ConsumersUnion®

THE ADVOCACY DIVISION OF CONSUMER REPORTS

August 20, 2018

Federal Trade Commission
Office of the Secretary
600 Pennsylvania Avenue, NW
Suite CC-5610 (Annex C)
Washington, DC 20580

Re: Competition and Consumer Protection in the 21st Century Hearings, Project Number P1812201

9. The consumer welfare implications associated with the use of algorithmic decision tools, artificial intelligence, and predictive analytics;

Antitrust

For Consumers Union's[1] comments on antitrust and competition issues pertaining to this topic please see: *Comments of Consumers Union—Antitrust and Competition Issues*.

Consumer Protection

Algorithmic decision tools and predictive analytics are being used to make decisions about consumers without sufficient transparency, testing, or accountability. While there is great potential in these emerging technologies, consumers need greater protections for the use of these tools. Accordingly, Congress should give the Federal Trade Commission (FTC) more authority and resources to create rules for the use of algorithms in light of insufficient applicable federal and state law. Finally, we propose principles for the use of algorithmic decision-making tools.

Algorithmic Decision Tools and Predictive Analytics

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[1] Consumers Union is the advocacy division of Consumer Reports, an expert, independent, non-profit organization whose mission is to work for a fair, just, and safe marketplace for all consumers and to empower consumers to protect themselves. Consumers Union works for pro-consumer policies in the areas of antitrust and competition policy, privacy and data security, financial services and marketplace practices, food and product safety, telecommunications and technology, travel, and other consumer issues, in Washington, DC, in the states, and in the marketplace. Consumer Reports is the world's largest independent product-testing organization, using its dozens of labs, auto test center, and survey research department to rate thousands of products and services annually. Founded in 1936, Consumer Reports has over 6 million members and publishes its magazine, website, and other publications.

Algorithms are routinely used to determine insurance rates,[2] creditworthiness,[3] willingness to pay,[4] and employment prospects.[5] In addition, algorithmic tools are employed to: serve search engine results;[6] match children with schools;[7] detect employment,[8] healthcare, and Medicaid fraud[9] (sometimes erroneously[10]); and identify biometric markers.[11] Unfortunately, despite the notion that algorithms are neutral and objective arbiters, algorithms can exacerbate bias or have unexpected discriminatory effects. The discriminatory effects stem from historical data sets, lack of rigorous testing, and from the imperfect and inherently biased people who create them.[12] For instance, Latanya Sweeney's research found that Google searches for stereotypically African American names were more likely to generate ads suggestive of an arrest than a search for stereotypically

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[2] *See*, *generally*, Rachel Goodman, *Big Data Could Set Insurance Premiums, Minorities Could Pay the Price*, ACLU (July 19, 2018), https://www.aclu.org/blog/racial-justice/race-and-economic-justice/big-data-could-set-insurance-premiums-minorities-could.

Health insurance: *Lifestyle Choices Could Raise Your Health Insurance Rates*, PBS NEWS HOUR (July 21, 2018), https://www.pbs.org/newshour/show/lifestyle-choices-could-raise-your-health-insurance-rates; Marshall Allen, *Health Insurers are Vacuuming Up Details about You—and It Could Raise Your Rates*, PROPUBLICA (July 18, 2018), https://www.scientificamerican.com/article/health-insurers-are-vacuuming-up-details-about-you-and-it-could-raise-your-rates/.

Car insurance: *Auto Insurers Charging Higher Rates in Some Minority Neighborhoods*, CONSUMER REPORTS (Apr. 4, 2017), https://www.consumerreports.org/media-room/press-releases/2017/04/propublica_and_consumer_reports_auto_insurers_charging_higher_rates_in_some_minority_neighborhoods11/; Enrique Dans, *Why It's Time to Rethink Car Insurance*, FORBES (July 24, 2018), https://www.forbes.com/sites/enriquedans/2018/07/24/why-its-time-to-rethink-car-insurance/#51b7fca91037.

