

## Why Google Poses a Serious Threat to Democracy, and How to End That Threat

Testimony by

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I am Dr. Robert Epstein, the proud father of five children, a resident of California, and Senior Research Psychologist at the American Institute for Behavioral Research and Technology. I love America and democracy, and I am also not a conservative. I have been center/center-left my whole adult life. You'll see in moment why this fact is relevant to my testimony.

I am here today for three reasons: to explain why Google presents a serious threat to democracy and human autonomy, to explain how passive monitoring systems can protect us both now and in the future from companies like Google, and to tell you how Congress can immediately end Google's worldwide monopoly on search. My plan for ending that monopoly was published just yesterday (Monday, July 15, 2019) by *Bloomberg Businessweek* (Epstein, 2019d). I am attaching a copy of my article to my testimony and respectfully request that it be entered into the Congressional Record.

I have been a research psychologist for nearly 40 years and have also served in various editorial positions at *Psychology Today* magazine and *Scientific American MIND*. I received my Ph.D. at Harvard University in 1981 and have since published 15 books and more than 300 scientific and mainstream articles on artificial intelligence and other topics. Since 2012, some of my research and writings have focused on Google LLC, specifically on the company's power to suppress content – the censorship problem, if you will – as well as on the massive surveillance the company conducts, and also on the company's unprecedented ability to manipulate the thoughts and behavior of more than 2.5 billion people worldwide.

Data I've collected since 2016 show that Google displays content to the American public that is biased in favor on one political party (Epstein & Williams, 2019) – a party I happen to like, but that's irrelevant. No private company should have either the right or the power to manipulate large populations without their knowledge.

I've published articles about my research on Google in both scientific publications and a wide array of mainstream news sources: in *TIME* magazine, *U.S. News & World Report*, *USA Today*, *Dissent*, *The Hill*, and *Huffington Post*, for example, but also in *The Daily Caller* and even in Russia's *Sputnik News*.

I reach out to diverse different audiences because the threats posed by Google, and, to a lesser extent, Facebook, are so serious that I think everyone in the world needs to know about them. I put my own political leanings aside when I report my data and concerns because the problems these companies present eclipse personal politics. To put this another way, I love humanity, my country, and democracy more than I love any particular party or candidate. And democracy as originally conceived cannot survive Big Tech as currently empowered.

If you were to examine the data I have been collecting over the past 6-and-a-half years, every one of you would put partisanship aside and collaborate to reign in the extraordinary power that Google and Facebook now wield with unabashed arrogance.

Here are five disturbing findings from my research, which adheres, I believe, to the highest possible scientific standards in all respects:

1. In 2016, biased search results generated by Google's search algorithm likely impacted undecided voters in a way that gave at least 2.6 million votes to Hillary Clinton (whom I supported). I know this because I preserved more than 13,000 election-related searches conducted by a diverse group of Americans on Google, Bing, and Yahoo in the weeks leading up to the election, and Google search results – which dominate search in the U.S. and worldwide – were significantly biased in favor of Secretary Clinton in all 10 positions on the first page of search results in both blue states and red states.

I know the number of votes that shifted because I have conducted dozens of controlled experiments in the U.S. and other countries that measure precisely how opinions and votes shift when search results favor one candidate, cause, or company. I call this shift “SEME” – the Search Engine Manipulation Effect. My first scientific paper on SEME was published in the *Proceedings of the National Academy of Sciences* (PNAS) in 2015 (<https://is.gd/p0li8V>) (Epstein & Robertson, 2015a) and has since been accessed or downloaded from PNAS's website more than 200,000 times. SEME has also been replicated by a research team at one of the Max Planck Institutes in Germany.

SEME is one of the most powerful forms of influence ever discovered in the behavioral sciences, and it is especially dangerous because it is invisible to people – “subliminal,” in effect. It leaves people thinking they have made up their own minds, which is very much an illusion. It also leaves no paper trail for authorities to trace. Worse still, the very few people who can detect bias in search results shift *even farther* in the direction of the bias, so merely being able to see the bias doesn't protect you from it. Bottom line: biased search results can easily produce shifts in the opinions and voting preference of undecided voters by 20 percent or more – up to 80 percent in some demographic groups.

