

Before the
Federal Trade Commission

In the Matter of

Competition and Consumer Protection in
the 21st Century: Algorithms, Artificial
Intelligence, and Predictive Analytics

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Comments of

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STOP ONLINE VIOLENCE AGAINST WOMEN
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Table of Contents

Introduction	1
I. Algorithms, Artificial Intelligence, and Predictive Analytics Sometimes Lead to Substantial Consumer Injury	1
A. Consumers are injured by the unfettered application of algorithms to the advertising of opportunities.	2
B. Consumers may be injured by the application of algorithms to the advertising of political content.....	3
C. Consumers may be injured by the application of algorithms to pricing and decision-making.....	5
II. Recommendations for Agency Action	7
A. The FTC must examine the ways algorithms and AI have perpetuated bias against marginalized communities in the past to inform future regulation.	7
B. Algorithms that are used to distribute ads about critical opportunities and political messages, and to make sensitive decisions, must be held to a high standard of non-discrimination.....	8
C. Detailed guidance must address algorithms, the application of these algorithms, and the firms developing and using them.....	9
1. <i>Algorithms must be trained with diverse data sets.</i>	9
2. <i>Algorithms must be routinely tested for bias.</i>	10
3. <i>Use of algorithms must be continuously monitored for fairness.</i>	11
4. <i>The use of algorithms demands firms be transparent.</i>	12
Conclusion.....	12

Introduction

In its request for comments on algorithms, artificial intelligence, and predictive analytics in business decisions and conduct, the Federal Trade Commission (FTC) asks for input from the public on the main consumer protection issues that arise in this context.¹ Commenters urge the Commission to consider the ways in which consumer injury often arises from the application of algorithms and other automated decision-making to vital aspects of everyday life. In particular, the Commission must examine how consumers – and in particular, historically disadvantaged communities – can be harmed by:

- Algorithmic distribution of advertisements related to educational, employment, or housing opportunities.
- Algorithmic distribution of political advertisements and communications.
- Algorithmic determination of product prices and same day shipping.

The FTC must use its authority to prevent algorithmic discrimination against consumers from marginalized communities. The Commission must study past examples of these harms to inform future action, then take action to protect consumers from the application of inadequately trained algorithms in advertising, pricing, and output. Finally, the Commission must provide guidance on the development and implementation of algorithms. This guidance must require:

- Algorithms be trained with diverse datasets.
- Algorithms be thoroughly tested.
- Firms monitor algorithms for fairness.
- Firms maintain transparency around their use of algorithms.

I. Algorithms, Artificial Intelligence, and Predictive Analytics Sometimes Lead to Substantial Consumer Injury

It is important for the Commission to address automated decision-making because algorithms, artificial intelligence, and predictive analytics sometimes lead to

¹ *FTC Announces Agenda for the Seventh Session of its Hearings on Competition and Consumer Protection in the 21st Century; Session at Howard University to Focus on Algorithms, Artificial Intelligence, and Predictive Analysis*, Federal Trade Commission, Docket ID: FTC-2018-0101, <https://www.regulations.gov/docket?D=FTC-2018-0101>.

substantial consumer injury. Consumers are injured by the unfettered application of algorithms to the advertising of opportunities, to the advertising of political content, and to decisions about pricing and availability of features.

A. Consumers are injured by the unfettered application of algorithms to the advertising of opportunities.

Consumers are disadvantaged when screened out of the audience for employment or housing online advertisements. Digital advertising is a growing field and becoming heavily relied upon, especially as advertisers take advantage of the ability to select the most applicable audience for a message. It is imperative that effective measures are taken immediately to ensure advertisers use this tool responsibly.

Targeted ads harm consumers by denying them access to the announcement of important opportunities such as employment or housing. It is vital that minorities—who use social media at a higher rate than other users—have equal access to the opportunities advertised on these platforms.² But unfortunately, this may not always be the case. For example, Facebook allows advertisers to target advertisement, naming a demographic to include or exclude from seeing an ad.³ This function has allowed advertisers to prevent minority groups from seeing their advertisements.⁴ Consumers are harmed when they can only access a fraction of the available opportunities.