[3] *Understanding Credit Score Algorithms*, AMPLIFY (Dec. 8, 2017), https://www.goamplify.com/blog/improvecredit/understanding-credit-score-algorithms.aspx. For more on this topic, please see Consumers Union's response to Topic 2: *Competition and consumer protection issues in communication, information, and media technology networks*.

[4] *See*, *e.g.*, Nicholas Diakopoulos, *How Uber Surge Pricing Really Works*, WASH. POST (Apr. 17, 2015), https://www.washingtonpost.com/news/wonk/wp/2015/04/17/how-uber-surge-pricing-really-works/?utm_term=.b7ecadd3dc6b; *How Uber's Surge Pricing Algorithm Works*, CORNELL UNIV. (Mar. 17, 2016), https://blogs.cornell.edu/info4220/2016/03/17/how-ubers-surge-pricing-algorithm-works/.

[5] Alexia Elejalde-Ruiz, *The End of the Resume? Hiring is in the Midst of a Technological Revolution with Algorithms, Chatbots*, CHICAGO TRIBUNE (July 19, 2018), http://www.chicagotribune.com/business/ct-biz-artificial-intelligence-hiring-20180719-story.html.

[6] Dave Davies, *How Search Engine Algorithms Work: Everything You Need to Know*, SEO (May 10, 2018), https://www.searchenginejournal.com/how-search-algorithms-work/252301/; *and*, *see*, Latanya Sweeney, *Discrimination in Online Ad Delivery*, SSRN (Jan. 28, 2013, *available at* https://ssrn.com/abstract=2208240.

[7] Alvin Roth, *Why New York City's High School Admissions Process Only Works Most of the Time*, CHALKBEAT (July 2, 2015), https://www.chalkbeat.org/posts/ny/2015/07/02/why-new-york-citys-high-school-admissions-process-only-works-most-of-the-time/.

[8] *See*, *e.g.*, NORTH CAROLINA GOVERNMENT DATA ANALYTICS CENTER, NC IT, https://it.nc.gov/services/nc-gdac (last visited Aug. 17, 2018).

[9] Natasha Singer, *Bringing Big Data to Fight Against Benefits Fraud*, N.Y. TIMES (Feb. 20, 2015), https://www.nytimes.com/2015/02/22/technology/bringing-big-data-to-the-fight-against-benefits-fraud.html.

[10] VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR, p. 5 (2018) [hereinafter AUTOMATING INEQUALITY].

[11] Robert Triggs, *How Fingerprint Scanners Work: Optical, Capacitive, and Ultrasonic Variants Explained*, ANDROID AUTHORITY (Feb. 9, 2018), https://www.androidauthority.com/how-fingerprint-scanners-work-670934/; Rod McCullom, *Facial Recognition Technology is Both Biased and Understudied*, UNDARK (May 17, 2017), https://undark.org/article/facial-recognition-technology-biased-understudied/; *How Facial Recognition Algorithm Works*, BECOMING HUMAN (Oct. 16, 2017), https://becominghuman.ai/how-facial-recognition-algorithm-works-1c0809309fbb.

[12] *See* Cathy O'Neil, *How Algorithms Rule Our Working Lives*, THE GUARDIAN (Sept. 1, 2016), https://www.theguardian.com/science/2016/sep/01/how-algorithms-rule-our-working-lives.

white names (regardless of whether the company placing the ad reveals an arrest record associated with the name).[13]

Use of Algorithms in Employment

The biases of "neutral" algorithms are especially apparent in online job recruitment and dynamic pricing. Algorithms are heavily used in the employment sector to filter job applicants and present ads to desired applicant pools. Companies have turned to algorithms to help neutralize biased hiring practices and to help prevent costly employee churn. Unilever, Walmart, and Goldman Sachs, for example, have all turned to algorithms to recruit and sort job applicants.[14] Currently, the majority (72 percent) of all resumes are sorted by algorithms and never seen by human eyes.[15] The substitution of computers for humans in the hiring process has resulted in an employment system where "applicants who are skilled in sprinkling buzz phrases and keywords throughout their resume are often favored in hiring."[16] Job-matching algorithms that assess the likelihood of employee retention and success can also be biased against those who are poor.[17] Xerox discovered that a now-defunct program they used for evaluating applicants likelihood of quitting relied heavily on how far away an individual lived from the job site. [18]