Bear in mind here that *all* Google search results are, in a sense, biased. There are no equal-time rules built into Google algorithm. It *always* puts one widget ahead of another – and one *candidate* ahead of another.

SEME is an example of an “ephemeral experience,” and that’s a phrase you’ll find in internal emails that have leaked from Google recently. A growing body of evidence suggests that Google employees deliberately engineer ephemeral experiences to change people’s thinking. (For details about the methodology used in SEME experiments, please see the Appendix at the end of this testimony.)

Since 2013, I have discovered about a dozen subliminal effects like SEME, and I am currently studying and quantifying seven of them (<https://is.gd/DbIhZw>) (Epstein, 2018i).

2. On Election Day in 2018, the “Go Vote” reminder Google displayed on its home page gave one political party between 800,000 and 4.6 million more votes than it gave the other party. Those numbers might seem impossible, but I published my analysis in January 2019 (<https://is.gd/WCdslm>) (Epstein, 2019a), and it is quite conservative. Google’s data analysts presumably performed the same calculations I did before the company decided to post its prompt. In other words, Google’s “Go Vote” prompt was *not* a public service; it was a *vote manipulation*.
3. In the weeks leading up to the 2018 election, bias in Google’s search results may have shifted upwards of 78.2 million votes to the candidates of one political party (spread across hundreds of local and regional races). This number is based on data captured by my 2018 monitoring system, which preserved more than 47,000 election-related searches on Google, Bing, and Yahoo, along with the nearly 400,000 web pages to which the search results linked. Strong political bias toward one party was evident, once again, in Google searches (Epstein & Williams, 2019).
4. My recent research demonstrates that Google’s “autocomplete” search suggestions can turn a 50/50 split among undecided voters into a 90/10 split without people’s awareness (<http://bit.ly/2EcYnYI>) (Epstein, Mohr, & Martinez, 2018). A growing body of evidence suggests that Google is manipulating people’s thinking and behavior from the very first character people type into the search box.
5. Google has likely been determining the outcomes of upwards of 25 percent of the national elections worldwide since at least 2015. This is because many races are very close and because Google’s persuasive technologies are very powerful (Epstein & Robertson, 2015a).

These effects are nothing like Russian-placed ads or fake news stories. Russian interference, although troubling and unacceptable, does not, in my opinion, shift many votes (Epstein, 2017d, 2018a). Ads and news stories are competitive and visible, like billboards. The kinds of ephemeral effects I am studying, however, are *invisible* and *non-*

*competitive*. They are controlled entirely by Big Tech companies, and there is no way to counteract them.

I have also studied and written about Google's massive surveillance operations – most of which people are completely unaware of – and Google's pervasive and unpredictable pattern of censorship, but time does not permit me to discuss my work in these areas today. On the issue of censorship, I refer the Committee Members to a 2016 report I published in *U.S. News & World Report* called “The New Censorship” (<http://bit.ly/28PgBmW>) (Epstein, 2016d), which described nine different blacklists Google maintains to suppress information worldwide. We are all aware that Google deletes or blocks access to videos on YouTube, which it owns, but few people are aware that Google blocks access to millions of websites. On January 31, 2009, Google blocked access to virtually the entire internet for 40 minutes.

By the way, it is not just conservative content that gets censored (Epstein, 2018h). At times, Google also censors progressive and socialist content. The problem with Google is not that it censors conservatives; the problem is that it has the power to determine what content billions of people worldwide *will or not see*. No single entity – especially a private company that is not accountable to the public – should have such power (Epstein, 2016d).

I know how to stop Big Tech companies dead in their tracks, and that brings me, finally, to monitoring systems and the proposal I published yesterday.