The Commission must take action to protect consumers against this harm, because the problem will only become more widespread over time. Digital advertising

² Aaron Smith & Monica Anderson, *Social Media Use in 2018: Appendix A: Detailed Table of Use of Different Online Platforms by Demographic Groups*, Pew Research Center, Mar. 1, 2018, <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>; see Sara Fischer, *Social Media Platform Use by Race*, Axios, Mar. 6, 2018, <https://www.axios.com/social-media-platform-use-by-race-1520348162-f134bd21-5704-4746-bc42-57e9ec0d2e69.html>.

³ Aaron Rieke and Miranda Bogen, *Leveling the Platform: Real Transparency for Paid Messages on Facebook*, Upturn, May 2018 <https://www.upturn.org/reports/2018/facebook-ads/> (Although Facebook does not ask for information on its users' race, it has algorithms to create "look alike" audiences approximate ethnic affiliations.).

⁴ Julia Angwin and Terry Parris Jr., *Facebook Lets Advertisers Exclude Users by Race*, ProPublica, Oct. 28, 2016, <https://www.propublica.org/article/facebook-lets-advertisers-exclude-users-by-race>; Byron Spice, *Questioning the Fairness of Targeting Ads Online: CMU Probes Online Ad Ecosystem*, Carnegie Mellon University, July 07, 2015, <https://www.cmu.edu/news/stories/archives/2015/july/online-ads-research.html>.

is a growing means of communication.⁵ Important opportunities such as employment applications increasingly are only found online.⁶

The Commission must exercise its authority in this area because industry will not be able to fix the problem itself. Self-regulation of targeted ads has been slow and piecemeal. After *ProPublica* exposed advertisers were able to exclude racial groups from their advertisements, Facebook allowed the practice to continue for two years.⁷ In response to legal action, Facebook claims to have finally removed the ability to exclude racial groups from seeing ads, but advertisers can still discriminate on the basis of gender.⁸ Other attempts to address discriminatory ads have been inadequate. Algorithms screening ads may takedown harmless ads and disrupt organizing efforts of marginalized communities.⁹ The FTC must intervene.

B. Consumers may be injured by the application of algorithms to the advertising of political content.

Consumers also are harmed by the fact that algorithmic ad optimization enables malicious attackers to distribute propaganda and other disinformation more efficiently than ever before.¹⁰ As more Americans get their political information from online sources, action must be taken to ensure that algorithms do not amplify the spread of

⁵ Peter Kafka and Rani Molla, *2017 was the year digital ad spending finally beat TV*, Recode, Dec. 4, 2017, <https://www.recode.net/2017/12/4/16733460/2017-digital-ad-spend-advertising-beat-tv>.

⁶ Gerry Smith, *Without Internet, Urban Poor Fear Being Left Behind In Digital Age*, Huffington Post, Mar. 1, 2012, https://www.huffingtonpost.com/2012/03/01/internet-access-digital-age_n_1285423.html.

⁷ Sam Machkovech, *Facebook bows to WA state pressure to remove “discriminatory” ad filters*, Ars Technica, July 25, 2018 <https://arstechnica.com/information-technology/2018/07/facebook-bows-to-wa-state-pressure-to-remove-discriminatory-ad-filters/>.

⁸ Ariana Tobin and Jeremy B. Merrill, *Besieged Facebook Says New Ad Limits Aren’t Response to Lawsuits*, ProPublica, Aug. 23, 2018, <https://www.propublica.org/article/facebook-says-new-ad-limits-arent-response-to-lawsuits>; Ariana Tobin and Jeremy B. Merrill, *Facebook Is Letting Job Advertisers Target Only Men*, ProPublica, Sept. 18, 2018, <https://www.propublica.org/article/facebook-is-letting-job-advertisers-target-only-men>.

