

Article

10

15

16

19

20

27

28

31

32

Ethics Paper

Audrey Bertin¹

- ¹ Smith College Department of Statistical and Data Sciences Northampton, MA, USA;
- * Correspondence:

Version April 19, 2021 submitted to Water



- Simple Summary: A Simple summary goes here.
- Abstract: [Coming soon]
- **Keywords:** keyword 1; keyword 2; keyword 3 (list three to ten pertinent keywords specific to the
- article, yet reasonably common within the subject discipline.).

The United States is currently facing a crisis of personal data privacy. In recent decades, a new era in the digital world—commonly termed the *Internet of Things*, or IoT—has emerged. The IoT refers to the devices and people who enable the sharing of data worldwide, and is used to characterize the modern internet age as one whose focus is now on big data.

Improvements in computing power and internet speed, alongside the development of new technologies capable of storing and utilizing massive quantities of data, have ushered in a new economic age: the data economy. Data is now a hot commodity, with the power to be incredibly valuable to those with the technology to utilize them. The Big Data Strategist at Oracle—a major software company—once said that "data is in fact a new kind of capital on par with financial capital for creating new products and services." (When data is capital: Datafication, accumulation, and extraction). Data provides this value through several means: by enabling businesses to profile and target people, leading to higher success rates in attracting customers; by providing information that can be used to help optimize systems; by helping manage and control things; by allowing companies to model probabilities more accurately; and by allowing certain software to operate in a way that would not be possible otherwise. (When data is capital: Datafication, accumulation, and extraction)

Much of this data comes directly from the general public—the people who use the goods and services produced by companies who participate in the data economy, such as Amazon, Google, and Facebook. Consumers' data is collected constantly. Amazon tracks users' purchases and voice commands—even going so far as to track the lines highlighted in books bought by Kindle readers. (https://www.theguardian.com/technology/2020/feb/03/amazon-kindle-data-reading-tracking-privacy). Google tracks every search users make, every YouTube video they watch, their full calendar schedule, their Gmail messages, everywhere they go, how long they stay there, and what route they take—even if Google Maps is not open (https://medium.com/swlh/an-in-depth-look-into-all-the-ways-google-tracks-you-in-2019-b158acf05b29).

This large-scale data collection poses significant ethical implications when considering the potential effects on consumers. For one, there is the concern of data breeches. Since user data is collected and shared over the internet, it is at risk of being released—or taken for nefarious purposes—through cyber-hacking events. Just last year, hundreds of millions of facebook users' phone numbers, locations, and emails were stolen (https://www.npr.org/2021/04/09/986005820/after-data-breach-exposes-530-million-facebook-says-it-will-not-notify-users). Facebook is not alone; many other companies have seen serious data breaches in recent years: Yahoo, Experian, Twitter, and Microsoft, to name a few (https://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/).

This danger is heightened further in situations involving private health or financial data, leaving consumers at risk of negative impacts from the release of sensitive health information, as well as possible identity theft and financial harm. Additionally, the misuse or unwanted release of information on polarizing issues such as religion, sexual and gender identity, or data indicating the use of abortion services could potentially put vulnerable consumers in harms' way—making them targets for attack.

There is also the danger that data, even in its intended use, can result in harms to consumers. Large scale data collection of consumers is often used to power machine learning algorithms, which use data to make predictions about people. These algorithms—though seemingly objective at first glance—are often negatively biased toward minoritized people (use definition from Data Feminism & cite!). For example, facial recognition algorithms built in large part off of Facebook photos misidentify black women at a significantly higher rate than other groups (source).

Data can also be used for psychological manipulation. Sites like Facebook and Twitter have a wealth of data on their users—enough to predict with high accuracy how they will react when exposed to certain stimuli. These sites can use that knowledge to spread targeted messages and actively change the beliefs held the public. This is what happened in the 2016 election, when Facebook's advertising system targeted those individuals it calculated to be likely susceptible to conservative messaging with advertisements that reflected the ideals of Donald Trump. Though not known for certain, it is widely believed that these advertisements may have convinced enough voters to support President Trump that he eventually won the election. (Source)

The practice of mass data collection is far from ethically sound. In spirit—though never declared by law—it violates one of the founding principles of the United States: individuals' right to privacy. The right to privacy is a crucial foundation of this country. It was first officially alluded to in the Fourth Amendment to the constitution—though it is implied to some degree in the First, Third, and Fifth as well—and has been reinforced at the highest levels of the judicial system for centuries.

The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized. – Fourth Amendment

It also puts individuals' First and Fourteenth Amendment rights at risk. Freedom of speech and of expression are placed at risk through the danger of data breeches—users who fear that their data may be taken and used by unauthorized individuals may refrain from sharing controversial opinions or personal information on religion, sexual orientation, or other sensitive matters online, for fear that it may be used against them, when they would have otherwise done so if not fearful of an information breach. The equal protection clause of the Fourteenth Amendment is likewise threatened. Although not necessary intentional, the bias present in the mass public/consumer data algorithms has the effect of treating equal groups differently, which—if used in certain circumstances—can violate the principle that all people deserve equal protection under the law.

