

GOOGLE'S TRIPLE THREAT

TO DEMOCRACY, OUR CHILDREN,
AND OUR MINDS

ROBERT EPSTEIN, PH.D.

Senior Research Psychologist
American Institute for Behavioral Research and Technology

GOOGLE'S TRIPLE THREAT

To Democracy, Our Children, and Our Minds

Robert Epstein, Ph.D.

Senior Research Psychologist
American Institute for Behavioral Research and Technology

An updated and expanded version of Dr. Epstein's
Congressional Testimony of July 16, 2019

January 20, 2022

Table of Contents

A Personal Introduction, 3

Disturbing Scientific Discoveries, 6

But What About the Russians? 11

Google Is the Biggest Threat, 12

The Surveillance Business Model, 15

And It's Not Just Google, 16

A Brief Note About a Critically Important
Demographic: Our Children, 17

Monitoring Systems: The Key to Keeping Big
Tech Out of Our Elections, 18

A Simple Way of Quickly Ending Google's
Worldwide Monopoly on Search, 21

President Eisenhower's Warning, 22

References, 23

Appendix I: Links of Possible Interest, 33

Appendix II: The Methodology of SEME
Experiments, 34

Appendix III: Dr. Epstein's Article in *Bloomberg
Businessweek*, "To Break Google's Monopoly on
Search, Make Its Index Public," 37

A Personal Introduction

I am not a conservative, and I am not writing this essay to advance a political agenda. If anything, I lean left politically, so I should be applauding Google and the other Big Tech companies for their recent support of liberal candidates and causes.

But I can't applaud, because rigorous research I have been conducting since 2013 has shown me how dangerous these companies are – Google-and-the-Gang, I call them. **The rise of the internet has given these companies unprecedented power to control public policy, to swing elections, to brainwash our children, to censor content, to track our every move, to tear societies apart, to alter the human mind, and even to reengineer humanity.**

That last idea comes from an 8-minute video (<https://is.gd/44KCDm>) that leaked from Google in 2018. To Google executives, “resequencing human behavior” in a way that “reflects Google’s values” (<https://is.gd/VUC5nl>) is a great idea. My research shows they have the power to do it, and former Google employees such as Tristan Harris and Zach Vorhies have confirmed in recent years that Google is indeed using the powerful new tools of influence I study to influence people on a massive scale.



Figure 1. Leaked 8-minute video from Google explaining how the company can reengineer humanity. Transcript at <https://is.gd/VUC5nl>.

As Ruth Porat, Chief Financial Officer of Google, put it at an all-hands meeting of Google employees held three days after Trump won the 2016 election, “Our values are strong. We will fight to protect them, and *we will use the great strength and resources and reach we have* to continue to advance really important values.”

Recently, a former Facebook employee, Frances Haugen, released a treasure-trove of internal documents showing that Facebook deliberately creates widespread societal chaos to improve its bottom line. More chaos means more online traffic, and more traffic means more money for Facebook.

I am helping to expose these companies because I love America and democracy and freedom, and because these companies are now undermining all three of these sacred institutions in ways very few people understand – even our leaders, the people who have sworn to protect our country from harm.

Even if our leaders did understand the real threats the Big Tech monopolies pose, I doubt that they would intervene. Many of them depend on tech money for their campaigns (Alphabet, Google’s parent company, was Hillary Clinton’s largest donor in 2016), and they all live in constant fear that these companies will suddenly erase them. Remember when Facebook and Twitter shut down President Trump’s accounts in early 2021? In a split second, they severed the two main links Trump had to his tens of millions of supporters.

I am not one of those supporters, but **do we really want executives at private companies deciding whether our nation’s leaders can or cannot communicate with the public?**

When our leaders do hold hearings and rattle their swords about Google-and-the-Gang, it’s mainly for show. Right now both houses of Congress and many state attorneys general are threatening to “break up” Google and Facebook through antitrust actions. This is complete nonsense, and our leaders know it.

Even if the government forced Google or Facebook to sell off some of the companies they have bought over the years (Google buys a new company roughly every week), that would do little to curtail the obscene power these companies have. Why? Because *you can’t break up Google’s search engine* (it needs to be whole to give good results), and *you can’t break up Facebook’s social media platform* (doing so would split up tens of millions of families and hundreds of millions of friend connections).

Those platforms are the main tools Google and Facebook use for surveillance, censorship, and manipulation. Google and Facebook executives know this, and they know those platforms can't be touched by our government. That is why their lawyers have worked closely with government officials to *craft* the antitrust actions that are currently in progress. This is a classic case of “regulatory capture” – an old tradition in corporate America. The kinds of breakups that might eventually occur will actually *help* Google-and-the-Gang – consolidating their power and enriching them beyond measure, all while creating the false impression that they have now been tamed by our government.

As the father of five children, I am especially concerned about what humanity's future will look like if Big Tech is allowed to continue unobstructed on its path toward world domination. In the 1950s, British economist Kenneth Boulding wrote, “A world of unseen dictatorship is conceivable, still using the forms of democratic government.” I am writing this essay because I believe that such a world already exists, and that unless we act quickly and decisively, the power that the technology company executives have garnered will become so firmly entrenched that we will never be able to unseat them from their invisible thrones.

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*. 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, on the massive surveillance the company conducts, and on the company's unprecedented ability to manipulate the thoughts and behavior of more than 3 billion people worldwide.

Data I have collected since 2016 show that Google displays content to the American public that is biased in favor on one political party (Epstein et al., 2021) (<https://is.gd/RTicxm>) – a party I happen to like, but that is irrelevant. No private company should have either the right or the power to manipulate large populations without their knowledge.

I have 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*, *Politico*, *Dissent*, *The Hill*, and *Huffington*

Post, for example, but also in *The Daily Caller*, *The Epoch Times*, and even in Russia's *Sputnik News*.

I reach out to diverse 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.

Disturbing Scientific Discoveries

Here are six disturbing findings from my research, which adheres to the very highest scientific standards:

1. In 2016, biased search results generated by Google's search algorithm likely impacted undecided voters in a way that gave between 2.6 and 10.2 million votes to Hillary Clinton (whom I supported). I know this because my team and I preserved more than 13,000 election-related searches conducted by a politically diverse group of 95 Americans in 24 states 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

The search engine manipulation effect (SEME) and its possible impact on the outcomes of elections

Robert Epstein¹ and Ronald E. Robertson

American Institute for Behavioral Research and Technology, Vista, CA 92084

Edited by Jacob N. Shapiro, Princeton University, Princeton, NJ, and accepted by the Editorial Board July 8, 2015 (received for review October 16, 2014)

Internet search rankings have a significant impact on consumer choices, mainly because users trust and choose higher-ranked results more than lower-ranked results. Given the apparent power of search rankings, we asked whether they could be manipulated to alter the preferences of undecided voters in democratic elections. Here we report the results of five relevant double-blind, randomized controlled experiments, using a total of 4,556 undecided voters representing diverse demographic characteristics of the voting populations of the United States and India. The fifth experiment is especially notable in that it was conducted with eligible voters throughout India in the midst of India's 2014 Lok Sabha elections just before the final votes were cast. The results of these experiments demonstrate that (i) biased search rankings can shift the voting preferences of undecided voters by 20% or more, (ii) the shift can be much higher in some demographic groups, and (iii) search ranking bias can be masked so that people show no awareness of the manipulation. We call this type of influence, Primacy effects in particular have been shown to have a favorable influence on the formation of attitudes and beliefs (18–20), enhance perceptions of corporate performance (21), improve ratings of items on a survey (22–24), and increase purchasing behavior (25). More troubling, however, is the finding that primacy effects have a significant impact on voting behavior, resulting in more votes for the candidate whose name is listed first on a ballot (26–32). In one recent experimental study, primacy accounted for a 15% gain in votes for the candidate listed first (30). Although primacy effects have been shown to extend to hyperlink clicking behavior in online environments (33–35), no study that we are aware of has yet examined whether the deliberate manipulation of search engine rankings can be leveraged as a form of persuasive technology in elections. Given the power of order effects and the impact that search rankings have on consumer attitudes and behavior, we asked whether the deliberate manipulation of search rankings pertinent to candidates in political elections could alter the attitudes, beliefs, and behavior of undecided voters.