⁹J. Nathan Matias, Austin Hounsel, and Melissa Hopkins, *We Tested Facebook’s Ad Screeners and Some Were Too Strict*, The Atlantic, Nov. 2, 2018 <https://www.theatlantic.com/technology/archive/2018/11/do-big-social-media-platforms-have-effective-ad-policies/574609/>.

¹⁰ See generally Anthony Nadler, Matthew Crain, and Joan Donovan, *Weaponizing the Digital Influence Machine: The Political Perils of Online Ad Tech*, Data & Society, https://datasociety.net/wp-content/uploads/2018/10/DS_Digital_Influence_Machine.pdf.

disinformation. The FTC must address the different ways the online ad technology injures voters.

Consumers get most of their political information from social media, making any harm arising from targeted content unavoidable to the average consumer. About two-thirds of Americans use social media to learn about current events and politics.¹¹ Ad optimization of political information therefore has immediate, tangible impacts. For example, political disinformation demonstrably led to lower voter turnout in 2016 and contributes to the current political polarization.¹² One reason disinformation spreads so easily in the digital era is because content distribution algorithms, such as Facebook's, often will prioritize the presentation of political content based on what they predict users will engage with, rather than on quality.¹³

Not only may algorithmic distribution of sponsored content be used to target disinformation, but it may be used to distribute polarizing political content as well. Dark advertisements, advertisements that are only visible to certain users, allow campaigns to show voters highly tailored messages. Politicians can offer different messages to voters of different ideologies by placing these dark ads.¹⁴ This technology enables campaigns to present political content to individuals based on their ideology.¹⁵ For example during the 2016 election, Facebook users identified to be sensitive to identity threats would receive content with messages exacerbating those fears.¹⁶ These targeted, political dark ads fosters "echo chambers" and contribute to the current political polarization.¹⁷ The secrecy around these dark ads allows politicians to offer

¹¹ *Id.* at 20.

¹² Natasha Singer, 'Weaponized Ad Technology': Facebook's Moneymaker Gets a Critical Eye, N.Y. Times, Aug. 16, 2018 <https://www.nytimes.com/2018/08/16/technology/facebook-microtargeting-advertising.html>.

¹³ *Id.*

¹⁴ Julia Carrie Wong, 'It might work too well': the dark art of political advertising online, The Guardian, Mar. 18, 2018 <https://www.theguardian.com/technology/2018/mar/19/facebook-political-ads-social-media-history-online-democracy>.

¹⁵ Nadler, et. al, *supra* note 10 at 7.

¹⁶ Nadler, et. al, *supra* note 10 at 29-30.

¹⁷ Nadler, et. al, *supra* note 10 at 7; Rob Faris, Hal Roberts, Bruce Etling, Nikki Bourassa, Ethan Zuckerman, & Yochai Benkler, *Partisanship, Propaganda, and Disinformation: Online Media and the 2016 U.S. Presidential Election*, Harvard University Berkman Klein Center for Internet & Society, Aug. 16, 2017 <https://cyber.harvard.edu/publications/2017/08/mediacloud>; Matt Karolian, *Hyper-Partisan Pages Still Outperforming Mainstream Media on Facebook*, Medium, Feb. 1, 2018 <https://medium.com/@karolian/hyper-partisan-pages-still-outperforming-mainstream-media-on-facebook-4fcbd036ced3>.

wholly contradictory statements without fear of consequence.¹⁸ Alarms should be raised when these practices facilitated a multi-million dollar disinformation campaign.¹⁹ The 2016 campaign demonstrates how bad actors will continue to abuse targeted ads.²⁰

C. Consumers may be injured by the application of algorithms to pricing and decision-making.

Consumers may also be injured by the application of algorithms to pricing and decision-making. Harm to consumers will occur when pricing algorithms are leveraged to gouge and prey on consumers, when “black box” decision-making is used to impair consumers’ ability to hold companies accountable for this type of behavior, and when data about purchasing habits is used to support additional decisions that impede some communities from full participation in the marketplace.

