample size, experimental procedure, directed hypotheses about the outcome variables, and proposed analyses to test the hypotheses. Some analyses present in the work were not included in the pre-registration and are labeled as post hoc. All pre-registration documents are available on Open Science.⁶⁹

The R statistical package⁷⁰ was used for the data analysis, relying on base R functionality as well as the `data.table`⁷¹ and `TOSTER`⁷² packages. All reported pairwise comparisons are conducted as Wilcoxon rank sum tests. All reported equivalence statistics are the result of the two one-sided t-test methodology with a medium effect size (Cohen's $d = 0.5$). The full data set and analysis scripts are available online.⁷³

B. Design and Procedure

The experiment was a vignette study⁷⁴ with a 2 x 2 between subjects factorial design, meaning that every participant was assigned to one scenario reflecting a random variation of the experimental factors.⁷⁵ Participants read a vignette about John, the creator of an e-commerce platform to buy and sell auto parts. John was approached by a firm to sell something of value (either data or paper, depending on the experimental treatment) and has to decide whether to sell, and if so, how much to ask. The two experimentally-varied factors were the item to be sold (personal data of website users or unused paper supplies) and the typical market price for the item (\$5 or \$25 per unit). The structure of the experiment is shown in Figure 1, and the full screen flow and vignette text are available in the online Appendix.⁷⁶

69. Aileen Nielsen, *Draft of Open Science Pre-registration*, OSF (May 12, 2021), <https://osf.io/c9rm7> [<https://perma.cc/85DZ-UC52>].

70. *Getting Started*, THE R-PROJECT FOR STATISTICAL COMPUTING, <https://www.R-project.org/>.

71. Matthew Dowle, *data.table: Extension of 'data.frame'*, R-PROJECT (Sept. 27, 2021), <https://cran.r-project.org/package=data.table> [<https://perma.cc/JF2S-7DX3>].

72. Daniël Lakens, *Equivalence Tests: A Practical Primer for t Tests, Correlations, and Meta-Analyses*, 8 SOC. PSYCH. & PERSONALITY SCI. 355 (2017).

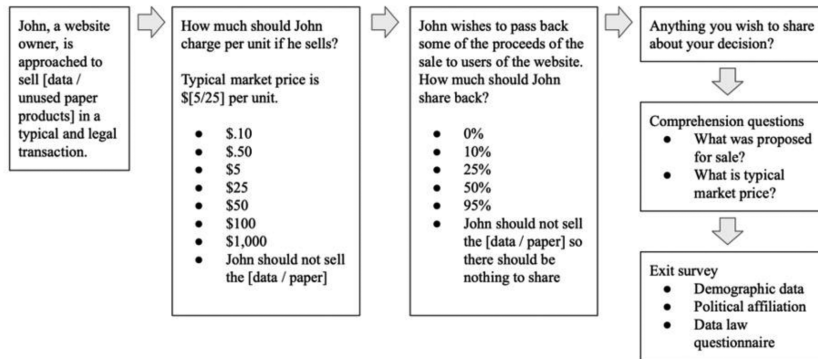
73. Aileen Nielsen, Appendix (2022), <https://osf.io/wy36u/> [<https://perma.cc/597X-58R7>].

74. "Vignette studies use short descriptions of situations or persons (vignettes) that are usually shown to respondents within surveys in order to elicit their judgments about these scenarios." Christiane Atzmüller & Peter M. Steiner, *Experimental Vignette Studies in Survey Research*, 6 METHODOLOGY 128, 128 (2010).

75. This means that all combinations of the two manipulations were equally likely, and that each participant was assigned with equal probability to one of the 2 x 2 = 4 possible treatment assignments.

76. Nielsen, *supra* note 73.

Figure 1:
The structure of the first data sale experiment provide for manipulations of the good sold (data or paper) and the market price (\$5 or \$25).



Having read the vignette, participants were asked first how much John should charge for the data (or paper) and how much of the proceeds John might consider passing back to his website users. In each case, participants were given the option not to provide a value and instead to indicate that John should not proceed with the sale. Participants were given the option to provide a voluntary freeform explanation for their decision. Finally, participants completed an exit survey related to demographic details.

C. Results and Discussion

Sample

A representative sample of 741 U.S. adults as stratified by age, race, and gender, was collected via the Prolific polling platform in July 2022.⁷⁷ The mean age of participants was 46 years old, with a standard deviation of 16 years. Forty-nine percent of participants identified as female, 49% as male, and 1% as non-binary. Eighty-one percent of participants identified as white.⁷⁸ 50% of participants identified as Democrats and 21.7% as Republicans.⁷⁹ 96% of participants passed the two pre-registered attention checks in the experiment and so were included in the analysis.

77. A target of 750 had been established, but the polling firm was unable to fill the last small portion of its quota.

78. 11% as Black or African American, 6% as Asian, and 2% as other. Due to a programming error, no option was provided to indicate Hispanic or Latino identity.

79. Additional portion of the sample identified as follows: 5.1% as members of third parties, and 21.7% indicated no political affiliation. The sample was not stratified on the basis of political affiliation, and the resulting sample likely includes a disproportionately low number of Republican participants. However, political affiliation was not

Q1: How do ordinary people judge data sales?

We first explore how participants judged data sales and whether their judgments followed the expected pattern for a taboo good. To answer this question, we look to two experimental outcomes: did the participants agree to provide a price at all for the data, and did they provide prices in line with market pricing?

Refusal to price indicates a taboo status for data but not for paper

Figure 2 presents participants' willingness to provide a price for data and for paper. The rate of refusal to price data was significantly higher than the rate of refusal to price paper (\$25: $W = 20744$, $p < .0001$; \$5: $W = 20854$, $p < .0001$). The rate of refusal to price data was very high indeed (\$25: 37.0%; \$5: 42.5%), and was significantly above 30% regardless of the market price (\$25: $W = 9056$, $p < .01$; \$5: $W = 10175$, $p < .0001$).⁸⁰ The behavior when participants were presented with a paper-selling scenario rather than a data-selling scenario was strikingly dissimilar. The rate of refusal to price paper was quite low (\$25: 8.1%; \$5: 7.9%), although statistically different from the pre-registered prediction of zero ($p < .01$).