Figure 2. SEME was discovered in 2013 and was reported by the *Washington Post* that spring. Five randomized, controlled experiments demonstrating the effect were published in the *Proceedings of the National Academy of Sciences USA* in 2015.

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. There was no such bias on the Bing or Yahoo search engines.

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 the extent to which 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 100,000 times. SEME has also been replicated by multiple researchers, including 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 is a phrase you will find in internal emails that have leaked from Google. 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 Appendix II at the end of this document.)

Since 2013, I have discovered about a dozen subliminal effects like SEME, and my team and I am currently studying and quantifying seven of them in addition to SEME (see References list at the end of this essay, and also Epstein, 2018i at <https://is.gd/DbIhZw>), as follows:

- ABE: The Answer Bot Effect (see below for more information)
- DDE: The Differential Demographics Effect
- DPE: The Digital Personalization Effect
- OME: The Opinion Matching Effect
- SSE: The Search Suggestion Effect
- TME: The Target Messaging Effect
- YME: The YouTube Manipulation Effect

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



Figure 3. Because of the demographics of the people who use Google, a vote reminder like the one you see above is NOT a public service. It is a vote manipulation. If Google sends it to everyone, it will still give Democrats 800,000 more votes than it gives Republicans. If Google sends it just to Democrats (and who would know, unless monitoring systems are in place?), it could give them 4 million additional votes. Reminders to register to vote work the same way.

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*. This type of vote manipulation is an example of what I call the "Differential Demographics Effect" (DDE).

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 et al., 2021) (<https://is.gd/RTicxm>).

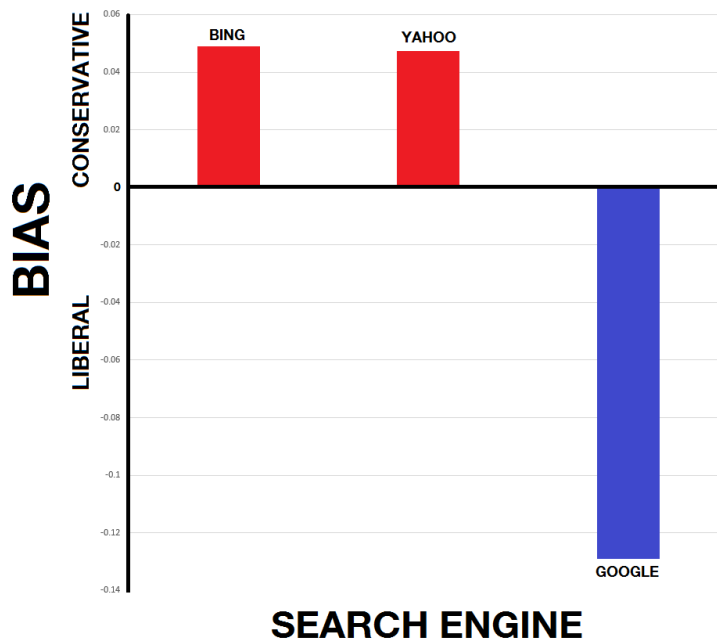


Figure 4. In the days leading up to the 2020 Presidential election, bias in Google search results, which can easily shift the voting preferences of undecided voters – people Google can easily identify – had a strong liberal bias.

4. In the days leading up to the 2020 Presidential election and the 2021 Senate runoff elections in Georgia, my team and I preserved more than 1.5 million politically-related ephemeral experiences on Google, Bing, Yahoo, YouTube, Facebook and other platforms, and we also preserved more than 3 million web pages. Once again, we found extreme political bias on Google and YouTube (which is owned by Google), sufficient to have shifted at least 6 million votes in the Presidential election without people's knowledge. More important, a letter reporting our preliminary findings sent to the CEO of Google by three U.S. Senators on November 5, 2020, *forced Google to stay out of the Georgia elections*. In "Taming Big Tech" (<https://TamingBigTech.com>) and other essays, I argue that setting up a permanent, large-scale monitoring system like the ones we have implemented is the only effective way to prevent Big Tech companies from undermining our democracy, brainwashing our children, and controlling our minds. My most recent election monitoring findings are summarized in a 15-minute video at <https://TheCaseForMonitoring.com>.
5. My recent research demonstrates that Google's "autocomplete" search suggestions can turn a 50/50 split among undecided voters into nearly 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.

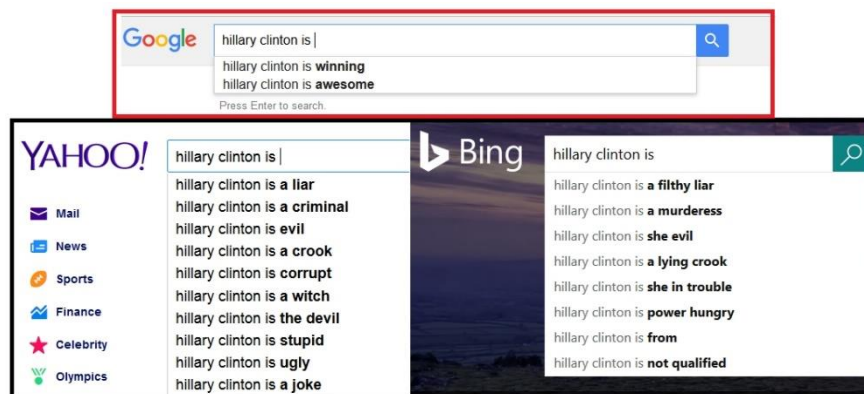


Figure 5. Google uses its autocomplete search suggestions to manipulate opinions and voting preferences. One of the simplest ways to support a candidate is to suppress negative search terms. These screenshots from the summer of 2016 show Google was suppressing negative search suggestions to a ludicrous extent to support Clinton.

6. 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).

But What About the Russians?

These new forms of manipulation are nothing like Russian-placed ads or fake news stories. Russian interference, although troubling and unacceptable, can shift only a handful of votes – in a national election, perhaps tens of thousands at most (Epstein, 2017d, 2018a). But Google-and-the-Gang can easily shift *millions* of votes, especially if they all support the same candidate or party, which they tend to do.