Although companies have sometimes turned to algorithms to realize the goal of making hiring more neutral, in practice these algorithms can *increase* bias. For instance, in 2015, researchers at Carnegie Mellon found that women were less likely to be shown ads for high-paying positions.[19] Researchers have also shown that young women were less likely to be presented with an employment ad in a STEM field than young men due to an algorithm that optimized the cost-effectiveness of the ad placement. Ironically, since young women are a more prized demographic, the supposedly gender-neutral algorithm actually favored displaying a STEM employment ad to men.[20] In addition, some personality tests used in the hiring process have been alleged to violate the Americans with Disabilities Act of 1990.[21]

Unfortunately, prejudice and bias are unlikely to be completely eliminated from employee recruitment, regardless of whether an algorithm or human resources personnel conducted the selection and hiring process.[22] However, human resource departments and companies using

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[13] *Discrimination in Online Ad Delivery*, *supra* note 5.

[14] Wanda Thibodeaux, *Unilever is Ditching Resumes in Favor of Algorithm-Based Sorting*, INC. (June 28, 2017), https://www.inc.com/wanda-thibodeaux/unilever-is-ditching-resumes-in-favor-of-algorithm-based-sortingunilever-is-di.html.

[15] *How Algorithms Rule Our Working Lives*, *supra* note 12; *and, see*, CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY, p.
152 (2016) [hereinafter WEAPONS OF MATH DESTRUCTION].

[16] Shiva Bhaskar, *Algorithms, Big Data and Accountability*, MEDIUM (Sept. 30, 2016), https://medium.com/@shivagbhaskar/algorithms-big-data-and-accountability-8924bf9e2b24.

[17] *How Algorithms Rule Our Working Lives*, *supra* note 12.

[18] *Algorithms, Big Data and Accountability*, *supra* note 16.

[19] Samuel Gibbs, *Women Less Likely to be Shown Ads for High-Paid Jobs on Google, Study Shows,* THE GUARDIAN (July 8, 2015), https://www.theguardian.com/technology/2015/jul/08/women-less-likely-ads-high-paid-jobs-google-study.

[20] Anja Lambrecht & Catherine E. Tucker, *Algorithmic Bias? An Empirical Study into Apparent Gender-Based Discrimination in the Display of STEM Career Ads*, SSRN (Mar. 9, 2018), https://ssrn.com/abstract=2852260.

[21] *How Algorithms Rule Our Working Lives*, *supra* note 12.

[22] Gideon Mann & Cathy O'Neil, *Hiring Algorithms are Not Neutral*, HARV. BUS. REV. (Dec. 9, 2016),

algorithms to find and select candidates should be encouraged to routinely evaluate the algorithms they use.[23]

Dynamic Pricing

Online retailers use algorithms to create dynamic, individual prices, also known as first-degree price discrimination, on the basis of consumers' assessed willingness to pay. Since 2000, Consumers Union has investigated the murky pricing practices by airlines and travel companies online, and reporting on what Consumer Reports has termed "disturbing evidence of bias" in how airfares are presented to the public. In recent years some of these marketing schemes have come to light, particularly after the International Air Transport Association—the global airline industry's leading trade organization—unveiled "New Distribution Capacity,"[24] a detailed program to enhance "product differentiation." And a recent study commissioned by an aviation company reported that airlines are developing "dynamic availability of fare products" that "could be adjusted for specific customers or in specific situations."[25]