In a brick-and-mortar economy, rock-bottom pricing might have been seen as a sign of healthy competition, but in the digital era an online retailer can use low pricing to put competitors out of business, then leverage its market dominance to gouge and prey on consumers. For example, access to a wealth of consumer data – purchasing habits, product searches, and product ratings – enables Amazon to price its generic products lower than its competitors.²¹ Amazon also likely uses this data to guide which generic products AmazonBasics should produce next. With this information, Amazon can undercut competitors, drive them out of business, and reduce consumers’ options. However, the same algorithms returning low prices today could raise product prices once Amazon gains dominance.

Not only may dynamic data-driven pricing harm consumers’ checkbooks, but the use of complex algorithms to determine pricing makes it difficult for consumers to hold companies accountable for this behavior. Algorithms can assess what prices

¹⁸ See *id.*; Nadler, et. al, *supra* note 10 at 7.

¹⁹ Faris, et al, *supra* note 17; Nadler, et. al, *supra* note 10 at 27; Sara M. Watson, *Russia’s Facebook ads show how Internet microtargeting can be weaponized*, Washington Post, Oct. 12, 2017 https://www.washingtonpost.com/news/posteverything/wp/2017/10/12/russias-facebook-ads-show-how-internet-microtargeting-can-be-weaponized/?utm_term=.794d3e8cd298; Wong *supra* note 14.

²⁰ Nadler, et. al, *supra* note 10 at 2, 6-7, 14, 27; Dave Gershgorn, *AI experts list the real dangers of artificial intelligence*, Quartz, Feb. 22, 2018 <https://qz.com/1213524/ai-experts-list-the-real-dangers-of-artificial-intelligence/>.

²¹ Spencer Soper, *AmazonBasics house brand flatters competitors, but they’re not fans*, Seattle Times, Apr. 23, 2016 <https://www.seattletimes.com/business/amazonbasics-house-brand-flatters-competitors-but-theyre-not-fans/>.

consumers will pay for. They first present a high price which they gradually lower until consumers fold.²² Algorithms also may engage in collusion, setting high prices because other algorithms have set high prices and not because they have been programmed to do so.²³ By relying on algorithms, firms give up the ability to control prices. An algorithm can take the blame for high prices, allowing firms to avoid criticism by pointing to the black box and market factors.²⁴ As a result, consumers may have to pay high prices due to the algorithm's determination. For Uber customers in New York City that meant having to pay exuberant prices in the middle of a snowstorm.²⁵ This will disproportionately affect low-income communities and may deter them from making online purchase because of the unpredictability of cost.

Beyond concerns about pricing of specific products that harm consumers at an individual level, retailers may also use granular data about consumers' purchasing habits to support additional decisions that further impede entire communities from full participation in the marketplace. For example, Amazon's algorithms led it to exclude neighborhoods of color from the initial rollout of Prime same day shipping.²⁶ The company cited factors such as location of warehouses to justify the algorithm's decision.²⁷ The exclusion of these neighborhoods restricted Prime users' access to a service others in the same city enjoyed and primarily affected users who would benefit the most from this service.²⁸ While access to same day shipping is not a fundamental right, this situation reflects how algorithms continue reinforcing historic segregation

²² Ramsi A. Woodcock, *The Power of the Bargaining Robot*, CPI Antitrust Chronicle, May 2017, 3 <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/05/CPI-Woodcock.pdf>.

²³ Emilio Calvano, Giacomo Calzolari, Vincenzo Denicolò, and Sergio Pstorello, *Artificial intelligence, algorithmic pricing, and collusion*, VOX CEPR Policy Portal, Feb. 3, 2019 <https://voxeu.org/article/artificial-intelligence-algorithmic-pricing-and-collusion>.

²⁴ Michal S. Gal and Niva Elkin-Koren, *Algorithmic Consumers*, 30 Harv. J.L. & Tech 309, 331 (2017).