Ads and news stories are competitive and visible, like billboards. But the kinds of ephemeral effects I am studying are *invisible* and *non-competitive*. They are controlled entirely by Google-and-the-Gang in almost every country in the world, 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. On the issue of censorship, you might want to read the 2016 report I published in *U.S. News & World Report* called "The New Censorship" (<http://bit.ly/28PgBmW>) (Epstein, 2016d), which describes 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.

Before I spoke at that Senate hearing in 2019, Mr. Karan Bhatia, Google's Vice President for Government Affairs and Public Policy, testified. He was placed under oath and asked some tough questions by our Senators. One question was, "Does Google have any blacklists?" That was an important question, because one of the simplest ways for a tech company to censor content is to have its algorithms check a blacklist before it displays that content. When a person or website or organization is on the blacklist, the algorithm suppresses the content.

Mr. Bhatia replied, “No, Senator, we don’t.”

That was a blatant lie, and lying to Congress is a felony. Just three weeks after that hearing, Zach Vorhies, a long-time senior software engineer at Google, quit his job there and mailed nearly a thousand pages of internal Google documents to the U.S. Attorney General. **Among those documents were three of Google’s blacklists – and each of them was actually labeled “blacklist.”** None of those three lists was mentioned in my “New Censorship” article, which suggests that the actual number of blacklists Google uses to suppress content might be quite large.

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).

Censorship is an especially pernicious form of manipulation because, as I keep telling anyone who will listen, **“You don’t know what they don’t show.”**

Google Is the Biggest Threat

Google is the biggest and most dangerous of the new online manipulation platforms, in part because it was founded by utopians, who, over time, attracted other utopians to work for them. Google corporate culture revolves around the idea that we’re here to create a better world, where “better” is defined by the prevailing company values.

If you doubt that, check out the leaked PowerPoint presentation, “The Good Censor” (<https://is.gd/ASaiLo>), in which Google employees freely acknowledge that their algorithms necessarily boost some content while suppressing other content – in other words, the algorithms determine what three billion people around the world *can or cannot* see.

But Google, they argue, is a “good” censor, because “Googlers” (their word, not mine) know best about what content should be suppressed. Google employees can’t help but talk openly about this issue for a simple reason: As the gateway to all

knowledge in almost every country in the world (everywhere but China and North Korea), Google is now the biggest and most aggressive censor in human history.

If that PowerPoint presentation doesn't convince you, watch the 8-minute video I mentioned earlier. "[The Selfish Ledger](#)" was created by Google's advanced products division, and it was never meant to be seen outside the company. It's about the company's ability to *reengineer humanity*. Google has that ability, and, because no laws or regulations exist that constrain Google's activities, the company is exercising that ability freely worldwide.

About a dozen whistleblowers from Google have now come forward, and they have all confirmed that this heady agenda is real at Google. Google is out to make the world a better place, and where the company's version of "better" conflicts with someone else's, they *suppress* the opposing view: in search results, newsfeeds, answer boxes (which often appear above search results), YouTube videos, answers they give people through their personal assistants (Google Home and the Google Assistant on Android devices), and more.

In the aggressive online monitoring we did in the days leading up to the 2020 Presidential election and the 2021 Senate runoff elections in Georgia, we found that a whopping 93% of the election-related videos YouTube was suggesting to users had a strong liberal bias. And that bias wasn't present just in videos offered to liberal users; it was present at an even higher level for users identifying themselves as conservatives or moderates (Epstein et al., 2021) (<https://is.gd/RTicxm>).



Figure 6. In another leaked video, the CEO of YouTube informs her staff about changes being made to YouTube's up-next algorithm. Content the company views as valid is boosted in rankings, and content the company views as suspect is suppressed.

The bias in YouTube's "up-next" algorithm was explained in yet another leaked video (<https://vimeo.com/354354050>) in which Susan Wojcicki, still the CEO of YouTube, explains to her staff in 2017 – the year that Donald Trump became President – how the algorithm that determines which videos people see was being modified to *boost* good content and *suppress* bad content. On a large screen behind her you see a huge up-arrow next to a huge down-arrow to symbolize the process.

This is troubling news given that 70 percent of the videos people watch on YouTube worldwide are suggested by that up-next algorithm (<https://is.gd/JWRG8A>).

Even more disturbing: Randomized, controlled experiments my team and I have been conducting over the past year show that **bias in YouTube's up-next algorithm can easily shift more than 40% of undecided voters toward whichever candidate we choose**. Worse still, our experiments show that this effect, which we called the YouTube Manipulation Effect (YME), can easily be masked so that almost no one is aware that the sequence of videos they are being shown is biased.

Still not convinced? Worldwide, people watch *5 billion* videos on YouTube every day, 3.5 billion of which are suggested by that up-next algorithm, and because Google personalizes the content it shows us based on massive amounts of information it collects through our online activities (emails, search histories, YouTube histories, website visits, Google Docs, and much more), along with everything it hears through Android phones and the Google Home device, Google *personalizes* the list of videos it shows people to maximize their impact.

As any con artist can tell you, the more you know about someone, the easier it is to manipulate him or her. We have now begun to study and quantify this power, which we call the Digital Personalization Effect (DPE).

If you already have strong views on a topic – vaccination, Trump, immigration, abortion, and so on – Google will mainly show you more of what you want to see. But if you are *undecided* on some issue – where to vacation, which microwave oven to buy, or which candidate to vote for – Google is in control. It owns your brain – and, even more so, the brains of your children.

The Surveillance Business Model

Google is, by far, the most dangerous member of the Gang. It is the most aggressive in its surveillance, censorship, and manipulation activities. It also invented the “surveillance business model,” which is now being emulated by thousands of companies worldwide. This business model, which Tim Cook, Apple’s CEO, has called “creepy,” turns the customer into the product. Here is how it works:

- 1) You attract people to online surveillance platforms where you extract as much personal information about them as you can multiple times a day.
- 2) You motivate them to visit these platforms by offering them trivial services “free of charge.” These services – like Gmail, the Google search engine, and Google Docs – truly are trivial. If you had to pay for them – *all* of them – they would cost you about \$10 per month.
- 3) You monetize the personal information you are collecting, a process that is now bringing Google nearly \$150 billion per year in revenue. Even though you continue to provide the same trickle of trivial services to your users every day, over time, the profile you have compiled about each and every one of them – including the children – has become enormous. **If you have been using the internet for a decade or more, Google has collected the equivalent of about 3 million pages of information about you.** They are currently monitoring you and your kids over more than 200 platforms, most of which you are completely unaware of.
- 4) Google uses this profile – this *dossier*, as criminal investigators might call it – to create a digital model of you that they use both to *predict your behavior and needs* and to *influence your attitudes, beliefs, opinions, purchases, and votes*.

The surveillance business model is brilliant from a profit perspective, but it is also fundamentally deceptive, and I and many others believe it should be made illegal.

Google services are *not* free. We pay for them with our freedom. See my essay, “Free Isn’t Freedom” for more information about this issue (Epstein, 2016h, <https://is.gd/OIeNt6>).

And It's Not Just Google

Google is the most dangerous of the Gang, but Facebook, Amazon, Twitter, and, yes, even Apple, also pose threats to our democracy. I am also starting to worry about Microsoft, which entered into a secret pact with Google in early 2016 and which seems, since then, to have finally bought into Google's surveillance model. Microsoft Windows versions 10 and 11 do some *serious* tracking, and there are indications that Microsoft's seldom-used search engine Bing is now drawing its content from Google, just as Yahoo has been doing for years and just as Siri does to get answers posed to questions on Apple devices.