In October 2016, Consumer Reports published an extensive study of nine leading travel sites and compared identical itineraries, in real time, using both "scrubbed" browsers cleared of all "cookies" and browsers used for extensive web searches.[26] Among 372 searches, CR found 42 pairs of different prices on separate browsers for the same sites retrieved simultaneously. Industry representatives dismissed these disparities as technological glitches; but CR has found similar evidence of dynamic pricing in previous years.[27] Accordingly, Consumers Union supports Senator Chuck Schumer's call for the FTC to investigate the airline industry amid questions about the use of "dynamic pricing," and the use of consumers' personal online data to set the price of airfares, which Schumer termed "a sad state of affairs that just might violate consumer protections."[28]

These practices are not restricted to the travel and airline industry. In 2012, an investigation by the Wall Street Journal found that Staples would quote a cheaper price to a consumer who lived near a competitor store.[29]And consumers are also steered to bad deals or poorer products through the

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https://hbr.org/2016/12/hiring-algorithms-are-not-neutral.

[23] Human resource departments could help assess their company's hiring algorithms by carrying out randomized spot-checks on machine resume decisions and then put them through an extensive human review in order to uncover potential biases. In addition, HR employees could conduct manual reviews of the correlations that the machine learns and eliminate those that appear biased. *Id.*

[24] NEW DISTRIBUTION CAPABILITY, IATA, https://www.iata.org/whatwedo/airline-distribution/ndc/Pages/default.aspx (last visited Aug. 17, 2018).

[25] *Advances in Airline Pricing, Revenue, Management, and Distribution: Implications for the Airline Industry*, PODS RESEARCH (Oct. 2017), https://www.atpco.net/sites/default/files/2017-10/ATPCO%20PODS%20Dynamic%20Pricing_2.pdf.

[26] William J. McGee, *How to Get the Lowest Airfares*, CONSUMER REPORTS (Aug. 25, 2016), https://www.consumerreports.org/airline-travel/how-to-get-the-lowest-airfares/.

[27] *Id.*

[28] In the letter to the FTC, Senator Schumer cited recent news reports of airlines developing software that could track their potential customers' online browser histories and use that data to decide how much to charge them for a flight. *Consumers Union Praises Senator's Call for FTC Investigation go Airline "Dynamic Pricing"*, CONSUMERS UNION (Mar. 12, 2018), https://consumersunion.org/news/consumers-union-praises-senators-call-for-ftc-investigation-of-airline-dynamic-pricing/.

[29] Jennifer Valentino-DeVries, *et al.*, *Websites Vary Prices, Deals Based on User's Information*, WALL ST. J. (Dec. 12, 2012), https://www.wsj.com/articles/SB10001424127887323777204578189391813881534.

use of algorithms. Online retailers like Amazon[30] have used algorithms to push consumers towards their own products, and those of companies that pay for its services, even when there were substantially cheaper offers for the same products available from other vendors on the site. This tactic is very effective: most Amazon shoppers end up adding the item that is highlighted to their cart.[31]

Dynamic pricing can lead to a loss of consumer power. When combined with excessive data collection practices and corporate consolidation, companies today have a greater ability to extract a relatively larger amount of consumer surplus for any given transaction. For instance, Uber and Lyft have been alleged to use data about individual users such as their phone's current battery charge[32] in order to assess how much the individual would be willing to pay for a ride. Indeed, these companies are not outliers in this practice. A recent report from Deloitte and Salesforce finds that 40 percent of brands that currently use artificial intelligence to personalize the consumer experience have used this technology to tailor prices and deals in real time.[33] And as we mentioned above, these practices are obscured to the end user by design. As Maurice Stucke, Professor of Law at the University of Tennessee, notes, information about first-degree pricing practices typically "only comes out when there's a leak, when someone from the inside divulges it."