²⁵ Jessi Hempel, *Why the surge-pricing fiasco is great for Uber*, Fortune, Dec. 30, 2013 <http://fortune.com/2013/12/30/why-the-surge-pricing-fiasco-is-great-for-uber/>.

²⁶ David Ingold and Spence Soper, *Amazon Doesn't Consider the Race of Its Customers. Should It?*, Bloomberg, Apr. 21, 2016 <https://www.bloomberg.com/graphics/2016-amazon-same-day/>.

²⁷ *Id.*

²⁸ See Libby Nelson, *How Amazon's same-day delivery service reflects decades of residential segregation*, Vox, Apr. 22, 2016 <https://www.vox.com/2016/4/22/11486672/amazon-prime-poor-neighborhoods>.

and housing discrimination.²⁹ Space in America frequently serves as a proxy for race.³⁰ Data cannot be treated as sanitized of prejudice and entrusted to algorithms without attention to these realities.

II. Recommendations for Agency Action

For these reasons, the FTC must take action to curtail harmful uses of algorithms in these contexts. FTC action must take into account past discrimination. In particular, consumers must be protected from harms caused by algorithms used to advertise, determine price, and return outputs. The FTC must scrutinize the roles both of algorithms themselves and the human actors involved.

A. **The FTC must examine the ways algorithms and AI have perpetuated bias against marginalized communities in the past to inform future regulation.**

The FTC must research how algorithms have injured marginalized communities in the past so future action addresses and remedies these dangers. As discussed above, algorithms will continue to perpetuate bias against historically disadvantaged communities without intervention. The FTC must provide guidance to mitigate the harm to these communities. To do so, the agency must study how algorithms have used purportedly sanitized data in ways that resulted in discrimination against minorities. Algorithms trained with biased data return discriminatory results.³¹ By examining the hidden bias in data, the FTC can disrupt the practice of orienting algorithms with biased data and ensure algorithms do not usher America into an age of “technologically mediated discrimination.”³² Without this historic perspective, the agency will not adequately protect consumers from harm.

²⁹ Ta-Nehisi Coates, *The Case for Reparations*, *The Atlantic*, June 2014, <https://www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631/>.

³⁰ *See id.*

³¹ *See* Joy Buolamwini and Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, *Proceedings of Machine Learning Research* 81:1, 2018.

³² danah boyd, Karen Lavey and Alice Marwick, *The Networked Nature of Algorithmic Discrimination*, 56 <http://www.danah.org/papers/2014/DataDiscrimination.pdf>.

B. Algorithms that are used to distribute ads about critical opportunities and political messages, and to make sensitive decisions, must be held to a high standard of non-discrimination.

The use of algorithms to deliver ads, distribute political content, and make business decisions, such as determining price and the location of services, require attention from the Commission. In particular, the FTC must use its authority to limit discriminatory harms. In the absence of regulation and enforcement to protect them, consumers will suffer substantial harm stemming from targeting advertisements of critical opportunities and political messages. Consumers will be harmed as more job applications and advertisements move online, and algorithms exclude marginalized communities from learning about these opportunities.³³

Marginalized communities will suffer injury if algorithms determining critical opportunities, such as who should be granted a loan or given a job interview, perpetuate historic discrimination.³⁴ Agency action is needed to hold algorithmic decision-making to the same standards as human decision-makers, including the examination of discriminatory effects by unearthing hidden bias.³⁵ The FTC must mitigate the high stakes of automating decision-making by addressing bias.³⁶

The FTC should use its enforcement authority to crack down on political ad practices that are unfair or deceptive.³⁷ The Commission must also disrupt the “weaponization” of online advertising to disinform American politics.³⁸ With the

³³ See Smith, *supra* note 6; Latanya Sweeney, *Discrimination in Online Ad Delivery*, <https://queue.acm.org/detail.cfm?id=2460278> (Search engines determine what ads appear as users make searches.).