The pattern of these "refusal to price" rates mirrors exactly what would be expected in the case of a data commodification taboo.⁸¹ Likewise, the refusal to price paper rates are low, showing the classic non-taboo transactional pattern in which participants universally judged an object appropriate for resale by agreeing to provide a price at the rate of 100%.⁸²

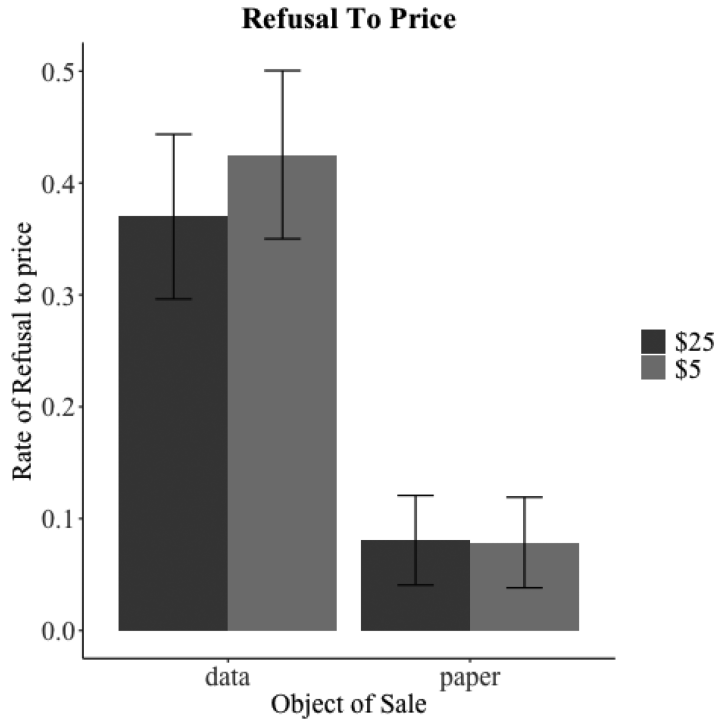
predictive of responses, so this sampling skew likely did not influence any experimental outcomes or conclusions.

80. The 30% rate is a post hoc comparison. A comparison was pre-registered at 40%, but the sample means made it unnecessary to run this test as the sample rate was not above 40%.

81. This work was discussed *supra* in the experimental strategy section of Part I. The rates of refusal to price found here are similar in magnitude with those found in survey work measuring consumer willingness to pay for digital product privacy features, which found refusal to pay rates of around 30% when participants were asked whether they would pay a fee for data security. Anna D'Annunzio & Elena Menichelli, *A Market for Digital Privacy: Consumers' Willingness to Trade Personal Data and Money*, J. INDUS. & BUS. ECON. 571, 580 (2022). Refusal to pay need not be the same as refusal to price, so the similarity in these magnitudes is merely suggestive of a substantial portion of ordinary people rejecting various market behaviors with respect to privacy, rather than conclusive evidence that the same 30% or more group of people will consistently refuse all market behaviors in privacy markets.

82. The results do not match McGraw and Tetlock's 100% agreement to price results precisely, but there are many situational differences that could account for this. McGraw & Tetlock, *supra* note 65. To the extent the results are inconsistent with McGraw and Tetlock, this can likely be attributed at least in part to substantial differences in

Figure 2:
The rate of refusal to price the good sold was significantly different as between selling data and selling paper.



Next, consider the results of a logistic regression analysis to predict refusal to price, as reported in Table 1, and including demographic indicators. Within the domain of the experimental manipulations, only the good sold (data or paper) ($p < .0001$) predicted refusal to price. The market price information had no effect, even when combined with the good sold; in other words, even within only those participants exposed to the paper sale there was no effect of the market price, and likewise for those exposed to the data sale. Demographic indicators also had no observed effect. Further confirmation

experimental conditions. Like much experimental work of that era (2005), McGraw and Tetlock's sample was limited to 240 undergraduates at a single undergraduate institution. *Id.* Their sample was collected in a paper and pencil exercise, not an online sampling scenario. *Id.* It is not surprising that the pricing behavior of a representative online sample of Americans in 2022 would differ from a non-representative sample of Ohio State undergraduates in 2005. Under the circumstances, a rate of 0% versus 7-8% seems reasonably close given the circumstances.

of the dominant influence of the good sold is that the rate of refusal to price was the same regardless of the market price, as analyzed by equivalence testing ($p < .001$). This is consistent with the results of the logistic regression that there is no effect of the market price on refusal to price. If the objections to the sale were economic, a higher price should lead to more participants showing a willingness to provide a price. The lack of a pricing effect suggests that the motivation for the refusal is not economic, but this same null effect is consistent with a tabooess hypothesis.

Table 1:

The results of a logistic regression for predicting refusal to price show a significant effect of the good sold as between data and paper but no effect of the market price, a set of results consistent with a tabooess hypothesis.

Variable	Coefficient	(SE)
Constant	.21***	(.06)
Selling Paper	-.29***	(.04)
Price (\$5)	.05	(.04)
Selling Paper * Price (\$5)	-.06	(.06)
Age	.002	(.001)
Ethnicity (White)	.04	(.04)
Gender (Male)	.01	(.03)
No Political Affiliation	.09	(.04)
Third Party Affiliation	.03	(.07)
Republican Affiliation	-.03	(.04)

* $p < .01$, ** $p < .001$, *** $p < .0001$

In summary, participants refused to price at significantly higher rates in the case of selling personal data than of selling paper. What's more, their refusal to price does not appear to be responsive to the market price. This suggests that there is something distinctive about how

participants judge transactions in privacy markets (the data) as compared to traditional commodities markets (the paper).

Pricing distribution indicates a taboo status for data but not for paper

Next, we consider the distribution of prices for those participants who elected to provide a price. As can be seen in Figure 3, the pricing distribution for paper looks like what one might expect. The modal price point is the market price point. There are some who would ask a little more or a little less than the market price, and this distribution of those asking a little more or a little less is symmetric about the market price. On the other hand, in the case of data, the distribution tilts right, towards higher prices, and is not symmetric about the market price. These differences are statistically significant. The portion of participants who priced above the market price differed according to the good sold (\$25: $\mu\chi(1) = 14.0$, $p < .001$; \$5: $\chi(1) = 5.1$, $p < .05$).⁸³

Thus, we see evidence for the systematic expressiveness of pricing in the case of the data pricing; the tilt above the market price suggests some expression of moral disagreement rather than facilitation of a transaction. These results are consistent with those of Winegar and Sunstein and from Collis et al., both of whom suggest a limited connection between data subject price valuations and market pricing information. It need not be surprising that pricing is not wholly determined by information about the market price,⁸⁴ but these results for data are strikingly different from pricing for other goods, like paper, which follows the market price more closely and distributes around the market price more symmetrically.⁸⁵ The distribution of pricing therefore presents evidence consistent with the data sales taboo hypothesis.

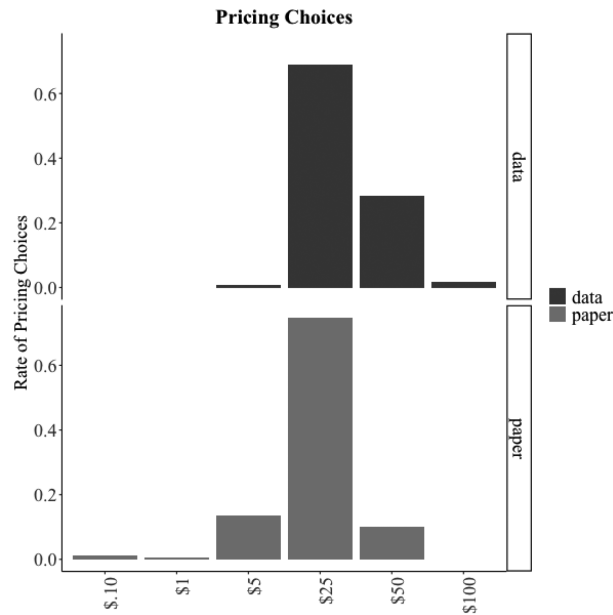
83. The choice of test is post hoc although the comparison of distributions is not. A Kolmogorov-Smirnov distribution test was pre-registered but later rejected as inappropriate for the discretely distributed pricing options available to participants.