Back in 2015, a telephone call from Jim Hood, the attorney general of Mississippi, prompted me to start a years-long project in which I learned to monitor what Big Tech companies are showing real users. In early 2016, I launched my first large-scale, Neilsen-type monitoring system that allowed my team to look over people's shoulders and, with user permission, to capture the search results they were seeing on their computer screens before those results disappeared (Epstein, 2018d). I successfully deployed such systems in 2016 and 2018, and I'm raising funds now to build a much larger and more comprehensive system in early 2020 – one that will allow us to catch Big Tech companies in the act – to instantly spot when Google is showing people politically biased search results; when Twitter is suppressing tweets sent by the President, Ann Coulter, or Elizabeth Warren; when Facebook is sending out “Register to Vote” reminders only to members of one party.

This system *must* be built to keep an eye on Big Tech in 2020 because if these companies all support the same candidate – and that's likely, needless to say – they will be able to shift upwards of 15 million votes to that candidate with no one knowing and without leaving a paper trail.

To let Big Tech companies get away with invisible manipulation on this scale would be to abandon the free-and-fair election, a cornerstone of democracy. It would make democracy meaningless, even if your chosen candidate prevailed.

A worldwide network of passive monitoring systems *must* be built to protect humanity and democracy from manipulations by today's Google and the Googles of tomorrow. Only tech can fight tech; laws and regulations will never keep up (Epstein, 2018d).

Finally, yesterday I published an article explaining how Congress can quickly end Google's worldwide monopoly on search (Epstein, 2019d). The solution to The Google Problem is

to declare Google’s massive search index – the database the company uses to generate search results – to be a *public commons*, accessible by all, just as a 1956 consent decree forced AT&T to share all its patents. There is precedent in both law and in Google’s own business practices to justify taking this step.

Declaring Google’s index a commons will quickly give rise to thousands of search platforms like Google.com, each competing with Google, each providing excellent search results, each serving niche audiences, large and small, exactly like newspapers and television networks and websites do now. Search will become competitive, as it was during its early years, and democracy will be protected from Google’s secretive machinations.

In his famous departing speech in January, 1961, President Eisenhower warned about the possible rise of a “technological elite” that could control public policy without people’s awareness (Epstein, 2016a, 2018c). That elite now exists, and they have more power than you think. It’s up to Congress to determine where we go from here.

Chairman Cruz, Ranking Member Hirono, other Members of the Committee, thank you for the opportunity to testify today. I look forward to your questions.

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#### APPENDIX: The Methodology of SEME Experiments

The methodology of SEME experiments adheres to the highest standards of research in the social and behavioral sciences. All experiments are randomized, controlled, double-blind, and counterbalanced (Epstein and Robertson, 2015a). Multiple SEME experiments conducted over a period of more than five years have involved more than 10,000 participants and five national elections in four countries. Reasonable efforts have been made to assure that participants are diverse across multiple demographic characteristics, and, when possible, representative of the voting population. When samples are not representative of the voting population, adjustments are made statistically or by examining subsamples.

In most experiments, participants are selected who are “undecided,” by which I mean either that they haven’t yet made up their minds, or, in some cases, that we are deliberately showing them materials from an election they are not familiar with (for example, when we show people from the U.S. materials from an election in Australia).

All search results and web pages used in the experiments are real, drawn from the internet and from Google’s search engine. The elections we have examined are also real: the 2010 election for Prime Minister of Australia; the 2014 Lok Sabha election in India; the 2015 national election in the UK, and the 2016 and 2018 elections in the U.S.

Search results are presented to participants using a mock search engine called Kadoodle, which looks and functions almost exactly like Google. The difference between Google and Kadoodle is that with Kadoodle, we control what search results we show and the order in which those results are shown. Our search results link to copies of real web pages, but links on those pages have been disabled so we can keep our research participants in a closed online environment.

In the basic procedure, participants are randomly assigned to one of three groups: a group in which search results favor Candidate A – which means that high-ranking results link to web pages that make Candidate A look better than his or her opponent – a group favoring Candidate B, and a group in which neither candidate is favored in search results (the control group).

Participants are told they will be asked to use our custom search engine, Kadoodle, to conduct research on political candidates. They are first asked to read short paragraphs about each candidate and then asked several questions about each candidate: How much they like each candidate, trust each candidate, and so on. They are also asked, both in a binary fashion and on a scale, which candidate they would vote for if they had to vote today. These are all “pre-search questions.”