Consumers are also harmed through the use of differential pricing because companies can protect their market dominance through ensuring that consumers buy products or services sold by companies they have partnerships with.[34,35]

Consumer Awareness of Algorithms

Despite the fact that consumers are constantly seeing the results of algorithmic decision-making, in their feeds on social media platforms,[36] in their insurance premiums, and in the ads they are shown, consumers are largely unaware and unable to assess when an algorithm is at work. As Virginia Eubanks notes in her book, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*:

> But that's the thing about being targeted by an algorithm: you get a sense of a

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[30] Julia Angwin & Surya Mattu, *Amazon Says It Puts Customers First. But Its Pricing Algorithm Doesn't*, PROPUBLICA (Sept. 20, 2016), https://www.propublica.org/article/amazon-says-it-puts-customers-first-but-its-pricing-algorithm-doesnt.

[31] *Id.*; *and*, *see*, BIG DATA AND DIFFERENTIAL PRICING, EXEC. OFFICE OF THE PRESIDENT (Feb. 2015), https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/docs/Big_Data_Report_Nonembargo_v2.pdf.

[32] Shankar Vedantam, *This is Your Brain on Uber*, NAT'L PUB RADIO (May 17, 2016), https://www.npr.org/templates/transcript/transcript.php?storyId=478266839.

[33] CONSUMER EXPERIENCE IN THE RETAIL RENAISSANCE, DELOITTE & SALESFORCE (2017), https://c1.sfdcstatic.com/content/dam/web/en_us/www/documents/e-books/learn/consumer-experience-in-the-retail-renaissance.pdf.

[34] For more on competition issues, please see Consumers Union's comments pertaining to antitrust: *Comments of Consumers Union—Antitrust and Competition Issues*.

[35] Arwa Mahdawi, *Is Your Friend Getting a Cheaper Uber Fare Than You Are?*, THE GUARDIAN (Apr. 13, 2018), https://www.theguardian.com/commentisfree/2018/apr/13/uber-lyft-prices-personalized-data.

[36] *See*, *e.g.*, Ethan Rakin, *Facebook is Changing Its News Feed—Here's How it Works and What You Need to Know*, BUS. INSIDER (Aug. 16, 2018), https://www.businessinsider.sg/facebook-changing-news-feed-how-it-works-what-you-need-to-know/.

pattern in the digital noise, an electronic eye turned toward *you*, but you can't put your finger on exactly what's amiss. There is no requirement that you be notified when you are red-flagged. There is no sunshine law that compels companies to release the inner details of their digital fraud detection systems. With the notable exception of credit reporting, we have remarkably limited access to the equations, algorithms, and models that shape our life chances.[37]

Consumers are routinely the subject of algorithmic decisionmaking yet have no transparency as to their use or any recourse to challenge the decisions made about them. Algorithms warrant targeted enforcement and rulemaking precisely because of the opaque nature of their use, and because of the lack of current legal frameworks to assess and hold accountable algorithmic decision-making.

Lack of Applicable Federal Law and the Need for Algorithmic Accountability

Algorithms are increasingly being used to make life-impacting decisions (especially in employment decisions and in the criminal justice system), but they lack requisite auditing and accountability for their use. The vast majority of algorithmic decision-making is currently unregulated, not subject to any federal law. The United States lacks any federal laws that speak directly to the issues that the use of algorithms by government entities or by private actors pose; however, there are sector-specific laws that ban discrimination on the basis of race, sex, religion, and other traits in the areas of housing,[38] employment,[39] and credit.[40] Although New York city recently-passed a law that creates a task force designed to give recommendations to the state regarding use of algorithms by state agencies,[41] this task force lacks any additional power to hold algorithms accountable. It is scheduled to release its report in late 2019.

We also lack sufficient technical safeguards for the use of algorithmic decision-making tools. While researchers have discovered several discriminatory effects noted above, in fact few algorithms and other scoring systems have been scientifically assessed. The risks of using algorithms to make important decisions about individuals are exacerbated by the flawed assumption that algorithms are scientific and inherently neutral:

> Their popularity relies on the notion they are objective, but the algorithms that power the data economy are based on choices made by fallible human beings. And, while some of them were made with good intentions, the algorithms encode human prejudice, misunderstanding, and bias into automatic systems that increasingly

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[37] AUTOMATING INEQUALITY, *supra* note 10 at 5.