84. For example, even in the case of *homo economicus*, pricing would also be expected to reflect personal utility and relative bargaining power.

85. There are many reasons why, particularly in the case of data subjects pricing their own data, valuations should diverge from market price. Even beyond data, it is to be expected that goods will have heterogeneous valuations for consumers, and this phenomenon is part of what gives rise to consumer surplus.

Figure 3:

The distribution of price choices for paper and data are markedly different, with paper showing a normal distribution centered at the market price and data showing a right-biased distribution suggestive of expressive and morally-tinged pricing.



We further explore what factors influenced the prices chosen by participants with a regression on the ordinal price values, as presented in Table 2.⁸⁶ Both experimental manipulations, the market price and the

86. Ordinal ranking rather than the dollar value was chosen as more consistent with the experimental design. However, the choice of regression did not make a substantial difference to the results, with the same predictors significant regardless of whether the ordinal ranking or numerical dollar value of a choice was used. Application of ordinary least square regression is a frequent practice and widely accepted in the behavioral sciences (as in the case of regression analysis applied to Likert scale data). Primary areas of possible concern from this practice relate to higher error rates and some limitations on interpreting the effect sizes, but those concerns would not impact the substantial effects of the experimental treatments seen here. See Paul-Christian Bürkner & Matti Vuorre, *Ordinal Regression Models in Psychology: A Tutorial*, 2 ADVANCES METHODS & PRACS. PSYCH. SCI. 77 (2019), <https://doi.org/10.1177/2515245918823199> [<https://perma.cc/TDY9-DZ5X>]; see also Ron Fricker, Professor, Naval Postgraduate School, Presentation on Linear Regression Analysis for Survey Data, <http://faculty.nps.edu/rdfricke/MCOTEADocs/Lecture%2015%20-%20Linear%20Regression%20Analysis%20for%20Survey%20Data.pdf> [<https://perma.cc/MPA3-YQMP>] (last visited Sept. 16, 2022). For further robustness checking, therefore, a post hoc ordinal regression analysis was undertaken, which likewise indicated the same predictors as

good sold, significantly influenced market price.⁸⁷ The magnitude of the effect of the price was larger than that of the good sold, but the nature of the item sold had a significant effect even among those willing to price. In other words, for goods that have the same market price, and among people who have already opted to price the good (despite having the option not to do so), the nature of the good still matters significantly in determining the price. The effect of market price does not contravene the tabooeness of the data sale, as even in the case of tabooeness, market information is integrated into trade-offs.⁸⁸

Table 2: Linear regression to predict pricing choices.

Variable	Coefficient	(SE)
Constant	5.49***	(.11)
Selling Paper	-.41***	(.08)
Price (\$5)	-1.11***	(.08)
Selling Paper * Price (\$5)	.16	(.11)
Age	-.001	(.002)
Ethnicity (White)	-.14	(.07)
Gender (Male)	-.05	(.05)
No Political Affiliation	.04	(.07)
Third Party Affiliation	.01	(.07)
Republican Affiliation	-.01	(.12)

* p < .01, ** p < .001, *** p < .0001

significant. The ordinal regression modeling was implemented with a cumulative link model from the ordinal package available in the R programming language. Rune Haubo B. Christensen, *Cumulative Link Models for Ordinal Regression with the R Package Ordinal*, COMPREHENSIVE R ARCHIVE NETWORK: CRAN PACKAGE REPOSITORY (2022) https://cran.r-project.org/web/packages/ordinal/vignettes/clm_article.pdf [https://perma.cc/3D3C-U76M] (last visited Sept. 16, 2022).

87. We acknowledge briefly the ethnicity coefficient in the results. No pre-registered directed hypotheses were recorded regarding demographic factors, and so these results should not be treated as conclusive. The negative sign of the white ethnicity coefficient, indicating that participants identifying as white were more likely to price items lower, is contrary to the results of Collis et al., who found that those from historically marginalized communities, including non-white participants, were more likely to price their own data lower, not higher. Collis et al., *supra* note 60. However, the task of Collis et al. was different from this experiment, as was the source and content of the pricing information. Most importantly, any demographic effect is small relative to the effect of the experimental treatments.

88. In the words of Collis et al., “[c]onsistent with recent work on privacy decision making, our analysis . . . suggests that consumers’ valuations of their data are the composite

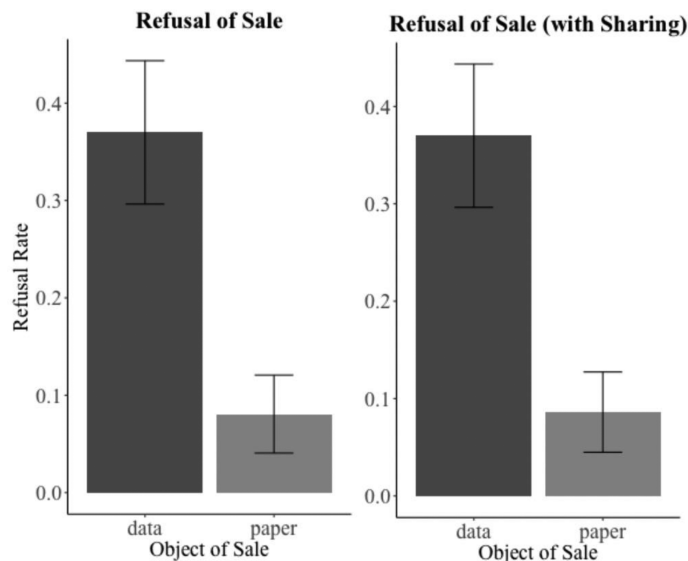
Q2: Does the possibility of profit sharing mitigate objections to data sales?

We next turn to the question of whether data dividends might mitigate participants' reactions otherwise triggered by the taboo nature of data sales. After completing the pricing evaluation, participants were told that John might want to pass some of the value from the transaction to the website users and that he could easily do so. Participants were asked to indicate what portion of the proceeds John should consider sharing.

Strikingly, the possibility to share did not change the portion of participants who indicated that the data should not be sold. As shown in Figure 4, the sharing behavior mirrors the pricing behavior in two key ways. The rate of refusal to set a sharing percentage was statistically equivalent to the rate of refusal to price the data (\$25: rate of refusal 37.0%; \$5: rate of refusal 42.5%) under both market pricing treatments (\$25 and \$5: $p < .0001$).⁸⁹ This equivalence suggests that the decision to share the economic gains of a data sales transaction would likely not be influential in adjusting participants' willingness to price the transaction.

Figure 4:

The refusal rates for the sale were *unaltered* when participants were presented with the possibility of profit sharing.



of *objective* or instrumental factors—such as knowledge of the fair market value of one's data, which information interventions can affect—and inherently and deeply subjective or intrinsic ones—such as individuals' personal stances on data privacy, or the psychological harm different individuals associate with violations of their data." *Id.* at 5.