Then, typically, they are given up to fifteen minutes in which to use the Kadoodle search engine to conduct further research about the candidates. They are typically given access to five pages of search results, with six results per page (30 in total), and they can navigate through the search results and the web pages exactly as they would on Google. They can stop searching when they please.

Then they are asked those same questions about the candidates; now these are “post-search questions.”

Remember that the only difference between the three groups is the order in which the search results are shown. All participants in all three groups have full access to all the search results and all the web pages.

The typical findings are as follows:

- Prior to search, all three groups tend to answer the pre-search questions the same way.
- After the search, the opinions and voting preferences of people in the control group shift very little or not at all.
- After the search, both the opinions and the voting preferences of people in the two bias groups shift fairly dramatically in the direction of the favored candidate. In other words, opinions and votes shift in opposite directions in the two groups.
- A shift of 20 percent or more is typical. In large studies in which we have enough participants to look at demographic differences, we have found shifts in the 60-to-80 percent range in some demographic groups. In other words, some people are especially trusting of search results.
- Typically, very few people show any awareness of the bias they have seen. In a large study we conducted in India in 2014, for example – a study with more than 2,000 undecided voters throughout India in the midst of an intense election – 99.5 percent of our participants showed no awareness of bias in the search results we showed them.
- The very few people who do detect the bias tend, on average, to shift even farther in the direction of the bias.

Some of my SEME research attempts to explain why the effect is so large. One reason appears to be that people trust algorithmic output, believing that because it is computer-generated, it is inherently objective and unbiased.

Research I have conducted also suggests that SEME is a large effect because people are conditioned – very much like rats in a Skinner box – to believe that results at the top of the list are better and truer than results farther down the list (Epstein & Robertson (2016b). This is because most searches we conduct are for simple facts, such as “Who is the governor of Texas?” The correct answer always turns up at the top of the list, which is one reason 50 percent of all clicks go to the top two search positions.

But then that day comes when we search for something with a less certain answer: What is the best sushi restaurant in town? Who is the best candidate? Again, we are most likely to believe the highest-ranking answers.

When, in one experiment, we changed people’s beliefs about high-ranking search results by placing answers to simple questions in random positions in lists of search results, politically-biased search results has less impact on them.

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# To Break Google's Monopoly on Search, Make Its Index Public

The tech giant doesn't have to be dismantled. Sharing its crown jewel might reshape the internet.

By  
Robert Epstein

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Recognition is growing worldwide that something big needs to be done about Big Tech, and fast.

More than \$8 billion in fines have been levied against Google by the European Union since 2017. Facebook Inc., facing an onslaught of investigations, has dropped in reputation to almost rock bottom among the 100 most visible companies in the U.S. Former employees of Google and Facebook have warned that these companies are “ripping apart the social fabric” and can “hijack the mind.”

Adding substance to the concerns, documents and videos have been leaking from Big Tech companies, supporting fears—most often expressed by conservatives—about political manipulations and even aspirations to engineer human values.

Fixes on the table include forcing the tech titans to divest themselves of some of the companies they’ve bought (more than 250 by Google and Facebook alone) and guaranteeing that user data are transportable.

But these and a dozen other proposals never get to the heart of the problem, and that is that Google’s search engine and Facebook’s



social network platform have value only if they are intact. Breaking up Google's search engine would give us a smattering of search engines that yield inferior results (the larger the search engine, the wider the range of results it can give you), and breaking up Facebook's platform would be like building an immensely long Berlin Wall that would splinter millions of relationships.

With those basic platforms intact, the three biggest threats that Google and Facebook pose to societies worldwide are barely affected by almost any intervention: the aggressive surveillance, the suppression of content, and the subtle manipulation of the thinking and behavior of more than 2.5 billion people.

Different tech companies pose different kinds of threats. I'm focused here on Google, which I've been studying for more than six years through both experimental research and monitoring projects. (Google is well aware of my work and not entirely happy with me. The company did not respond to requests for comment.) Google is especially worrisome because it has maintained an unopposed monopoly on search worldwide for nearly a

decade. It controls 92 percent of search, with the next largest competitor, Microsoft's Bing, drawing only 2.5%.