[38] FAIR HOUSING ACT, 42 U.S.C. § 3604(a), (f).

[39] TITLE VII OF THE CIVIL RIGHTS ACT OF 1964, 42 U.S.C. § 2000e-2(a)-(b); AGE DISCRIMINATION IN EMPLOYMENT ACT, 29 U.S.C. § 623(a); 29 U.S.C. § 623(e); AMERICANS WITH DISABILITIES ACT, 42 U.S.C. § 12112(a); and GENETIC INFORMATION NONDISCRIMINATION ACT, 42 U.S.C. § 2000ff et seq.

[40] EQUAL CREDIT OPPORTUNITY ACT, 15 U.S.C. § 1691(a). The Fair Housing Act applies to the issuing of mortgage loans. 42 U.S.C. § 3605(a)

[41] The law creates a task force that provides recommendations on how information on agency automated decision systems may be shared with the public and how agencies may address instances where people are harmed by agency automated decision systems. *A Local Law in Relation to Automated Decision Systems Used by Agencies, Int. 1696*, N.Y CITY COUNCIL (2017), *available at* http://legistar.council.nyc.gov/LegislationDetail.aspx?ID=3137815&GUID=437A6A6D-62E1-47E2-9C42-461253F9C6D0.

manage our lives. Like gods, these mathematical models are opaque, their workings invisible to all but the highest priests in their domain: mathematicians and computer scientists. Their verdicts, even when wrong or harmful, are beyond dispute or appeal. And they tend to punish the poor and the oppressed in our society, while making the rich richer.[42]

Finally, consumers also lack any means to correct erroneous conclusions made by algorithms, or any recourse to object to the use of an untested and undisclosed algorithm to make inferences or decisions about them.

Guidelines for Algorithmic Decision-making Tools

For these reasons, we urge the FTC to give guidance directing companies and organizations that use algorithms to do regular assessments of the accuracy of the algorithmic decisions, and to inspect the source code in order to root out any inherent or sample-bias that has been embedded in the algorithm.

Algorithms are used widely, without any accountability or consumer knowledge and control over their use, to make important, and sometimes life-changing, decisions about individuals. In order for consumers to be sufficiently protected, the FTC needs, and should request, additional authority and resources to assess the use of algorithms and to require companies to provide easy means for correction of consumer data that is used in the algorithm. The Commission's authority should also include the ability to create rules requiring audits of algorithms and mandating in some cases some right of redress and human intervention. In the meantime, the Commission should craft guidelines for the use of algorithms to help determine whether a particular algorithm produces decisions that are fair, accurate and representative. To that end, any guidance, at a minimum, should include the following principles:

- **The use of algorithms should be transparent to the end users.** When algorithms make decisions about consumers the individual should have notice that an algorithm was used. In many cases, such as in the sorting of posts in a social media feed or in the prioritization of search results, this will be obvious and no dedicated notice will be necessary; but in some non-intuitive settings, companies should let consumers know when some decision-making relies on algorithmic evaluation.
- **Algorithmic decision-making should be testable for errors and bias, while still preserving intellectual property rights.** Algorithms should be able to be tested by outside researchers and investigators.[43] Opaque algorithms that have the ability to affect a large number of people in life-changing ways should be subject to higher scrutiny.[44] Using this assessment, algorithms used in life-altering situations, such as the employment process and

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[42] *How Algorithms Rule Our Working Lives*, *supra* note 12.

[43] *See*, *e.g.*, Lauren Kirchner, *Federal Judge Unseals New York Crime Lab's Software for Analyzing DNA Evidence*, ProPublica (Oct. 20, 2017), https://www.propublica.org/article/federal-judge-unseals-new-york-crime-labs-software-for-analyzing-dna-evidence.

[44] Weapons of Math Destruction, *supra* note 15.

in the creation of FICO and similar scores,[45,46] warrant greater scrutiny.