Now, more than ever, Americans have lost faith in the ability of companies to protect their private data, and trends only seem to be getting worse (http://www.pewinternet.org/2017/01/26/americans-and-cybersecurity/).

Despite all of the dangers and ethical concerns inherent in mass data collection, companies still continue to practice it because of the significant capital benefits. Lawmakers in the United States have recognized the problem and attempted to solve it through legislation, but their efforts have fallen short. The US has failed to produce any comprehensive legislation on data privacy at the federal level and at the state level there exists only a patchwork of laws, plagued by inconsistencies, conflicting information, and sub-optimal enforcement procedures (https://www.cfr.org/report/reforming-us-approach-data-protection).

Healthcare data is by far the most protected variety, though even it lacks a clear and comprehensive piece of legislation. The Health Insurance Portability and Accountability Act (HIPAA) only applies

- to certain "covered entities," the list of which is often unclear to the general public. Student health records are covered under a different law, the Family Educational Rights and Privacy Act, which
- occasionally combines or conflicts with the Children's Online Protection Privacy Act (COPPA), meant only to protect the data of children under 13 years of age. 89
- This failure to protect personal data is unique among the Western industrialized countries. 90 Problem setup:
- In US, big challenge w/information privacy:
- the internet of things (https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?referer= 1. &httpsredir=1&article=3622&context=bclr)
- data commodification data as capital (https://www.google.com/url?sa=t&rct=j&q=&esrc= 2. 95 s&source=web&cd=&ved=2ahUKEwiD8NynpIXwAhWnAZ0JHS2aDpsQFjACegQIAhAD& url=https%3A%2F%2Fresearch.monash.edu%2Ffiles%2F303893944%2F303893762_oa.pdf& usg=AOvVaw09nsGbgbaIQ7dJa-sP-ITn) (https://columbialawreview.org/content/paying-forprivacy-and-the-personal-data-economy/)
- Dangers: 3.

91

- data breaches + data used against you (financial info, identity theft, health data particularly 101 damaging) 102
- interest targeting a very powerful tool to cause dangerous psychological shifts (see FB scandal) 103
 - tools to enable exclusion (see sexual orientation scanner, ER triage algorithms)
- 105

107

130

https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article= 106 3622&context=bclr

- Current protections in us: https://columbialawreview.org/content/paying-for-privacy-108 and-the-personal-data-economy/https://iclg.com/practice-areas/data-protection-laws-and-109 regulations/usa https://www.cfr.org/report/reforming-us-approach-data-protection 110
 - 5. What other countries have done that we haven't
- GDPR in EU https://gdpr-info.eu 112
- South Korea https://iapp.org/news/a/gdpr-matchup-south-koreas-personal-information-113 protection-act/, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2904896 114
- Chile https://cms.law/en/int/expert-guides/cms-expert-guide-to-data-protection-and-cybersecurity-laws/chile https://www.eff.org/deeplinks/2020/09/look-back-and-ahead-data-116 protection-latin-america-and-spain 117
 - 5. Why it's hard for us to do the same
- We don't currently have an agency that could be focused on managing data protection closest 119 is FTC but they don't have oversight power of lots of private companies
- Powerful tech lobby at federal level has huge leverage on voting 121
- All the states are so different from one another so state-only laws would be a challenging patchwork if not controlled 123
- potentially not enough public support. In US, we're just used to our data being used all the time. 124 However, concern does seem to be growing.

https://www.washingtonpost.com/news/powerpost/paloma/the-cybersecurity-202/2018/ 126 05/25/the-cybersecurity-202-why-a-privacy-law-like-gdpr-would-be-a-tough-sell-in-the-u-s/ 127 5b07038b1b326b492dd07e83/

It COULD work though — look at HIPAA!! It is super strict in the healthcare industry, and goes pretty smoothly. tech companies have adapted to make HIPAA compliant software

131 7. What we should do

DON'T TRY TO CREATE WHOLE PRIVACY LAW — will not work in the current climate. No way to enforce and considerably too big of a jump. Work in smaller steps w/less punishment

- Create a data protection agency
- focus on prevention, not monetary punishment (better incentives for companies)
- widen the definition of what can count as a data-privacy related harm to afford more opportunities
 to individuals to take problems to court as well as what is considered sensitive data https:
 //www.cfr.org/report/reforming-us-approach-data-protection
- On the statewide level, if wanting to create laws, do so with an eye for making them consistent.

 Once a majority of states have them, more pressure for federal change
- Eventually do need federal law. Should attempt to get both Republican and Democratic support which apparently already exists (https://www.theregreview.org/2021/03/13/saturday-seminar-how-should-united-states-protect-data/)

Acknowledgments: All sources of funding of the study should be disclosed. Please clearly indicate grants that
 you have received in support of your research work. Clearly state if you received funds for covering the costs to
 publish in open access.

© 2021 by the authors. Submitted to *Water* for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).