One of my newest areas of research is on "intelligent personal assistants" – IPAs – such as Apple's Siri, Google's Assistant, Google's Home device (which Google insists you should install in every room in your house or apartment), and the most popular of these devices: Amazon's Alexa.

All of these are *S&M* devices, which in the present context stands for *Surveillance and Manipulation*.

Using an Alexa simulator my team and I call "Dyslexa" – and, yes, she talks, and she sounds just like Alexa – we have lately been conducting controlled experiments to measure the power that biased answers have on people's opinions and voting preferences – an effect we call the Answer Bot Effect (ABE). Here is a summary of a research paper that we recently submitted for publication in a scientific journal:

We describe three experiments with a total of 1,736 U.S. participants conducted to determine to what extent giving users "the answer" – either via an answer box at the top of a page of search results or via a vocal reply to a question posed to an intelligent personal assistant (IPA) – might also impact opinions and votes.

Participants were first given basic information about two candidates running for prime minister of Australia (this, in order to assure that participants were "undecided"), then asked questions about their voting preferences, then given answers to questions they posed about the candidates – either with answer boxes or with vocal answers on an Alexa simulator – and then asked again about their voting preferences. The experiments were controlled, randomized, double-blind, and counterbalanced.

Experiments 1 and 2 demonstrated that answer boxes can shift opinions by as much as 38.6% and that the appearance of an answer box reduces search times and clicks on search results.

Experiment 3 demonstrated that *even a single question-and-answer sequence on an IPA can shift voting preferences by more than 40%.*

Multiple questions posed to an IPA leading to answers that all have the same bias can shift voting preferences by more than 65%. Simple masking procedures still produced large opinion shifts while reducing awareness of bias to close to zero.

ABE poses a serious threat to both democracy and human autonomy because (a) it produces large shifts in opinions and voting preferences with little or no user awareness, (b) it is an ephemeral form of influence that leaves no paper trail, and (c) worldwide, it is controlled almost exclusively by just four American tech companies. ABE will become a greater threat as people increasingly rely on IPAs for answers.

Again, note those italics. A single biased answer provided by a personal assistant like Alexa can produce *more than a 40 percent shift* in voting preferences in a group of undecided voters.

To me, this shows – yet again – that we have been asleep at the wheel. We have let dangerous technologies overtake our lives without understanding the risks we were taking. We have let ourselves get distracted by the little goodies we get (Wow! My phone is give me turn-by-turn driving directions!) without looking under the hood: the company that is giving you directions knows *where you are right now* and *where you have been every second of the day* for years.

And that company has been monetizing that information and using it to “sequence” your behavior without your awareness.

A Brief Note About a Critically Important Demographic: Our Children

I have been studying new forms of influence for a long time, almost exclusively with adults. But an existing body of research suggests that these new, often invisible, ways of changing people’s thinking and behavior are likely to have a much bigger impact on children than on adults.

And who is more attached to new tech devices than anyone else? Our *children*, who are often unattended when they are immersed in social media or playing games or communicating with other people on their computers or mobile devices. That is why – with parents' permission – my team and I are now in the process of expanding our research to look at how new forms of influence are affecting young people.

I expect our findings, which we should begin to release about a year from now, to be especially disturbing.

Monitoring Systems: The Key to Keeping Big Tech Out of Our Elections

I know how to stop Big Tech companies dead in their tracks, and that brings me, finally, to monitoring systems and then to the article I published in 2019 in *Bloomberg Businessweek*.

In the summer of 2015, a telephone call I received from Jim Hood, the attorney general of Mississippi, prompted me to start a years-long project in which I learned



Taming Big Tech: The Case for Monitoring

Originally published by Robert Epstein on May 13th 2018 ★ 12,234 reads □

How, working in the shadows of the internet, researchers developed a passive monitoring system that might soon make Big Tech companies accountable to the public—and even save democracy.



Figure 7. "Taming Big Tech" explains how our first election monitoring system was developed and deployed several months before the 2016 Presidential election. It is accessible at <https://TamingBigTech.com>.

how to monitor what Big Tech companies are showing real users – in other words, *how to do to them what they do to us and our children 24 hours a day.*

In early 2016, my team and I launched our first Nielsen-type monitoring system with 95 field agents in 24 U.S. states. It allowed us to look over people's shoulders and, with their permission, to capture the ephemeral search results they were seeing on their computer screens before those results disappeared (<https://TamingBigTech.com>) (Epstein, 2018d). My team and I successfully deployed such systems in 2016 and 2018, and we greatly expanded our monitoring capabilities to track Big Tech activities in the days leading up to the 2020 Presidential election and the 2021 Senate runoff elections in Georgia.

To view a 15-minute summary of our findings in the 2020 and 2021 elections, please view the video at <https://is.gd/RTicxm>. And here is the summary of a paper about our findings which we recently submitted to a scientific conference:

The internet has made it possible for a small number technology monopolies to dominate the thinking, behavior, and votes of more than three billion people worldwide using new subliminal techniques. We have discovered and quantified several of these techniques in controlled experiments conducted since 2013, and in 2016, we developed technology that allowed us to preserve search results – “ephemeral content” that influences opinions and is normally lost forever – on the Google, Bing, and Yahoo search engines.

In 2020, we improved our monitoring technology to preserve a wide variety of online content in the days leading up to the 2020 Presidential election and the 2021 Senate elections in Georgia. Our team installed custom software on the computers of a politically-diverse group of 1,735 registered voters (our “field agents”) in four swing states – Arizona, Georgia, Florida, and North Carolina. This software allowed us to “look over the shoulders” of our field agents (with their permission) as they viewed politically-related content on the Google, Yahoo, and Bing search engines, as well as on Google's home page, the YouTube platform, and Facebook's home page.

Overall, we preserved more than 1.5 million ephemeral experiences for analysis and found substantial political bias in Google search results and

in YouTube's "up-next" algorithm, sufficient to have shifted millions of votes in the 2020 Presidential election without people's knowledge.

We went public with some of our preliminary findings on October 30, 2020, and, based on these findings, three U.S. Senators sent a warning letter to the CEO of Google on November 5, 2020, 2 days after Election Day. *This warning appears to have forced Google to prevent biased political content from appearing on its platforms in Georgia on the days leading up to the runoff elections*; in other words, none of our 1,003 Georgia field agents saw bias on Google on those days. We argue that building large-scale, permanent monitoring systems is essential for protecting democracy from being undermined by emerging technologies in future years. Laws and regulations move too slowly to keep up with new technologies, but monitoring systems can because they *are* technology.

The key sentence in that summary is the one in italics: *This warning appears to have forced Google to prevent biased political content from appearing on its platforms in Georgia on the days leading up to the runoff elections.*

In other words, *by monitoring and exposing Big Tech shenanigans, we can get these companies to stop their manipulations.*

During the year following the Georgia runoffs, we have made significant progress toward developing a machine-learning algorithm that can instantly identify the political bias in web pages. This means that in future elections – include the 2022 midterm elections in the U.S. – we will be able to track and expose political manipulations *as they are occurring* – reporting our findings to journalists, members of Congress, the U.S. Attorney General, and the Federal Election Commission.