Currently, the US lags behind on algorithmic transparency compared to our European counterparts:[47] The European Union incorporated algorithmic transparency and accountability into their new data privacy law: any decision based "solely on automated processing" which includes "legal effects" or "similarly significantly affects" an individual, be subject to "suitable safeguards," including an opportunity to obtain an explanation of an algorithmic decision, and to challenge such decisions."[48] France's president, Emmanuel Macron, pledged that the country will make all algorithms used by its governments open to the public.[49] And in June, the United Kingdom called for public sector entities to be transparent and accountable about their data practices and to "carefully consider the social implications of the data and algorithms used."[50]

- **Algorithms should be designed with fairness and accuracy in mind.** Companies should not simply rely on outsiders to detect problems with their algorithms; instead, companies should be required to plan for and design to avoid adverse consequences at all stages of the development of algorithms. Algorithms based on current data sets should be examined closely at the design stage in order to weed out historic discriminatory attitudes.[51] Algorithms can "inherit the prejudices of prior decision makers…in other cases, data may simply reflect the biases that persist in society at large."[52] To correct for sample size

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[45] For more on FICO scores and the interaction between data brokers and credit scoring agencies, please see Consumers Union response to Topic 2: *Competition and consumer protection issues in communication, information, and media technology networks*.

[46] Algorithms are used in state and local agencies across the country, including Arkansas: "Algorithmic tools like the one Arkansas instituted in 2016 are everywhere from health care to law enforcement, altering the ways people affected can usually only glimpse, if they know they're being used at all. Even if the details of algorithms are accessible, which isn't always the case, they're often beyond the understanding of the people using them, raising questions about what transparency means in an automated age, and concerns about people's ability to contest decisions made by machines." Colin Lecher, *What Happens When an Algorithm Cuts Your Health Care*, THE VERGE (Mar. 21, 2018), https://www.theverge.com/2018/3/21/17144260/healthcare-medicaid-algorithm-arkansas-cerebral-palsy. The article describes similar algorithmic tools used in other states, including California, Colorado, and Idaho. *See, also*, *Why New York*, *supra* note 7; *and*, NORTH CAROLINA GOVERNMENT DATA, *supra* note 8.

[47] Julia Angwin, *Making Algorithms Accountable*, PROPUBLICA (Aug. 1, 2016), https://www.propublica.org/article/making-algorithms-accountable.

[48] Art. 22, GENERAL DATA PRIVACY REGULATION, https://gdpr-info.eu/art-22-gdpr/.

[49] Nicholas Thompson, *Emmanuel Macron Talks to Wired about France's AI Strategy*, WIRED (Mar. 31, 2018), https://www.wired.com/story/emmanuel-macron-talks-to-wired-about-frances-ai-strategy/.

[50] *Data Ethics Framework*, UK DEP'T FOR DIGITAL, CULTURE, MEDIA & Sport (June 13, 2018), https://www.gov.uk/government/publications/data-ethics-framework/data-ethics-framework.

[51] The use of algorithms in the criminal justice sector sufficiently demonstrates the perils of using existing data sets to evaluate problems in a new way. "Our analysis of Northpointe's tool, called COMPAS [...] found that black defendants were far more likely than white defendants to be incorrectly judged to be at a higher rate of recidivism, while white defendants were more likely than black defendants to be incorrectly flagged as low risk[…]even when controlling for prior crimes." Jeff Larson, *et al.*, *How We Analyzed the COMPAS Recidivism Algorithm*, PROPUBLICA (May 23, 2016), https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm. The risk assessment used by Northpointe was based on data that included items that can be correlated with race, such as poverty, joblessness, and social marginalization. Judges have used these scores in their sentencing decisions, despite the exacerbation of bias that the algorithm created. This algorithm, that was used to decide many individuals' fates, was not rigorously tested before use: "As often happens with risk assessment tools, many jurisdictions have adopted Northpointe's software before rigorously testing whether it works." Julia Angwin & Jeff Larson, *Machine Bias*, PROPUBLICA (May 23, 2016), https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing.