³⁴ Will Knight, *Biased Algorithms Are Everywhere, and No One Seems to Care*, MIT Technology Review, July 12, 2017 <https://www.technologyreview.com/s/608248/biased-algorithms-are-everywhere-and-no-one-seems-to-care/>; Jeffrey Dastin, *Amazon scraps secret AI recruiting tool that showed bias against women*, Reuters, Oct. 9, 2018 <https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G>.

³⁵ Darrell M. West and John R. Allen, *How artificial intelligence is transforming the world*, Brookings, Apr. 24, 2018 <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/>; Kate Crawford, *Artificial Intelligence—With Very Real Biases*, The Wall Street Journal, Oct. 17, 2017, <https://www.wsj.com/articles/artificial-intelligence-with-very-real-biases-1508252717?mod=e2fb>.

³⁶ *AI Now Report 2018*, AI Now Institute, Dec. 2018, https://ainowinstitute.org/AI_Now_2018_Report.pdf.

³⁷ Nadler, et. al, *supra* note 10 at 24.

³⁸ Nadler, et. al, *supra* note 10 at 1, 27-29; Wong, *supra* note 14.

growing extent to which consumers rely on online political content to learn about current events, it is critical that users be protected from attempts to deceive and confuse American voters. The 2016 disinformation campaign thrived in an unregulated space.³⁹ As demonstrated, allowing an algorithm to determine which political content gets distributed to users can reinforce bias and undermine democratic mechanisms.

C. Detailed guidance must address algorithms, the application of these algorithms, and the firms developing and using them.

The FTC must provide guidance for the training and use of algorithms, contemplating the roles both of developers and the firms implementing them. Algorithms must be trained with diverse data sets and routinely tested for bias. Applications of automated learning must be continuously monitored for fairness. Finally, firms must be more transparent about their use of algorithms.

1. *Algorithms must be trained with diverse data sets.*

Training algorithms with diverse data sets is a first step toward algorithmic fairness. In contrast, reliance on biased data will train AI to reinforce historical bias and create a “racist feedback loop.”⁴⁰ Those who design algorithms also must anticipate potentially unfair outcomes and take steps to prevent them. For example, pricing algorithms are designed to react to deviations adjusting prices to real-time data.⁴¹ But this function can also bring analog biases into the digital world. As another example, it is likely the Amazon same day shipping algorithm may have excluded communities of color because they did not have close proximity to Amazon warehouses like other neighborhoods, but the outcome was nevertheless unfair and arguably discriminatory.⁴² Algorithms need to account for “preexisting disparities” to avoid results strengthening inequalities.⁴³

³⁹ Nadler, et. al, *supra* note 10 at 24, 31-32.

⁴⁰ Sascha Eder, *How Can We Eliminate Bias In Our Algorithms?*, Forbes, June 27, 2018 <https://www.forbes.com/sites/theyec/2018/06/27/how-can-we-eliminate-bias-in-our-algorithms/#749082ec337e>.

⁴¹ Michal S. Gal, *Algorithmic-Facilitated Coordination: Market and Legal Solutions*, CPI Antitrust Chronicle May 2017, 3 <https://www.competitionpolicyinternational.com/wp-content/uploads/2017/05/CPI-Gal.pdf>.

⁴² Ingold and Soper, *supra* note 26.

⁴³ The Leadership Conference, *Civil Rights Principles for the Era of Big Data*, <https://civilrights.org/civil-rights-principles-era-big-data/>.

Diverse and robust data sets will reduce the number of disparities and ensure algorithms return accurate results.⁴⁴ Requiring all algorithms to undergo diverse training will ensure they perform complex tasks more successfully.⁴⁵ The data used to train a machine-learning system should prepare it for the diverse cases it will face. For example, an algorithm that knows the different connotations of a word will better assist with searches.⁴⁶ Similarly, algorithms need to be trained for diversity of race, gender, culture, norms, and religious beliefs to ensure data sets reflect the audience and settings of use.⁴⁷ Failure to do so can severely harm users exposed to them.⁴⁸