If our experience in the last election cycle is any indication, this means *we will be able to restore the free-and-fair election process in the U.S.* – or at least keep Google-and-the-Gang from interfering.

In the 2020 Presidential election, we believe that these companies shifted more than 6 million votes without people's knowledge, and that is a tragedy for democracy. But it doesn't have to be that way. As soon as we can find the funding, we are ready

to build a permanent, large-scale, self-funding monitoring system in all 50 U.S. states.

Such a system *must* be built. This next step in our technological development is not optional. If we fail to build such a system, we will be abandoning the free-and-fair election, a cornerstone of democracy. This will make democracy meaningless, even if your chosen candidate prevails.

Ultimately, 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).

A Simple Way of Quickly Ending Google's Worldwide Monopoly on Search

On July 15, 2019 – the day before my Congressional testimony – I published a feature article in *Bloomberg Businessweek* explaining how Congress can quickly end Google's worldwide monopoly on search (reprinted in full in Appendix III below) (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. This is light-touch regulation, and there is precedent for it in both law and in Google's own business practices.

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.

With thousands of search engines vying for our attention, search will also become innovative again. Have you noticed that there have been no innovations in search since Google became the dominant search engine almost 20 years ago? That's what monopolies do: they kill innovation.

President Eisenhower's Warning

In his famous departing speech in January, 1961, President Dwight D. 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.

Democracy as originally conceived cannot survive Big Tech as currently empowered. It is up to our leaders – and to every one of us as individuals – to determine where we go from here.

Please see Appendix I (following References) for links of possible interest.

REFERENCES

Attached Article (Appendix III, Cited in the 2019 Congressional Testimony):

Epstein, R. (2019d, July 15). To break Google's monopoly on search, make its index public. *Bloomberg Businessweek*.
<https://www.bloomberg.com/news/articles/2019-07-15/to-break-google-s-monopoly-on-search-make-its-index-public>

Other Relevant Publications and Peer-Reviewed Conference Papers (Some Cited in the Testimony)

2022:

Epstein, R., Bock, S., Peirson, L., Wang, H., & Voillot, M. (submitted for presentation). *How we preserved more than 1.5 million online "ephemeral experiences" in the recent U.S. elections, and what this content revealed about online election bias.*

Epstein, R., & Voillot, M. (submitted for presentation). *The YouTube Manipulation Effect (YME): The power that bias in YouTube's up-next algorithm has to shift votes and opinions, and preliminary evidence that such bias exists.*

Epstein, R., & Lee, V. (submitted for publication). *The Answer Bot Effect (ABE): A powerful new form of influence made possible by intelligent personal assistants and search engines.*

Epstein, R., & Huang, Y. (submitted for presentation). *The Opinion Matching Effect (OME): A subtle but powerful new form of influence that is being widely used on the internet without user awareness.*

Epstein, R., & Zankich, V. R. (in press). The surprising power of a click requirement: How click requirements and warnings affect internet users' willingness to disclose personal information. *PLoS ONE*.
https://aibr.org/downloads/EPSTEIN & ZANKICH-2022-in_press-The_Surprising_Power_of_a_Click_Requirement.pdf

Epstein, R., Bordyug, M., Chen, Y., Chen, Y., Ginther, A., Kirkish, G., & Stead, H. (in press). The search for the perfect blade runner: A large, international assessment of a test that screens for "humanness sensitivity." *AI & Society*.

https://aibrt.org/downloads/EPSTEIN_et_al.-2022-in_press-The_Search_for_the_Perfect_Blade_Runner.pdf

Epstein, R. (in press). The technological elite are now in control. Chapter to appear in Vol. 49 of *Champions of Freedom*. Hillsdale College Press.

https://aibrt.org/downloads/EPSTEIN_2020-The_Technological_Elite_Are_Now_in_Control.pdf

2021:

Epstein, R., Bock, S., Peirson, L., & Wang, H. (2021, June 14). *Large-scale monitoring of Big Tech political manipulations in the 2020 Presidential election and 2021 Senate runoffs, and why monitoring is essential for democracy* (15-min. video). Paper presented at the 24th annual meeting of the American Association of Behavioral and Social Sciences.

https://aibrt.org/downloads/EPSTEIN_et_al_2021-Large-Scale_Monitoring_of_Big_Tech_Political_Manipulations-FINAL_w_AUDIO.mp4

Epstein, R. (2021, January 28). When Big Tech flexes, everyone's freedom is threatened. *American Spectator*. <https://spectator.org/trump-twitter-google-big-tech/>

2020:

Epstein, R. (2020 November/December). Big Brother is in your house and in your voting booth. *Penthouse* (U.S. print edition), pp. 36-42.

https://aibrt.org/downloads/EPSTEIN_2020-Big_brother_is_in_your_house_and_in_your_voting_booth.pdf

Epstein, R. (2020, November). *The technological elite are now in control* (1-hr. video). Invited talk presented at a meeting of the Center for Creative Alternatives, Hillsdale College, Hillsdale, MI. <https://www.hillsdale.edu/event/cca-ii-big-tech/>

2019:

Epstein, R. (2019, July 30). Google's latest whistleblower is hard to ignore. *Daily Caller*.

<https://dailycaller.com/2019/07/30/epstein-google-whistleblower/>

Epstein, R. (2019, July 16). Why Google poses a serious threat to democracy, and how to end that threat. *Congressional Record of the United States*.

<https://www.judiciary.senate.gov/imo/media/doc/Epstein%20Testimony.pdf>

Epstein, R. (2019, July 16). *Why Google poses a serious threat to democracy, and how to end that threat* (oral testimony, 7-min. video). Testimony before the United States Senate Judiciary Subcommittee on the Constitution, Washington, D.C. <https://www.c-span.org/video/?c4807816/congressionalhearing-16july2019-testimonybydrrobertepstein>

Epstein, R. (2019d, July 15). To break Google's monopoly on search, make its index public. *Bloomberg Businessweek*.
<https://www.bloomberg.com/news/articles/2019-07-15/to-break-google-s-monopoly-on-search-make-its-index-public>

Epstein, R. (2019, April). *Evidence of systematic political bias in online search results in the 10 days leading up to the 2018 U.S. midterm elections*. Paper presented at the 99th annual meeting of the Western Psychological Association, Pasadena, CA. https://aibr.org/downloads/EPSTEIN_2019-WPA-Evidence_of-search_engine_bias_related_to_2018_midterm_elections.pdf

Epstein, R. (2019c, April 3). Zucked again: Zuckerberg's proposal for regulating the internet is self-serving. *Epoch Times*.
https://www.theepochtimes.com/opinion-zuckerbergs-proposal-for-regulating-the-internet-is-self-serving_2864920.html

Epstein, R. (2019b, March 22). Google, Facebook, Amazon: Warren's toothless break-up plan ignores real Big Tech threats. *USA Today*.
<https://www.usatoday.com/story/opinion/2019/03/22/elizabeth-warren-plan-misses-dangers-facebook-amazon-google-surveillance-column/3205451002/>

Epstein, R. (2019a, January 2). How Google shifts votes: A “go vote” reminder is not always what you think it is. *Epoch Times*.
https://www.theepochtimes.com/another-way-google-manipulates-votes-without-us-knowing-a-go-vote-reminder-is-not-what-you-think-it-is_2754073.html