⁸⁹. All the sharing choice and distribution comparisons are post hoc.

Even among those not refusing the transaction, we can again observe differences between data and paper. The modal sharing recommendation is 10% for both paper and data. The proportion of participants who indicated that John should share more than the modal value of 10% was higher in the case of data than in the case of paper (\$25: $\chi(1) = 16.9$, $p < .001$; \$5: $\chi(1) = 16.9$, $p < .001$). This difference in the distribution suggests that a more generous distributive impulse was more common for participants contemplating a data sale than for participants contemplating a paper sale. This pattern also suggests a possible intuition among the participants that data subjects have some form of moral rights to some portion of the profits produced by a sale of personal data.⁹⁰ On the other hand, whatever moral rights participants might have ascribed to the data subjects, they nonetheless opted to retain the lion's share of economic value for the website owner.

D. *Experimental Conclusions*

The results of the first experiment match exactly the postulated pattern for a taboo item, as derived from prior work in the taboo trade-offs literature. Participants rejected pricing the data sale at high rates. Even when participants were offered the opportunity to adjust the data sale such that most of the economic returns could go to data subjects, they rejected the sale at the same high rates. Further, the distribution of pricing for data was different as compared to paper, showing more deviations upward from the market price than was the case for paper.⁹¹

90. Notions that data is in some way connected to data subjects might prompt more interest in economic redistribution. This is consistent with accounts of privacy related to separability. For an overview of the many theories of separability as a rationalization and justification for privacy laws, see generally Mark Verstraete, *Inseparable Uses*, 99 N.C. L. REV. 427 (2021).

91. One possible objection is that a higher price expresses greater uncertainty about the risk of selling and therefore a higher risk premium baked into the price. This objection would continue that the reason for the higher price is simply greater uncertainty about the price and therefore a greater risk premium for data as compared to paper. However, in another work-in-progress, I show ways in which the pricing behavior associated with uncertainty about risk or valuation can be distinguished from pricing behavior motivated by moral censure, as is the case here. Aileen Nielsen, *Pilot Results: Moral Censure Versus Value Uncertainty* (2023) (unpublished manuscript) (on file with author). In that experimental work, the pricing distribution for a good of uncertain valuation (computer code) showed a bimodal pricing distribution in the absence of market price information, in contrast to the taboo good (data about website users or about businesses). The pricing distribution for a good of uncertain valuation was less responsive to the market price information than was the pricing distribution for a taboo good. Finally, the freeform natural language explanations of pricing behaviors provided by the research participants invoked the language of markets and business for pricing a good of uncertain valuation but relied on the language of morality and norms for pricing a taboo good.

This suggests that the taboo definition is one that can be robustly operationalized to describe data commodification. Taboo goods were previously defined as goods for which people would refuse to provide prices at high rates and where the prices provided would skew markedly higher than the market price. Both behaviors were observed here. The pricing behaviors seen in this experiment are consistent with the hypothesis that data sales are taboo.

The results of this experiment are consistent with an anti-commodification taboo, but there are two key questions this first experiment does not resolve. First, what if the observed behavior—the reluctance to price data and the tendency to price data higher than its market price—comes from the fact that the website owner is selling the data rather than the fact that the data is being sold? It could be that the normative objection that drives participant responses is related to *who* is selling the data rather than the *act* of selling of the data. Second, might an anti-commodification taboo be limited to exchanges for *monetary consideration* as some states have implicitly hypothesized by cabining the statutory right to opt out of data sales only to data-for-money transactions? We next move on to analyze the results of an experiment that can address these key open questions.

III.

DATA SALES ARE TABOO REGARDLESS OF WHO SELLS AND FOR WHAT

This second experiment builds upon the results in the data sales experiment by probing two follow-up questions. First, to study whether the taboo derives from a proprietarian objection relating to *who* properly owns and can sell data, this experiment varies the identity of the data seller, as between a website owner and a website user. Second, to understand whether the impulse against a data sale is limited to exchange for monetary consideration or is broader, the experiment varies whether an exchange was proposed for money or for a digital good.⁹² This second experiment can therefore answer the third and fourth experimental questions posed in this work:

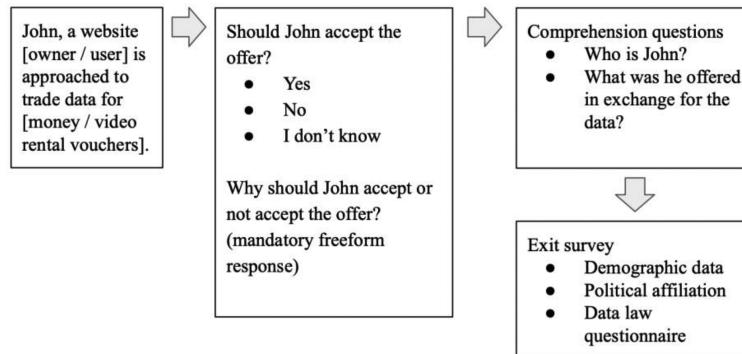
- Q3: Does the possibility of data subjects directly selling their own data mitigate objections to data sales?
- Q4: Does bartering data for digital services rather than for monetary consideration mitigate objections to data sales?

92. Because this study took into account that sales are taboo, the use of the word “sell” and its cognates is strictly avoided. Instead, the experiment describes an “offer.”

A. Design and Procedure

The experiment was an online vignette study with 2 x 4 between subjects factorial design.⁹³ Participants read a vignette about John, who is either the creator or the user of an e-commerce platform to buy and sell auto parts. John has been approached for his data (which he has control over as a website owner or which he can export as a website user). He is offered some monetary compensation (\$5/\$25) or some unrelated digital goods (1 movie rental voucher/5 movie rental vouchers) in exchange for the data.⁹⁴ After reading this scenario participants were asked whether John should accept the offer, with options of yes, no, or maybe.⁹⁵ Participants were also asked to provide a justification in their own words for their decision. The flow of the experiment is shown in Figure 5, and the full experimental text is provided in the Appendix. The design of the experiment as well as hypotheses regarding the results were pre-registered with Open Science.⁹⁶

Figure 5:
The second data sales experiment provided for experimental manipulations of the identity of the data seller (a website owner selling data about others or a website user selling his own data) and of the proposed medium of exchange (money or digital services).



93. This means that all combinations of the two manipulations were equally likely, and that each participant was assigned with equal probability to one of the $2 \times 4 = 8$ possible treatment assignments.

94. Some experimentalists may question whether this is in fact a $2 \times 2 \times 2$ factorial design, given that two of the price treatments are monetary and two are digital goods, with two levels in each treatment factor. I elect to describe this as a 2×4 experiment because no change was made in the vignette other than where the price was displayed (that is, no other emphasis or mention was made of the monetary versus digital good distinction). In any case this is largely a matter of semantics that does not influence the methods used or outcome of the analyses.