Fortunately, there is a simple way to end the company's monopoly without breaking up its search engine, and that is to turn its "index"—the mammoth and ever-growing database it maintains of internet content—into a kind of public commons.

There is precedent for this both in law and in Google's business practices. When private ownership of essential resources and services—water, electricity, telecommunications, and so on—no longer serves the public interest, governments often step in to control them. One particular government intervention is especially relevant to the Big Tech dilemma: the 1956 consent decree in the U.S. in which AT&T agreed to share all its patents with other companies free of charge. As tech investor Roger McNamee and others have pointed out, that sharing reverberated around the world, leading to a significant increase in technological competition and innovation.

Doesn't Google already share its index with everyone in the world? Yes, but only for single searches. I'm talking about requiring Google to share its entire index with outside entities—businesses, nonprofit organizations, even individuals—through what programmers call an application programming interface, or API.

Google already allows this kind of sharing with a chosen few, most notably a small but ingenious company called Startpage, which is based in the Netherlands. In 2009, Google granted Startpage access to its index in return for fees generated by ads placed near Startpage search results.

With access to Google's index—the most extensive in the world, by far—Startpage gives you great search results, but with a difference. Google tracks your searches and also monitors you in other ways, so it gives you personalized results. Startpage doesn't track you—it respects and guarantees your privacy—so it gives you generic results. Some people like customized results; others treasure their privacy. (You might have heard of another privacy-oriented alternative to Google.com called DuckDuckGo, which aggregates

information obtained from 400 other non-Google sources, including its own modest crawler.)

If entities worldwide were given unlimited access to Google's index, dozens of Startpage variants would turn up within months; within a year or two, thousands of new search platforms might emerge, each with different strengths and weaknesses. Many would target niche audiences—some small, perhaps, like high-end shoppers, and some huge, like all the world's women, and most of these platforms would do a better job of serving their constituencies than Google ever could.

These aren't just alternatives to Google, they are competitors—thousands of search platforms, each with its special focus and emphasis, each drawing on different subsets of information from Google's ever-expanding index, and each using different rules to decide how to organize the search results they display. Different platforms would likely have different business models, too, and business models that have never been tried before would quickly be tested.

This system replicates the competitive ecology we now have of both traditional and online media sources—newspapers, magazines, television channels, and so on—each drawing on roughly the same body of knowledge, serving niche audiences, and prioritizing information as it sees fit.

But what about those nasty filter bubbles that trap people in narrow worlds of information? Making Google's index public doesn't solve that problem, but it shrinks it to nonthreatening proportions. At the moment, it's entirely up to Google to determine which bubble you're in, which search suggestions you receive, and which search results appear at the top of the list; that's the stuff of worldwide mind control. But with thousands of search platforms vying for your attention, the power is back in your hands. You pick your platform or platforms and shift to others when they draw your attention, as they will all be trying to do continuously.

If that happens, what becomes of Google? At first, not much. It should be allowed, I believe, to retain ownership and control of its index. That will assure it continues to do a

great job maintaining and updating it. And even with competition looming, change will take time. Serious competitors will need months to gather resources and generate traffic. Eventually, though, Google will likely become a smaller, leaner, more diversified company, especially if some of the other proposals out there for taming Big Tech are eventually implemented. If, over time, Google wants to continue to spy on people through its search engine, it will have to work like hell to keep them. It will no longer be able to rest on its laurels, as it has for most of the past 20 years; it's going to have to hustle, and we will all benefit from its energy.

My kids think Google was the world's first search engine, but it was actually the 21st. I can remember when search was highly competitive—when Yahoo! was the big kid on the block and engines such as Ask Jeeves and Lycos were hot commodities. Founded in 1998 amid a crowded field of competitors, Google didn't begin to dominate search until 2003, by which time it still handled only about a third of searches in the U.S. Search can be competitive again—this time with a massive, authoritative,

rapidly expanding index available to all parties.