2018:

Epstein, R. (2018i, September 26). Ten ways Big Tech can shift millions of votes in the November elections—without anyone knowing. *Epoch Times*.
https://www.theepochtimes.com/10-ways-big-tech-can-shift-millions-of-votes-in-the-november-elections-without-anyone-knowing_2671195.html

Epstein, R. (2018h, September 13). Not just conservatives: Google and Big Tech can shift millions of votes in any direction. *USA Today*.
<https://www.usatoday.com/story/opinion/2018/09/13/google-big-tech-bias-hurts-democracy-not-just-conservatives-column/1265020002/>

Epstein, R. (2018g, August 27). How major news organizations, universities and businesses surrender their privacy to Google. *The Daily Caller*.
<https://dailycaller.com/2018/08/27/surrender-privacy-google/>

Epstein, R. (2018f, June 25). Zuck off: Six reasons Mark Zuckerberg should quit Facebook now. *The Daily Caller*. <https://dailycaller.com/2018/06/25/mark-zuckerberg-should-quit-facebook/>

Epstein, R. (2018e, May 25). Transcript to Google's internal video, "The Selfish Ledger." https://aibrt.org/downloads/GOOGLE-Selfish_Ledger-TRANSCRIPT.pdf

Epstein, R. (2018d, May 17). Taming Big Tech: The case for monitoring. *Hacker Noon*. <https://hackernoon.com/taming-big-tech-5fef0df0f00d> (Archived version at <https://web.archive.org/web/20190323031918/https://hackernoon.com/taming-big-tech-5fef0df0f00d?gi=7d11d84801a2>)

Epstein, R. (2018c). Manipulating minds: The power of search engines to influence votes and opinions. In M. Moore & D. Tambini (Eds.), *Digital dominance: The power of Google, Amazon, Facebook, and Apple* (pp. 294-319). Oxford, UK: Oxford University Press.
https://aibrt.org/downloads/EPSTEIN_2018-Manipulating_minds-The-power_of_search_engines_to_influence_votes_and_opinions-UNCORRECTED_PROOFS.pdf

Epstein, R. (2018b). The unprecedented power of digital platforms to control opinions and votes. In G. Rolnik (Ed.), *Digital platforms and concentration: Second annual antitrust and competition conference* (pp. 31-33). Chicago, IL: University of Chicago Booth School of Business. <https://promarket.org/wp-content/uploads/2018/04/Digital-Platforms-and-Concentration.pdf>

Epstein, R. (2018a, March 22). Cambridge Analytica is not the problem: Google and Facebook are the problem. *The Daily Caller*.
<https://dailycaller.com/2018/03/22/google-and-facebook-are-problem-not-cambridge-analytica/>

Epstein, R., & Mohr, R., Jr. (2018, April). *The Answer Bot Effect (ABE): Another surprising way search engines can impact opinions*. Paper presented at the 98th annual meeting of the Western Psychological Association, Portland, OR.
https://aibrt.org/downloads/EPSTEIN_&_MOHR_2018-WPA-The_Answer_Bot_Effect-ABE-WP_17_04.pdf

Epstein, R., Mohr, R., Jr., & Martinez, J. (2018, April). *The Search Suggestion Effect (SSE): How search suggestions can be used to shift opinions and voting preferences dramatically*. Paper presented at the 98th annual meeting of the

Western Psychological Association, Portland, OR.

https://aibr.org/downloads/EPSTEIN_MOHR_&_MARTINEZ_2018-WPA-The_Search_Suggestion_Effect-SSE-WP-17-03.pdf

2017:

Epstein, R. (2017h, August 31). Google's fighting hate and trolls with a dangerously mindless AI. *Fast Company*.

<https://www.fastcompany.com/40459339/google-perspective-fighting-hate-and-trolls-with-a-mindless-a-i>

Epstein, R. (2017g, July 17). Hacking Google. *Huffington Post*.

<https://www.huffingtonpost.com/entry/596d0670e4b0376db8b659fd>

Epstein, R. (2017f, May 28). Is it still possible to stop 'Big Tech' from killing democracy? [Review of Jonathan Taplin's *Move Fast and Break Things*]. *The Hill*. <https://thehill.com/blogs/pundits-blog/technology/335507-is-it-still-possible-to-stop-big-tech-from-killing-democracy>

Epstein, R. (2017e, May 10). [The potential for Google and Facebook to manipulate millions of voters poses a bigger threat than fake news](#) [Letter to the editor]. *Los Angeles Times*.

Epstein, R. (2017d, April 10). Fake news is a fake problem. *Medium*.

https://medium.com/@re_53711/fake-news-is-a-fake-problem-914d7ffc7a91

Epstein, R. (2017c, March 16). Seven simple steps toward online privacy.

Medium. https://medium.com/@re_53711/seven-simple-steps-toward-online-privacy-20dcbb9fa82

Epstein, R. (2017b, April). *Can search suggestions impact what we search for online? The role of negativity bias*. Paper presented at the 97th annual meeting of the Western Psychological Association, Sacramento, CA.

https://aibr.org/downloads/EPSTEIN_2017-WPA-Can_Search_Suggestions_Impact_What_We_Search_for_Online.pdf

Epstein, R. (2017a, March). *The Search Suggestion Effect (SSE): How autocomplete can be used to impact votes and opinions*. Paper presented at the 2nd biennial meeting of the International Convention of Psychological Science,

Vienna, Austria. https://aibr.org/downloads/EPSTEIN_2017-The_Search_Suggestion_Effect-SSE-ICPS_Vienna-March_2017.pdf

Epstein, R., Ding, M., Mourani, C., Olson, E., Robertson, R.E., & Tran, F. (2017, April). *Multiple searches increase the impact of the Search Engine Manipulation Effect (SEME)*. Paper presented at the 97th annual meeting of the Western

Psychological Association, Sacramento, CA.

[https://aibr.org/downloads/EPSTEIN et al. 2017-WPA-Multiple Searches Increase the Impact of%20 the Search Engine Manipulation Effect.pdf](https://aibr.org/downloads/EPSTEIN%20et%20al.%202017-WPA-Multiple%20Searches%20Increase%20the%20Impact%20of%20the%20Search%20Engine%20Manipulation%20Effect.pdf)

Epstein, R., Mourani, C., Olson, E., & Robertson, R.E. (2017, April). *Biased search rankings can shift opinions on a wide range of topics*. Paper presented at the 97th annual meeting of the Western Psychological Association, Sacramento, CA. [https://aibr.org/downloads/EPSTEIN et al. 2017-WPA-Biased Search Rankings Can Shift Opinions on a Wide Range of Topics.pdf](https://aibr.org/downloads/EPSTEIN%20et%20al.%202017-WPA-Biased%20Search%20Rankings%20Can%20Shift%20Opinions%20on%20a%20Wide%20Range%20of%20Topics.pdf)

Epstein, R., & Robertson, R.E. (2017c, June 1). *A method for detecting bias in search rankings, with evidence of systematic bias related to the 2016 presidential election*. Vista, CA: American Institute for Behavioral Research and Technology, White Paper no. WP-17-02. Retrieved from [https://aibr.org/downloads/EPSTEIN & ROBERTSON 2017-A Method for Detecting Bias in Search Rankings-AIBRT WP-17-02 6-1-17.pdf](https://aibr.org/downloads/EPSTEIN%20&%20ROBERTSON%202017-A%20Method%20for%20Detecting%20Bias%20in%20Search%20Rankings-AIBRT%20WP-17-02%206-1-17.pdf)

Epstein, R., & Robertson, R.E. (2017b, March). *The Search Engine Manipulation Effect (SEME): Understanding its power to change opinions and votes*. Paper presented at the 2nd biennial meeting of the International Convention of Psychological Science, Vienna, Austria.
DC.