95. The vignette was designed to avoid the use of the word sale so as not to assume what form a sale should take.

96. Nielsen, *supra* note 69.

The experimental manipulation regarding John's role was designed to reflect a situation in which proprietarian influences—that is attributions of data control or morality premised on a notion of ownership by the data subject—might manifest in the experimental results. If a proprietarian impulse in favor of the data subject drove participant reactions, we would expect that a data subject selling his own data should generate less resistance relative to a data controller selling data about someone else. Concretely, we would expect that this could substantially reduce opposition to the data sale when the appropriate “owner” of the data (potentially, the data subject) is also the seller.⁹⁷

The experimental manipulation regarding what John is offered in exchange for the data was designed to reflect two alternate situations and to assess the degree to which such situations might be condemned as data sales. It could be that only exchanges of data for money affront the normative sensibilities of participants, in which case the exchange of data for other digital goods should be judged differently from the exchange of data for money. This manipulation offers the possibility to probe for such an effect.

B. Results and Discussion

Sample

A representative sample of 716 U.S. adults was collected in the Prolific polling platform in July 2022.⁹⁸ The mean age of participants was 46 years old, with a standard deviation of 16 years. Fifty-two percent of participants identified as female, 46% as male, and 1% as non-binary. 82% of participants identified as white.⁹⁹ Forty-eight percent of participants identified as Democrats, 21.3% as Republicans, 3.9% as members of third parties, and 26.9% reported no political affiliation. 82% of participants passed the two attention checks in the experiment and were included in the analysis.

97. This scenario is entirely feasible among data subjects who already possess data portability rights, as in the case of the CCPA or of the European Union's General Data Protection Regulation (GDPR). The extent to which users are able to make commercial use of their data, rather than to use these data access and data portability rights merely to inspect their data, is unclear. There is not yet a test case of a firm suing a user for commercializing their own data. One can expect that if such behavior became common that firms might take action against this behavior. Consider a lawsuit one airline took against a website that was encouraging users to share their login credentials so as to compile airline points information in one place. Francesca Maglione, *The Points Guy Must Face American Airlines Suit Over Frequent Flier App*, BLOOMBERG (May 20, 2022, 4:53 PM), https://www.bloomberg.com/news/articles/2022-05-20/the-points-guy-must-face-american-airlines-suit-over-mileage-app?leadSource=reddit_wall [<https://perma.cc/7H8H-TUAW>].

98. As in the case of the data owner experiment, the polling firm was unable to deliver the full 750 participants targeted for recruitment.

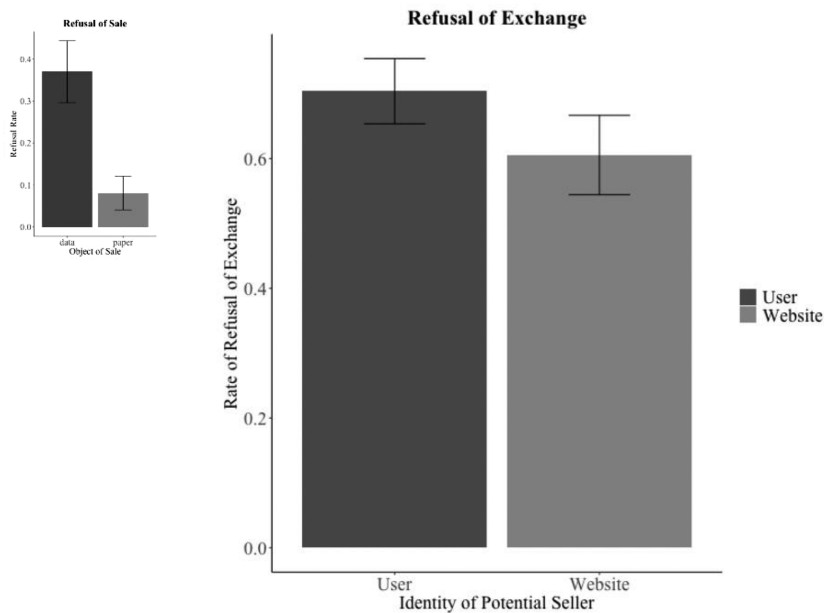
99. 12% of participants identified as Black or African American, 5% as Asian, and 1% as other. Due to a programming error, Hispanic or Latino identity was not included in the options for participants.

Q3: Does the possibility of data subjects directly selling their own data mitigate objections to data sales?

Given the oft-floated idea of data property rights for data subjects, we might imagine that a data subject selling his own data would be a scenario considered acceptable even if a website selling the personal data of others is not acceptable. As can be seen in Figure 6, this surprisingly proves not to be the case. If anything, the results suggests that a person selling his own data presents an even stronger prompt for refusing the transaction than does the case of a website selling data.¹⁰⁰ In all experimental manipulations, refusing the transaction was uniformly high at above 40% regardless of the circumstances ($p < .0001$ ¹⁰¹).

Figure 6:

The data transaction is refused at high rates regardless of *who* sells the data. This shows that the taboo remains, in contrast to the low refusal rates shown in the classic commodity case of paper and pictured in the upper left hand inset.



100. It could be that in the case of contemplating a data subject selling his own data, participants would be attuned to the fact that the data security risks would fall on the data subject himself, providing an additional reason apart from the taboo to refuse the transaction. On the other hand, where a data controller sells the data, he would not bear that data security risk although he might arguably face some new legal risks.

101. $p < .05$ for the case of the website owner exchanging data for \$25 per data point. In all other cases $p < .0001$.

There was nonetheless a statistical effect of the identity of the proposed data seller, as can be seen in the regression results predicting refusal to price, as shown in Table 3. Participants did distinguish in their judgments between a website owner and a website user selling data, with refusal more likely in the case of the website user ($p < .0001$).

Table 3:
Logistic regression to predict refusal of the transaction.

Variable	Coefficient	(SE)
Constant	.29	(.42)
Party Selling (Website)	-1.43***	(.36)
Sales language	.70*	(.30)
Price (\$5)	-.28	(.35)
Price (1 movie voucher)	.30	(.35)
Price (5 movie voucher)	-.10	(.37)
Party Selling (Website) * Price (\$5)	.82	(.50)
Party Selling (Website) * Price (1 movie voucher)	1.87**	(.58)
Party Selling (Website) * Price (5 movie voucher)	1.76**	(.54)
Age	.012	(.006)
Ethnicity (White)	.10	(.24)
Gender (Male)	.08	(.19)

* $p < .01$, ** $p < .001$, *** $p < .0001$

This effect of identity on refusal of the transaction could potentially be interpreted as consistent with imagining the choices of a rational self-interested actor who perceives greater potential costs or risks implicated in the transaction, such as identity theft, for a website user than for a website owner. In other words, the costs to the data subject of selling his own data may indeed be perceived to be (and may in reality be) higher for data subjects than for website owners. Yet risk or differential costs cannot come close to explaining the results. If data transfers were viewed as a non-taboo transaction in which one party gets the better end of the deal by selling the data, surely—at least for one party—a particular offer should be a good one. Yet a large minority—sometimes even a majority of participants—indicated that John should refuse the transaction across *all treatment groups* encompassing either a data subject (a website user) or a data controller (the website owner). The participants are not behaving as purely economic assessors who should see a good deal for at least one party or the other.