2. *Algorithms must be routinely tested for bias.*

Developers must routinely test algorithms for inherited bias and immediately address significant harm to consumers. AI inherits its developer's bias.⁴⁹ It is of particular importance that developers adopt an intentional approach to testing for inherited bias because demographic homogeneity of the computer science and engineering field increases the likelihood that algorithms will inherit the biases of people working in the field.⁵⁰ The opacity of algorithms also requires frequent tests. Neither users nor coders know what determination algorithms use to produce results.⁵¹ Bias testing should be added throughout an algorithm's development cycle and continue after deployment as algorithms continue learning. Testing a model on diverse

⁴⁴ Buolamwini and Gebru, *supra* note 31.

⁴⁵ Kaveh Waddell, *Small, narrow -- and revolutionary AI*, Axios, Oct. 17, 2018, <https://www.axios.com/narrow-ai-small-data-145b688f-489c-4c9c-bc29-837143d1f3c2.html>.

⁴⁶ Larry Hardesty, *Data Diversity: Preserving variety in subsets of unmanageably large data sets should aid machine learning*, MIT News Office, Dec. 16, 2016 <http://news.mit.edu/2016/variety-subsets-large-data-sets-machine-learning-1216>.

⁴⁷ Danny Guillory, *Why Adding Diversity in Artificial Intelligence Is Nonnegotiable*, AutoDesk, Sept. 14, 2017 <https://www.autodesk.com/redshift/diversity-in-artificial-intelligence/>.

⁴⁸ *Id.* (A vacuum robot was not trained for a culture where it is custom to sleep on the floor and "ate" a woman's hair as she slept.).

⁴⁹ Kriti Sharma, *Can We Keep Our Biases from Creeping into AI?*, Harvard Business Review, Feb. 09, 2018 <https://hbr.org/2018/02/can-we-keep-our-biases-from-creeping-into-ai>; Arvind Narayanan and Dillon Reisman, *The Princeton Web Transparency and Accountability Project*, Princeton Web Transparency and Accountability Project, <http://randomwalker.info/publications/webtap-chapter.pdf>.

⁵⁰ Rahul Bhargava, *The Algorithms Aren't Biased, We Are*, Medium, Jan. 3, 2018 <https://medium.com/mit-media-lab/the-algorithms-arent-biased-we-are-a691f5f6f6f2>; Knight, *supra* note 34.

⁵¹ Dustin, *supra* note 34; boyd, et. al, *supra* note 32.

subgroups will demonstrate the bias of the algorithm.⁵² Coders should integrate feedback from these tests into future iterations of the code.⁵³ These efforts are increasingly needed as it becomes more difficult to know what factors an algorithm uses to return a result.

3. *Use of algorithms must be continuously monitored for fairness.*

As deployed algorithms make more critical decisions and become increasingly unavoidable, they must be monitored continuously, in action, for fairness. As algorithms determine significant opportunities, they should be held accountable to ensure they are impartial arbiters.⁵⁴ Guidance must ensure firms monitor algorithms and understand their constraints.⁵⁵ Algorithms can discriminate without explicitly labeled information on protected class status.⁵⁶ Without a way to know why algorithms return the results they do, it will be impossible to edit the code or the training process to prevent future discrimination without constant audits.⁵⁷ Both developers and implementers should be engaged in this evaluation.⁵⁸ Human intervention will provide alternative means of preventing the discriminatory outputs of algorithms.⁵⁹

⁵² Jackie Snow, “We’re in a diversity crisis”: cofounder of Black in AI on what’s poisoning algorithms in our lives, <https://www.technologyreview.com/s/610192/were-in-a-diversity-crisis-black-in-ai-founder-on-whats-poisoning-the-algorithms-in-our/>.

⁵³ *Responsible AI Practices*, Google AI, <https://ai.google/education/responsible-ai-practices>

⁵⁴ Danielle Keats Citron and Frank Pasquale, *The Scored Society: Due Process for Automated Predictions*, 89 Wash. L. Rev. 1, 18 (2014).