The alternative is frightening. If Google retains its monopoly on search, or even if a government steps in and makes Google a public utility, the obscene power to decide what information humanity can see and how that information should be ordered will remain in the hands of a single authority. Democracy will be an illusion, human autonomy will be compromised, and competition in search—with all the innovation that implies—might never emerge. With internet penetration increasing rapidly worldwide, do we really want a single player, no matter how benign it appears to be, to control the gateway to all information?

For the system I propose to work fairly and efficiently, we'll need rules. Here are some obvious ones to think about:

**Access.** There might have to be limits on who can access the API. We might not want every high school hacker to be able to build his or her own search platform. On the other hand, imagine thousands of Mark Zuckerbergs

battling each other to find better ways of organizing the world's information.

**Speed.** Google must not be allowed to throttle access to its index, especially in ways that give it a performance advantage or that favor one search platform over another.

**Content.** To prevent Google from engineering humanity by being selective about what content it adds to its index, all parties with API access must be able to add content.

**Visibility.** For people using Google to seek information about other search platforms, Google must be forbidden from driving people to itself or its affiliated platforms.

**Removal.** Google must be prohibited from removing content from its index. The only exception will be when a web page no longer exists. An accurate, up-to-date record of such deletions must be accessible through the API.

**Logging.** Google must log all visits to its index, and that log must be accessible through the API.

**Fees.** Low-volume external platforms (think: high school hackers) should be able to access the index free of charge. High-volume users (think: Microsoft Corp.'s Bing) should



pay Google nominal fees set by regulators. That gives Google another incentive for maintaining a superior index.

Can we really justify bludgeoning one of the world's biggest and most successful companies? When governments have regulated, dismembered, or, in some cases, taken ownership of private water or electricity companies, they have done so to serve the public interest, even when the company in question has developed new technologies or resources at great expense. The rationale is straightforward: You may have built the pipelines, but water is a "common" resource that belongs to everyone, as David Bollier reminded us in his seminal book, *Silent Theft: The Private Plunder of Our Common Wealth*.

In Google's case, it would be absurd for the company to claim ownership rights over the contents of its index for the simple reason that it gathered almost all those contents. Google scraped the content by roaming the internet, examining webpages, and copying both the address of a page and language used on that page. None of those websites or any external

authority ever gave Google permission to do this copying.

Did any external authority give Google permission to demote a website in its search results or to remove a website from its index? No, which is why both individuals and even top business leaders are sometimes traumatized when Google demotes or delists a website.

But when Google's index becomes public, people won't care as much about its machinations. If conservatives think Google is messing with them, they'll soon switch to other search platforms, where they'll still get potentially excellent results. Given the possibility of a mass migration, Google will likely stop playing God, treating users and constituencies with new respect and humility.

Who will implement this plan? In the U.S., Congress, the Federal Trade Commission, and the Department of Justice all have the power to make this happen. Because Google is a global company with, at this writing, 16 data centers—eight in the U.S., one in Chile, five in the EU, one in Taiwan, and one in Singapore—countries outside the U.S. could also declare

its index to be a public commons. The EU is a prime candidate for taking such action.

But there is another possibility—namely, that Google itself will step up. This isn't as crazy as you might think. Likely prompted by the EU antitrust investigations, the company has quietly gone through two corporate reorganizations since 2015, and experts I've talked to in both the U.S. and the U.K. say the main effect of these reorganizations has been to distance Google's major shareholders from any calamities that might befall the Google search engine. The company's lawyers have also undoubtedly been taking a close look at the turbulent years during which Microsoft unsuccessfully fought U.S. antitrust investigators.

Google's leaders have been preparing for an uncertain future in which the search engine might be made a public utility, fined into bankruptcy, frozen by court orders, or even seized by governments. It might be able to avoid ugly scenarios simply by posting the specs for its new public API and inviting people and companies around the world to compete with its search platform. Google

could do this tomorrow—and generate glowing headlines worldwide. Google’s data analysts know how to run numbers better than anyone. If the models predict that the company will make more money, minimize risk, and optimize its brand in coming years by making its index public, Google will make this happen long before the roof caves in.

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