Epstein, R., & Robertson, R. (2017a). Suppressing the Search Engine Manipulation Effect (SEME). *Proceedings of the ACM: Human-Computer Interaction*, 1(2), Article 42. [https://aibr.org/downloads/EPSTEIN et al-2017-Suppressing the Search Engine Manipulation Effect \(SEME\).pdf](https://aibr.org/downloads/EPSTEIN%20et%20al-2017-Suppressing%20the%20Search%20Engine%20Manipulation%20Effect%20(SEME).pdf)

Epstein, R., Robertson, R., Shepherd, S., & Zhang, S. (2017, April). *A method for detecting bias in search rankings, with evidence of systematic bias related to the 2016 presidential election*. Paper presented at the 97th annual meeting of the Western Psychological Association, Sacramento, CA. [https://aibr.org/downloads/EPSTEIN et al 2017-SUMMARY-WPA-A Method for Detecting Bias in Search Rankings.pdf](https://aibr.org/downloads/EPSTEIN%20et%20al%202017-SUMMARY-WPA-A%20Method%20for%20Detecting%20Bias%20in%20Search%20Rankings.pdf)

2016:

Epstein, R. (2016, November 17). Fake news and Facebook: There are far more pernicious ways social media can sway elections [Letter to the Editor]. *Los Angeles Times*. <https://www.latimes.com/opinion/readersreact/la-ol-le-fake-news-facebook-20161117-story.html>

Epstein, R. (2016k). Subtle new forms of internet influence are putting democracy at risk worldwide. In N. Lee (Ed.), *Google it: Total information awareness* (pp. 253-259). Springer. https://aibr.org/downloads/EPSTEIN_2016-Suble_New_Forms_of_Internet_Influence-In_N.Lee_Ed.-Google_It-Springer.pdf

Epstein, R. (2016j, October 14). Breaking news: Google to donate its search engine to the American public. *Huffington Post*. <https://www.huffingtonpost.com/dr-robert-epstein/breaking-news-google-to-d b 12446856.html>

Epstein, R. (2016i, September 12). Are we being manipulated by Google's autocomplete? *Sputnik International*. <https://sputniknews.com/us/20160912/1045214398/google-clinton-manipulation-election.html>

Epstein, R. (2016h, September 6). Free isn't freedom: How Silicon Valley tricks us. *Motherboard*. <https://motherboard.vice.com/read/free-isnt-freedom-epstein-essay>

Epstein, R. (2016g, September). Cyber sway: The new mind control. *Ladybeard*. https://aibr.org/downloads/EPSTEIN_2016-Cyber_Sway-The_New_Mind_Control-LADYBEARD-9-16-16-FINAL_flat.pdf

Epstein, R. (2016f, July 12). Five subtle ways Facebook could influence the U.S. presidential election this fall. *Quartz*. <https://qz.com/703680/five-subtle-ways-facebook-could-influence-the-us-presidential-election-this-fall/>

Epstein, R. (2016e, July). Can search engine rankings swing elections? *New Internationalist*. <https://newint.org/features/2016/07/01/can-search-engine-rankings-swing-elections/>

Epstein, R. (2016d, June 22). The new censorship. *U.S. News & World Report*. <https://www.usnews.com/opinion/articles/2016-06-22/google-is-the-worlds-biggest-censor-and-its-power-must-be-regulated>

Epstein, R. (2016c, May 4). Bigger brother: Microsoft and Google's new pact could signal the beginning of the end for personal privacy. *Quartz*. <https://qz.com/676184/microsoft-and-googles-pact-is-the-end-of-personal-privacy/>

Epstein, R. (2016b, April 27). Google knows: In the future, Big Data will make actual voting obsolete. *Quartz*. <https://qz.com/669983/maybe-we-should-let-google-vote-for-us/>

Epstein, R. (2016a, February 18). The new mind control. *Aeon*.
<https://aeon.co/essays/how-the-internet-flips-elections-and-alters-our-thoughts>
[Russian translation here:
http://mnenia.zahav.ru/Articles/7302/soznanie_pod_controllem]

Epstein, R., & Edelman, B. (2016, November 5). The other elephant in the voting booth: Big Tech could rig the election. *The Daily Caller*.
<https://dailycaller.com/2016/11/04/the-other-elephant-in-the-voting-booth-big-tech-could-rig-the-election/>

Epstein, R., & Robertson, R.E. (2016b, April). *Why is the search engine manipulation effect (SEME) so large? A test of an operant conditioning hypothesis*. Paper presented at the 96th annual meeting of the Western Psychological Association, Long Beach, CA.
https://aibr.org/downloads/EPSTEIN_&_ROBERTSON_2016-SEME_Testing_an_operant_conditioning_hypothesis-WPA.pdf

Epstein, R., & Robertson, R.E. (2016a, April). *A replication of the search engine manipulation effect (SEME), plus methods for suppressing the effect*. Paper presented at the 96th annual meeting of the Western Psychological Association, Long Beach, CA. [https://aibr.org/downloads/EPSTEIN_et_al-2017-Suppressing_the_Search_Engine_Manipulation_Effect_\(SEME\).pdf](https://aibr.org/downloads/EPSTEIN_et_al-2017-Suppressing_the_Search_Engine_Manipulation_Effect_(SEME).pdf)

2015:

Epstein, R. (2015d). Wie Google Wahlen beeinflussen kann [How Google influences opinions]. In T. Fricke & U. Novak (Eds.), *Die Akte Google: Wie der U.S.-Konzern Daten missbraucht, die Welt manipuliert und Jobs vernichtet, Mit Beiträgen von Prof. Dr. Robert Epstein und Dr. Thomas Höppner* (pp. 165-173). München, Deutschland: F.A. Herbig Verlagsbuchhandlung GmbH.

Epstein, R. (2015c, October 6). Google's hypocrisy. *Huffington Post*. Retrieved from https://www.huffingtonpost.com/dr-robert-epstein/googles-hypocrisy_b_8253332.html

Epstein, R. (2015b, September 6). Google's vote counts more than yours. *Pittsburgh Post-Gazette*. <https://www.post-gazette.com/opinion/Op-Ed/2015/09/06/Google-s-vote-counts-more-than-yours-because-its-search-engine-is-determining-the-outcomes-of-elections/stories/201509060042>

Epstein, R. (2015a, August 19). How Google could rig the 2016 election. *Politico*. <https://www.politico.com/magazine/story/2015/08/how-google-could-rig-the-2016-election-121548.html>

Epstein, R., & Robertson, R.E. (2015b, April). *The Search Engine Manipulation Effect (SEME): Large-scale replications in two countries*. Paper presented at the 95th annual meeting of the Western Psychological Association, Las Vegas, Nevada.