⁵⁵ Narayanan and Reisman, *supra* note 49; *Responsible AI Practices*, *supra* note 53.

⁵⁶ Alex Hern, *Advertisers can target African American-, Asian American- and Hispanic- affiliated groups through the site*, Guardian, Mar. 22, 2016, <https://www.theguardian.com/technology/2016/mar/22/facebooks-ethnic-affinity-advertising-concerns-racial-profiling>. (Facebook does not collect information on a user’s race, yet presented different advertisements of the same movie to Black and White users.).

⁵⁷ Dastin, *supra* note 34.

⁵⁸ See The Leadership Conference, *Comments on Competition and Consumer Protection in the 21st Century Hearings*, Aug. 17, 2018 https://www.ftc.gov/system/files/documents/public_comments/2018/08/ftc-2018-0056-d-0006-151070.pdf; Public Knowledge, *Comments on Topic 9: The Consumer Welfare Implications Associated with the Use of Algorithmic Decision Tools, Artificial Intelligence, and Predictive Analytics*, Aug. 17, 2018 https://www.ftc.gov/system/files/documents/public_comments/2018/08/ftc-2018-0056-d-0007-151071.pdf.

⁵⁹ Citron and Pasquale, *supra* note 54 at 7-8.

4. *The use of algorithms demands firms be transparent.*

The FTC must also incentivize transparency around the use of algorithms to ensure intervention is possible when harms outweigh benefits to consumers and competition. Due to the potential, significant harm to consumers and the unavoidable nature of the types of algorithms discussed above, the FTC must intervene to counteract the opacity of these companies, and the algorithms they develop or use.⁶⁰ The use of opaque algorithms in everyday life requires frequent evaluation both before and after deployment to protect consumers from harm. Opacity currently allows firms to use algorithms without explaining the outcomes.⁶¹ The problems outlined above will persist if firms are willfully ignorant of the harms caused by algorithms or refuse to disclose information that would inform guidance and enforcement.⁶² Additionally, consumers will be harmed if firms do not address discriminatory algorithms. The Commission must incentivize transparency in firms around algorithms and their use. This practice will generate stronger self-regulation, as companies routinely examine their algorithms.⁶³ Additionally, transparency will allow the Commission to more effectively and precisely guide companies toward fairness.⁶⁴

Conclusion

The FTC must protect consumers from algorithms perpetuating historic bias in advertising, pricing, and output. FTC action can mitigate these risks and create more

⁶⁰ Joel Kotkin, *Godzillas: How a Few Monster Tech Firms are Taking Over Everything from Media to Space Travel and What it Means for the Rest of Us*, *The Daily Beast*, Feb. 09, 2014, <https://www.thedailybeast.com/how-a-few-monster-tech-firms-are-taking-over-everything-from-media-to-space-travel-and-what-it-means-for-the-rest-of-us>; Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information*, 59-60 (2015); Maurice E. Stucke and Ariel Ezrachi, *How Pricing Bots Could Form Cartels and Make Things More Expensive*, <https://hbr.org/2016/10/how-pricing-bots-could-form-cartels-and-make-things-more-expensive>; Crawford, *supra* note 35.

⁶¹ See Kaveh Waddell, *How Algorithms Can Bring Down Minorities' Credit Scores*, *The Atlantic*, Dec. 2, 2016 <https://www.theatlantic.com/technology/archive/2016/12/how-algorithms-can-bring-down-minorities-credit-scores/509333/>; Hempel, *supra* note 25.

⁶² Citron and Pasquale, *supra* note 54 at 5.

⁶³ Cathy O'Neil, "Amazon's Gender-Biased Algorithm Is Not Alone", *Bloomberg*, Oct. 16, 2018, <https://www.bloomberg.com/opinion/articles/2018-10-16/amazon-s-gender-biased-algorithm-is-not-alone>.

⁶⁴ Gal, *supra* note 41.

skilled algorithms. These protections are necessary as algorithms and other automated decision-making become more and more interwoven in our everyday lives.

Respectfully submitted,

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