Therefore, the effect of taboo remains the theory most consistent with explaining the results, rather than perceptions of risk or relative cost,¹⁰² even if tabooeness does not explain the pricing behavior entirely.¹⁰³

Q4: Does bartering data for digital services rather than for monetary consideration mitigate objections to data sales?

We now consider the final experimental question as to whether it matters to ordinary people whether data is exchanged for money or for some other valuable consideration.

Refusal of the data transaction is high regardless of the medium of exchange

Motivated by a bifurcation in state definitions of sales for purposes of defining opt-out rights, we next consider the effect of the medium of exchange for data transactions, to see whether exchanging data for non-monetary consideration removes the taboo against the transaction. As can be seen in Figure 7, for data subjects the medium of exchange does not change the rate of refusal; the rates are equivalent in all cases with marginal significance ($p < .1$). This suggests that states that have defined a sale narrowly for opt-out purposes, limiting the data sales opt-out rights to exchanges for “monetary consideration,” likely do not honor the full range of objections that ordinary people entertain against such transactions. The research participants demonstrated strong resistance to exchanging data for money but also for other valuable consideration, as they demonstrated high rates of refusal regardless of whether the transaction was proposed in exchange for monetary consideration or for other valuable consideration (in this case, rental video vouchers). These results tend to support the more inclusive definition of sales as adopted by some innovating states, including California, Colorado, and Connecticut.¹⁰⁴ These states have likely adopted the sale opt-out definition that more closely tracks the intuitions of ordinary people.

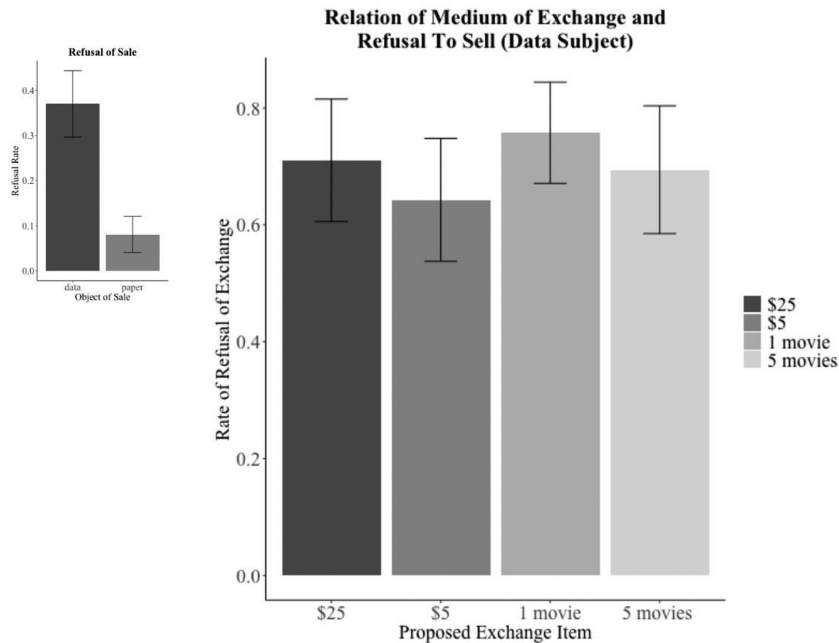
102. It is certainly likely that multiple phenomena are at play here, including differences in an approximation of a rational self-interested economic calculation of costs and benefits and differences in priors in the different scenarios as to the value of data and the risks of selling data for both the reputation of the business and the security of the data subject. These might explain differential responses to different pricing-owner combinations. However, as shown in Figure 6, the effects of any such considerations are small relative to the effect size of the refusal itself. This is another way of saying that the variance does not overwhelm the mean, or more simply, that the refusal rates are clearly much higher than zero in all cases.

103. For example, if one is going to sell one’s kidney, one would of course prefer to get the better price and to have the operation performed in a safer hospital. Worldly considerations are not entirely eliminated by the presence of a taboo affecting a transaction.

104. *Nielsen*, supra note 1.

Figure 7:

The refusal rate was only minimally affected by the proposed good to exchange for the data (monetary or non-monetary). None of these compares to the effect of a taboo sale versus a non-taboo sale as shown in the case of selling data versus paper in the upper left hand inset.



Classifying the exchange as a sale makes refusal more likely

To avoid baking conclusions into the experimental study, this study deliberately omitted a description of the potential exchange as a sale; the proposed communication about the exchange was simply described as an offer. Likewise, descriptions of pricing were avoided. Yet many participants identified the potential transaction as a sale and said so in their freeform responses. The presence of “sale” or “sell”¹⁰⁵ was predictive of refusing the sale as indicated by a logistic linear regression. This suggests a connection between how participants themselves classified the proposal and whether they supported the transaction. Those who classified the potential exchange as a sale—as evidenced by their use of that word—were more likely to say John should refuse the offer than

105. Cognates were identified by tabulating all uses of all words among the freeform responses and looking for words related to sales. Exploratory data analysis revealed that there were few other words expressing this idea of selling, so only “sale” and “sell” were used for the sake of simplicity.

were those who did not manifest evidence of such a mental classification. This circumstantial evidence tends to suggest the cultural salience of data sales and therefore suggests that legislators who leaned heavily on terminology relating to selling and profiting likely chose language and concepts that they knew would resonate with the electorate.

C. Experimental Conclusions

The second experiment robustly tested the outer limits of the data sales taboo. Data sales transactions elicit responses from participants that exactly match the predicted outcome under the empirical definition of taboo posited in this work, even when data subjects sell their own data and even when data subjects exchange data for a digital service rather than for money. The medium of exchange need not be monetary to render a transaction taboo, showing that the distinction some states make in the sales opt-out right between exchanges for money and exchanges for other consideration of value is not a demarcation that resonates with data subjects. The taboo against data sales is broad, encompassing scenarios that politicians and legislators seem to think they could address by granting greater economic rights to data subjects. Yet given the experimental results here, such approaches appear unlikely to appease public sentiment.

The experimental results suggest that some elements of taboo trade-off behavior, such as moral outrage, aversion to the task, and exaggerated bounded rationality effects, are likely manifesting in privacy markets. This tabooess explains the strong emotions Americans sometimes evince when they contemplate the state of the technology sector. It also likely explains some effects documented in empirical studies of privacy markets, such as the superendowment effect identified by Winegar and Sunstein or the information avoidance identified by Svirsky. Tabooess explains a host of real-world phenomena as well as a host of empirical scholarship. It is a productive and generative concept for understanding why the literature on privacy preferences shows that preferences are so easy to manipulate: this is a hallmark of behavior when participants face additional cognitive burdens due to juggling tabooess alongside other challenges of negotiating in markets. Future work should take seriously this tabooess and account for it when explaining experimental results.

