

PROVOCATION

## **The Power of Big Data to Control the Outcome of Elections**

Robert Epstein

American Institute for Behavioral Research and Technology

In recent years, researchers in the US have found that online tech companies can exert enormous impact over the outcomes of elections without people knowing this is occurring and without leaving a paper trail. Randomised, controlled experiments conducted with more than 10,000 people from 39 countries suggest that one company alone—Google, Inc., which controls about 90 percent of online search in most countries—has already been determining the outcomes of upwards of 25 percent of the national elections in the world for several years now, with increasing impact each year as Internet penetration has grown.

In a study published in the *Proceedings of the National Academy of Sciences USA* (PNAS) in 2015 (<http://bit.ly/1REqzEY>), researchers reported the discovery of what they called the Search Engine Manipulation Effect (or SEME), which is one of the largest behavioural effects ever discovered. The study showed that when undecided voters conduct online searches in which one candidate is favored in search rankings—that is, when high-ranking search results link to web pages that make that candidate look better than his or her opponent—the preferences of those voters shift dramatically toward the favored candidate—by up to 80 percent in some demographic groups.

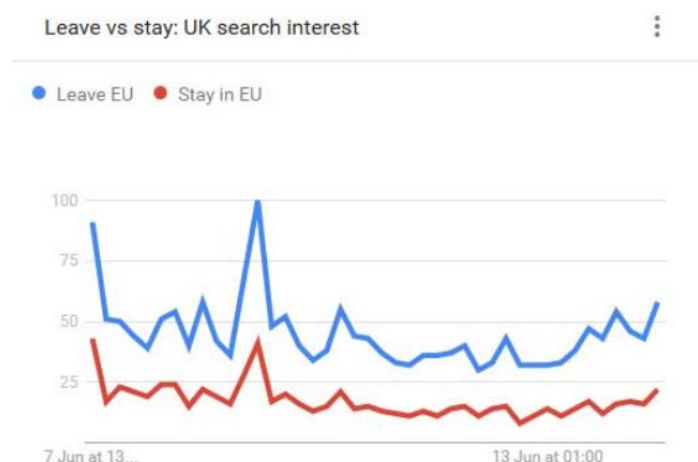
This shift occurs because of the enormous level of trust people have in Google's search results, which people believe are entirely impartial, unlike what they see on television or read in newspapers. Research suggests that this belief is reinforced by a daily regimen of conditioning in which routine searches for simple facts invariably generate the correct result in the highest-ranking search position. The strong trust in high-ranking search results impacts what happens when people conduct a search on a complex issue on which they are trying to formulate an opinion or make a decision: where to holiday, what kind of car to purchase, or even whom to vote for. When conducting an online search for information about such matters, people put inordinate trust in material that is ranked high in search results; indeed, 50 percent of all clicks go to the top two search results.

The impact of high-ranking search results is confirmed by a wide range of studies of consumer behaviour, and the value of being ranked higher in search results is the basis for the massive "SEO" (Search Engine Optimisation) industry that has emerged over the last decade; companies now spend vast sums each year trying to push their products and services a notch or two higher in rankings, because potential customers are so likely to trust, believe in, and click on higher search results.

The power of search rankings to shift votes has now been demonstrated in the context of three national elections: the 2010 election for prime minister of Australia, the 2014 Lok Sabha election in India, and the 2015 election for prime minister of the UK. One very disturbing finding of such research is that people

show little or no awareness that they are viewing biased search rankings—even when those rankings are outrageously biased. In the Lok Sabha experiment, conducted with more than 2,000 undecided voters throughout India during the voting process, 99.5 percent of the participants in the study showed no awareness that they were seeing biased rankings. SEME’s virtually invisibility makes it an especially disturbing and dangerous form of manipulation. Because search rankings are ephemeral and, more and more, customized to the tastes of the individual, they also leave no paper trail, making them nearly impossible for authorities to monitor.

So much for the *power* of biased search results; is there any evidence that Google’s search rankings are *actually* biased toward one candidate or another? Because actual search rankings are so difficult to monitor, without a whistleblower or warrant, we cannot know for sure, but there are a number of indications that Google’s search results do routinely favor one candidate over another. Google certainly favors candidates, as many companies do; the company and its top officials donated more than \$800,000 to President Obama in 2012 and only \$37,000 to his opponent, for example. And a 2015 analysis published by Slate.com found that Google’s search results routinely favor Democrats over Republicans. Public statements by Google officials also confirm that its algorithm contains no “equal time” rule for political candidates, which means that so-called “organic” search phenomena will almost certainly favor one candidate over another in virtually every election, just as Google’s own “trend” numbers routinely show greater search interest in one position over another. For example, in the days just before the Brexit vote in the UK, even though polls suggested that the two positions were in a dead heat, Google Trends showed far greater user interest in leaving than in remaining:



If this same pattern were reflected in the search results produced by Brexit-related searches—that is, if search results were biased toward pro-Brexit web pages—SEME could easily have shifted between 239,000 and 956,000 votes toward the “leave” position, sufficient to create a win margin of between 1.6 and 6.6 percent, the mean of these numbers being 4.1 percent. The actual win margin for the “leave” position turned out to be just under that value: 3.8 percent.

Did organic search processes end up favoring the “leave” position, thus rapidly shifting the voting preferences of undecided voters in the final days and hours before the referendum? Or did Google

officials, seeking to destabilize the EU, which now has three antitrust actions in progress against the company, deliberately alter search rankings to further the company's business goals?

Because of the secret manner in which Google conducts its affairs, there is no way at the moment to determine exactly what happened, but there is also no longer any doubt about the *power* that Google has to influence elections. As citizens, we need to decide whether it is appropriate for any private company to have such power.