[52] Solon Barocas & Andrew D. Selbst, *Big Data's Disparate Impact*, 104 CALIF. LAW REV. 671 (2016), *available at*

disparity that would disproportionately favor the creators or the majority of the data-set population, the data sets used in the algorithmic tool should be thoroughly assessed to root out any unintended bias towards any group.[53] Since algorithms and all data-driven products "will always reflect the design choices of the humans who built them,"[54] companies should commit to the further diversification of their employees.[55]

- **The data set used for algorithmic decision-making should avoid the use of proxies.** Algorithms can only serve to address the question posed to it. When possible, algorithms should avoid the use of unnecessary proxies like zip codes or credit scores that may be used to make discriminatory decisions against individuals. This problem persists even when the creators are trying to correct for unexpectedly biased results: "Even in situations where data miners are extremely careful, they can still [e]ffect discriminatory results with models that, quite unintentionally, pick out proxy variables for protected classes."[56] For instance, a joint collaboration between Consumer Reports and ProPublica demonstrated that car insurance companies were using an individual's zip code as a proxy for race and class in order to discriminatorily charge customers in minority-majority neighborhoods a higher price for car insurance.[57]

- **Algorithmic decision-making processes that could have significant consumer consequences should be explainable.** In some cases, algorithms are programmed to learn or evolve over time, such that a developer might not know why certain inputs lead to certain results. This could lead to unfair results if there is no meaningful accountability for how decisions are made. If an algorithm is (1) used for a significant purpose, like the determination of a credit score[58] and (2) cannot be sufficiently explained, then the process should not be used.

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Thank you for the opportunity to comment on the important emerging technologies of algorithms, predictive analytics, and artificial intelligence. We look forward to reading the comments submitted, to following the hearings, and to further opportunities to assist the Commission in this

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https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2477899

[53] Organizations can available tools to test whether algorithms already in use and algorithms in the design stage have a discriminatory effect. Researchers are actively developing tools they hope companies and government agencies could use to test whether their algorithms yield discriminatory results and to fix them when necessary. *See, e.g.*, *Utah Computer Scientists Discover How to Find Bias in Algorithms*, UNIV. OF UTAH (Aug. 14, 2015), https://unews.utah.edu/programming-and-prejudice/. Cathy O'Neil also created a company that audits algorithms to see how biased they are. *See* O'NEIL RISK CONSULTING & ALGORITHMIC AUDITING, http://www.oneilrisk.com/ (last visited Aug. 17, 2018).

[54] Nanette Byrnes, *Why We Should Expect Algorithms to be Biased*, MIT TECH. REV. (June 24, 2016), https://www.technologyreview.com/s/601775/why-we-should-expect-algorithms-to-be-biased/.

[55] *See, e.g.*, Nitasha Tiku, *Google's Diversity Stats are Still Very Dismal*, WIRED (June 14, 2018), https://www.wired.com/story/googles-employee-diversity-numbers-havent-really-improved/.

[56] *Big Data's Disparate Impact*, *supra* note 52; Karen Levy & danah boyd, *Networked Rights and Networked Harms*, paper presented at the INT'L COMMC'N ASSOC.'S DATA & DISCRIMINATION PRECONFERENCE (May 14, 2014), http://www.datasociety.net/initiatives/privacyand-harm-in-a-networked-society/.

[57] *Auto Insurers Charging Higher Rates*, *supra* note 2.

[58] BIG DATA: A TOOL FOR INCLUSION OR EXCLUSION?, FED. TRADE COMM'N (Jan. 2016), *available at* https://www.ftc.gov/system/files/documents/reports/big-data-tool-inclusion-or-exclusion-understanding-issues/160106big-data-rpt.pdf. For this reason, the Fair Credit Reporting Act requires explainability today for credit determinations. However, other important determinations not covered by FCRA may be completely unregulated.

and its other endeavors to protect the 21st Century marketplace and ensure that it works for consumers.

Respectfully submitted,

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