These two experiments, however, left unexplored many alternative and more common forms of data exchange currently practiced in the Big Data economy, like data sharing,¹⁰⁶ in which firms might make their

106. For example, one census of news coverage about data transfers suggests that data “sharing” agreements, in which firms provide data access to one another, is a far more

data stores available without a monetary payment and perhaps without even requiring any quid pro quo, likely with the informal understanding of some later relational favor to be expected. As described in the Introduction to this Article, data sales are not a very common circumstance in the real world. In comparison, data sharing between firms and monetizing algorithms developed from stores of data are far more common and economically important business arrangements.

The research results raise many additional questions as to reactions to more common scenarios. For example, how might ordinary people judge data sharing or access to models trained with their data, and on what basis? The current research design did not invite judgments regarding these more common forms of data sharing because they will not typically be covered by all state statutory data sales opt-out rights. Nonetheless, to the extent that a taboo will drive future technology policy, it is important to understand just how far the taboo extends. The current set of results raise interesting questions about whether other widely documented activities in the Big Data economy are also likely to trigger taboo-mediated responses that enhance the effects of bounded rationality and therefore point to special consumer protection concerns.

IV.

IMPLICATIONS OF THE EXPERIMENTAL RESULTS

The experimental results demonstrate a strong pattern that ordinary people will opt out of a market pricing exercise for data when given the choice. This refusal to price in data markets is reminiscent of earlier findings from the taboo trade-offs literature of refusals in non-data markets and suggests taboo as a shorthand for describing and understanding this aversion.

So far, this may merely be an academic exercise as to what to call a pattern of experimental results. But this pattern of experimental results has important policy ramifications. As discussed below, these policy ramifications are twofold. On the one hand, recognition of the taboo triggers a host of challenges for crafting privacy law and a host of concerns about consumer protection. On the other hand, the now-demonstrated strength of this taboo provides some insight into how eleven diverse

common transaction (or more commonly publicized transaction) than exchanges of data for money. Morad Elsaify & Shariq Hasan, *Some Data on the Market for Data* (2020) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3568817 [<https://perma.cc/TRR9-UKZ8>]. Likewise, Bridget Fahey has documented the same phenomenon of data sharing in government, with government actors seemingly increasingly sharing data with one another. Bridget A. Fahey, *Data Federalism*, 135 HARV. L. REV. 1007 (2022).

states, all enacting privacy law reform, came to universally grant a consumer right to opt out of data sales. The strength of this cultural taboo shows how a cultural preoccupation may have distracted legislators from more economically important business practices, providing some insights into the political economy of data protection reform.

A. *Culturally Aware Privacy Reform*

The experimental results point to significant limits on what kinds of data protection reform proposals are likely to be productive. Given that we have now lived for at least two decades in a world in which personal data is routinely captured and commodified, it seems reasonable to think that—unlike attitudes about other digital practices that rapidly evolved, such as online dating—the data commodification taboo could be here to stay absent policy interventions to target the taboo.¹⁰⁷ If policymakers and legislators wish to craft data protection regimes that follow the intuitions of ordinary people, or in the alternative if they at least wish to understand how the taboo will interact with policies they otherwise wish to adopt, these legal stakeholders should take note of the anti-commodification taboo and account for its presence when calibrating privacy policy.¹⁰⁸

Existing proposals that take data commodification as a point of departure—that is, ones proposing mechanisms to facilitate data exchanges rather than to limit them or challenge their existence—will likely fail to address consumer outrage that manifests against the Big Data economy. Some of that consumer outrage may very well be channeled directly from the data commodification taboo. As the results in this work show, the tabooeness of data sales appears to be a widely shared norm. Given this widely and strongly held normative viewpoint of the tabooeness of data commodification, data protection proposals that accept and even

107. The stickiness of the data sales taboo seems significant. Consider that dating services and online dating (or online-arranged sexual encounters) used to be looked down upon and taboo. Now dating apps are mainstream, and marriage announcements often include details from married couples that they met via a dating app. Thus, while technology has sometimes resulted in rapid changes in taboo, this has not been the case with respect to data sales, despite the pervasiveness of data collection and data-related economic activities.

108. Doing so would seem to be a reasonable policy goal absent very strong contra-vening considerations. Of course, there are other statutory regimes that go against the intuitions of ordinary people. Contracts, taxation, and intellectual property all represent areas of the law where the moral intuitions of ordinary people strongly diverge from both the state of the law and also from desirable regimes from efficiency perspectives. Therefore, there can be strong reasons to counter strong moral intuitions by ordinary people. However, the case has been made to show specific reasons why data protection regimes ought to defer to a commodification logic. As shown in *supra* Part II, in fact, the preconditions assumed for the functioning of privacy markets that benefit consumers is rational behavior by consumers—an assumption that seems inconsistent with reality.

promote an unfettered economic and technical right to continue violating anti-commodification norms will likely continue to engender outrage among ordinary people. If this is the case, the current crop of data protection statutory reforms at the state level may fail to satisfy consumers insofar as these reform efforts continue to set a default of unfettered data commodification, apart from the few and far between examples of individual consumers laboriously exercising their opt-out rights.

The taboo also poses an empirical question as to whether policymakers should embrace and shore up the taboo or fight it. In this latter case, one possible reform would be to reshape the taboo itself. For example, policymakers might consider encouraging greater familiarity with and saliency of data commodification to inure data subjects to the practice and ultimately encourage them to shed the taboo. This might very well promote the well-being of consumers; as they developed experience and comfort with data commodification, they might better be able to understand and pursue their own self-interest, acting more like the rational, self-interested agents presupposed in models of privacy markets, such as those proposed by Taylor¹⁰⁹ and by Jones and Tonetti.¹¹⁰ Such a proposal would take commodification as a point of departure rather than a point of interrogation. This could very well be a legitimate policy choice, one in which the innovation effects of data availability were judged to be valuable and in which norm-changing policymaking was expected to be useful. Concretely, such norm-changing policymaking could manifest in several ways. One might imagine that data controllers could be given affirmative obligations to provide consumers with valuations of their data, or that the IRS might attribute imputed data income to ordinary people, thereby requiring them to pay income taxes on it. Such interventions would encourage ordinary people to actively think about the economic value of their data and to treat information about themselves as an economic asset rather than a dignitary one.

Of course, there would be costs to familiarizing data subjects more closely with data commodification as an erstwhile form of inoculation against the perils of taboo-induced bounded rationality. Any benefits of data subjects developing experience in privacy markets as such might be offset by the potentially corrosive effects of such experiences. In the case of data markets, for example, everyone putatively benefits sometimes from decisions by others to protect privacy and to oppose data

109. Taylor, *supra* note 46.

110. Charles I. Jones & Christopher Tonetti, *Nonrivalry and the Economics of Data*, 110 AM. ECON. REV. 2819 (2020), <https://doi.org/10.1257/aer.20191330> [<https://perma.cc/V7J5-QELP>].

transactions,¹¹¹ but such privacy-protecting, even altruistic, behaviors might decrease if legal reform makes data commodification more accepted and privacy-seeking behaviors less common.¹¹²

On the other hand, policymakers might take the data commodification taboo as a reason to challenge data commodification itself rather than to accept it as a starting point for policymaking. If we consider interrogating data commodification itself, we might instead take the anti-commodification norm as a given and seek to support people who choose to adhere to the norm.¹¹³ One possibility that would represent a taboo-supporting legal intervention would be to replace the legal requirement of notice-and-consent, an opt-out regime, into a legal requirement of a rigorous opt-*in* regime, perhaps with substantial obstacles posed against opting in.