Epstein, R., & Robertson, R. E. (2015a, August 4). The search engine manipulation effect (SEME) and its possible impact on the outcomes of elections. *Proceedings of the National Academy of Sciences USA*, 112(33), E4512-E4521. <https://www.pnas.org/content/112/33/E4512.full.pdf?with-ds=yes>

2014:

Epstein, R. (2014d). Democracy at risk from new forms of internet influence. *EMMA Magazine*. https://aibrt.org/downloads/EPSTEIN_2014-New_Forms_of_Internet_Influence-EMMA_Magazine.pdf

Epstein, R. (2014c, June). How Google could end democracy. *U.S. News & World Report*. https://www.usnews.com/opinion/articles/2014/06/09/how-googles-search-rankings-could-manipulate-elections-and-end-democracy?src=usn_tw

Epstein, R. (2014b, May). Google critic killed in “ironic” car accident: Struck by Google Street View vehicle. *Huffington Post*. https://www.huffingtonpost.com/dr-robert-epstein/google-critic-killed-in-i_b_5351458.html

Epstein, R. (2014a, May). Google's snoops: Mining our private data for profit and pleasure. *Dissent*. https://www.dissentmagazine.org/online_articles/googles-snoops-mining-our-data-for-profit-and-pleasure

Epstein, R., & Robertson, R.E. (2014, April). *Helping people preserve their privacy online: The surprising power of a click requirement*. Paper presented at the 94th annual meeting of the Western Psychological Association, Portland, Oregon. https://aibrt.org/downloads/EPSTEIN&ROBERTSON_2014-Helping_People_Be_More_Cautious_Online-ABSTRACT-WPA-April_2014.pdf

2013:

Epstein, R. (2013b, May). Google's gotcha. *U.S. News & World Report*. <https://www.usnews.com/opinion/articles/2013/05/10/15-ways-google-monitors-you>

Epstein, R. (2013a, March). Google's dance. *TIME*. <https://techland.time.com/2013/03/27/googles-dance/>

Epstein, R., & Robertson, R. E. (2013, May). *Democracy at risk: Search rankings can shift voter preferences substantially*. Paper presented at the 25th annual

meeting of the Association for Psychological Science, Washington, D.C., May 2013.

2012:

Epstein, R. (2012e, November 5). Why Google should be regulated (Part 4 - End). *Huffington Post*. https://www.huffpost.com/entry/why-google-should-be-regu_b_2069223

Epstein, R. (2012d, November 2). Why Google should be regulated (Part 3). *Huffington Post*. https://www.huffpost.com/entry/why-google-should-be-regu_b_2054111 6-29-19 update: Link to Part 4 at the end of the article is broken. Use: https://www.huffpost.com/entry/why-google-should-be-regu_b_2069223

Epstein, R. (2012c, October 31). Why Google should be regulated (Part 2). *Huffington Post*. https://www.huffpost.com/entry/online-privacy_b_2013583 6-29-19 update: Link to Part 3 at the end of the article is broken. Use: https://www.huffpost.com/entry/why-google-should-be-regu_b_2054111

Epstein, R. (2012b, October 23). Why Google should be regulated (Part 1). *Huffington Post*. https://www.huffpost.com/entry/google-privacy_b_1962827 6-29-19 update: Link to Part 2 at the end of the article is broken. Use: https://www.huffpost.com/entry/online-privacy_b_2013583 (Note: An edited version of the entire article first appeared in *The Kernel* [UK] on September 5, 2012. See below.)

Epstein, R. (2012a, September 12). Google: The case for hawkish regulation. *The Kernel*. <https://web.archive.org/web/20121016112820/https://www.kernelmag.com/features/report/3281/google-the-case-for-hawkish-regulation> (Expanded version appeared in four parts in *The Huffington Post* beginning on October 23, 2012. See above.)

APPENDIX I: Links of Possible Interest

<https://MyGoogleResearch.com> – a webpage where you can learn more about Dr. Epstein's research on online influence and where you can also support that research with donations to the American Institute for Behavioral Research and Technology, a nonprofit, nonpartisan 501(c)(3) public charity.

<https://TameBigTech.com> – a signup page where you can subscribe to a free newsletter that will keep you informed about advances in Dr. Epstein's research.

<https://MyPrivacyTips.com> – an essay by Dr. Epstein about how you can protect yourself and your children from surveillance by Google-and-the-Gang.

<https://TamingBigTech.com> – an essay by Dr. Epstein about the development of his first election monitoring system, deployed before the 2016 Presidential election.

<https://TheCreepyLine.co> (not .com) – an 80-minute documentary film featuring Dr. Epstein's research. It warns about surveillance, censorship, and manipulation by Google-and-the-Gang. It also features Dr. Jordan Peterson and other experts.

<https://TheCaseForMonitoring.com> – a 15-minute video in which Dr. Epstein summarizes findings from his online monitoring in the days leading up to the 2020 Presidential Election and the 2021 Senate runoff elections in Georgia.

<https://DrRobertEpstein.com> – Dr. Epstein's personal website.

<https://AIBRT.org> – website of the American Institute for Behavioral Research and Technology.

<https://twitter.com/DrREpstein> - Dr. Epstein's twitter feed.

APPENDIX II: 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.

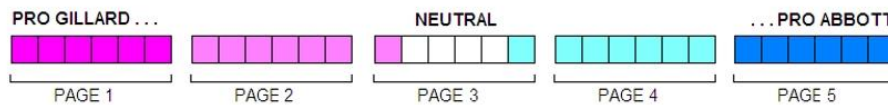
In the basic procedure, participants are randomly assigned to one of three groups: a group in which search results favor Candidate A – which means that high-ranking results link to web pages that make Candidate A look better than his or her opponent – a group favoring Candidate B, and a group in which 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.”

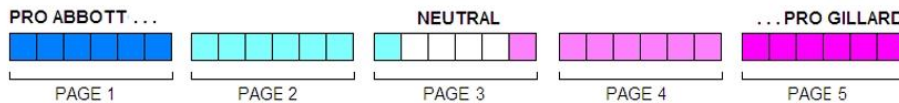
Then, typically, they are given up to fifteen minutes in which to use the Kadoodle search engine to conduct further research about the candidates. They are typically given access to five pages of search results, with six results per page (30 in total), and they can navigate through the search results 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.”

Group 1: Rankings favoring Gillard



Group 2: Rankings favoring Abbott



Group 3: Rankings favoring neither candidate



Figure 8. In a typical SEME experiment, in one group, search results are ordered in a way that favors Candidate A (Gillard, above). In a second group, the ordering is reversed, so it favors Candidate B (Abbott, above). And in a control group, the ordering alternates, so neither candidate is favored.

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.

APPENDIX III

Article from *Bloomberg Businessweek*, July 15, 2019

<https://www.bloomberg.com/news/articles/2019-07-15/to-break-google-s-monopoly-on-search-make-its-index-public>

Entered into The Congressional Record, July 16, 2019

Bloomberg Businessweek

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

July 15, 2019, 3:00 AM PDT



PHOTO ILLUSTRATION: 731; PHOTO: GETTY IMAGES

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

3

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

7

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,

8

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.

Epstein ([@DrREpstein](#)), a former editor-in-chief of Psychology Today, is senior research psychologist at the [American Institute for Behavioral Research and Technology](#). He has published 15 books and more than 300 articles on AI and other topics.