While this change might seem relatively minimal from a conceptual perspective, it would challenge data commodification itself in two distinct ways. First, an opt-in practice expresses a norm in the way that law can be understood to have an expressive function; an opt-in practice would express that policymakers expected that the typical consumer would not choose to share their data, making this the representational norm. Second, empirical research shows that an opt-in regime rather than an opt-out regime can create substantial changes in behavior and would thus likely rapidly decrease the rate at which data subjects would have data harvested for commercial purposes.¹¹⁴

As in the case of taboo-combatting policies, these taboo-promoting policies might have costs as well as benefits. While the benefits would

111. Cf. Fairfield & Engel, *supra* note 39. There are many strong contemporary examples that show this is not merely a matter of theory but of practicality. For example, some European-descendant Americans' lack of caution in providing their data to direct-to-consumer genetic testing companies has resulted in a situation in which a majority of such Americans can be identified via existing genetic registries, regardless of their own decision of whether to participate in those registries. Yaniv Erlich et al., *Identity Inference of Genomic Data Using Long-Range Familial Searches*, 362 SCIENCE 690 (2018) <https://www.science.org/doi/10.1126/science.aau4832> [<https://perma.cc/4ZPZ-5A2Z>].

112. Of course, the reality is likely to be quite nuanced. We all sometimes benefit when others choose pro-privacy behaviors. On the other hand, we likely all sometimes benefit when others choose to share data, as in the classic case of medical research.

113. Just as the government continues to offer marriage, at least in part as a recognition of widely shared normative values regarding the fundamental good associated with a lifelong partnership and a stable unit around which to build a family, we might also ask whether government might tilt the laws not to coerce individuals into a certain privacy attitude but at least to craft legal regimes that can assist those with a widely shared commodification taboo who wish to comport themselves in a way more consistent with that belief.

114. See, e.g., Yee-Lin Lai & Kai-Lung Hui, *Internet Opt-In and Opt-Out: Investigating the Roles of Frames, Defaults and Privacy Concerns*, SIGMIS-CPR 253 (2006).

arise in terms of creating a legal regime that more closely matched intuitions, thus creating moral legitimacy for the privacy laws, they might come at substantial costs to innovation and economic growth. But, to date, the calculation of such costs has not been made, and it is an equation that bears working out in detail.¹¹⁵

B. *Political Economy in Technology Policy*

Firms' own statements and some empirical evidence suggest that data sales—at least those narrowly understood as trading data for monetary consideration—are not economically significant in the Big Data economy. The state statutory focus on data sales, particularly in the case of states that strictly cabined the data sales to exchanges for monetary consideration, would thus be puzzling where one assumed that the statutes were designed to tackle objective privacy risks or the data-fueled economic dominance of large technology firms.

Thus, many of the data sales opt-out rights—specifically those implemented as a right to opt-out of exchanges of data for monetary consideration—are all but toothless. Large tech firms are rarely if ever found transferring their own caches of data to other firms.¹¹⁶ For the most part, Big Tech companies do not make their data repositories available to third parties, even if they sell services based on using the data for profiling.¹¹⁷ Several large technology companies have even made public statements that they “do not sell” opt-out provisions in the CCPA and other state statutes do not apply to them because they don't sell data.¹¹⁸ Of course, that is only their say-so and needs some independent verification.

It is, however, difficult to investigate empirically the claims by these firms that they do not trade in data for money. One source of information about data sales is media coverage. Marketing scholars Morad

115. This work offers no guidance as to whether reduced data flows would be desirable but simply explores the very different legal decisions that would be made if legislators sought to craft a legal regime that more closely tracked the sentiment of a data modification taboo.

116. *Your Data is Shared and Sold...What's Being Done About It?*, KNOWLEDGE AT WHARTON (Oct. 28, 2019), <https://knowledge.wharton.upenn.edu/article/data-shared-sold-whats-done/> (“It might surprise some to know that many major corporations also don't actually sell their consumer data because it is valuable. . .”).

117. *Id.*

118. “Some of the biggest firms, including Facebook, Amazon and Google, contend the ‘do not sell’ request part of the CCPA doesn't apply to them because they don't sell our data.” Fowler, *supra* note 12. “They just make billions off our data by using it to target ads and train artificial intelligence software.” *Id.* On the other hand, large technology firms have been identified in empirical work looking at the prevalence of data sales. Elsaify & Hasan, *supra* note 106, at 11.

Elsaify and Sharique Hasan conducted a recent study of data sales by searching media coverage of large technology firms as either consumers or suppliers of data.¹¹⁹ Of the transactions that could be identified, only 17% were one-way transactions for monetary exchange while 16% of the transactions appeared to be a provision of data in exchange for nothing, and 60% were “data sharing” agreements whereby firms in the same or similar industries mutually swapped or made data available to one another.¹²⁰ By the numbers in this study, data sales cabined to exchanges of data for monetary consideration are only a small minority of transactions, and indeed are no more common than data being given away freely.

In light of the data commodification taboo identified in this work and the lack of economic importance of data-for-money exchanges, we can understand the data sales opt-out right not necessarily as a vindication of consumer anger but as a clever compromise between industry and culture. Where state legislators sought to satisfy taboo-influenced constituents while pleasing industry lobbyists, the choice of a highly salient and highly symbolic ban on a culturally taboo and financially unimportant practice would have proven quite an effective means to satisfy both sets of stakeholders. Consumers would have achieved a highly symbolic dignitary victory, and firms would (largely) have avoided needing to change their established business practices.

This conclusion that data protection laws offer only a bare dignitary victory rather than an economic one does not mean that lawmakers chose incorrectly. It may very well prove that all consumers really want is a dignitary victory. If consumers in post-reform states—even those that provide only the more limited right to opt out of data-for-money exchanges—do in fact evince satisfaction with their degree of privacy and control over their personal data, maybe all they were looking for was an assurance, however empty, that their dignitary interests would be protected.

On the other hand, those who were looking for real privacy reform—in the sense of reducing data flows rather than simply creating symbolic rights—may very well consider state opt-out rights to be more illusory than meaningful.

CONCLUSION

This work makes two key contributions to the privacy literature. First, the work identifies a synthesizing tabooess interpretation that

119. Elsaify & Hasan, *supra* note 106.

120. *Id.*

can explain a host of existing empirical results and strong experimental evidence that supports this synthesizing interpretation that data commodification is *robustly* covered by taboo. Second, through the strength of the empirical results, the work highlights that ongoing reform embodied in new state privacy legislation has a strongly symbolic element likely driven by taboo rather than by substantively informed information policy. Legislators looking to refine existing state data privacy statutes or to craft better ones would do well to heed both the power and peril of taboo in crafting technology legislation. While taboo can be a powerful motivating force for political cohesion around a culturally salient phenomenon, good data privacy policy should look to economic and technical realities rather than to culture alone.