

Matter of Facts
Season 2 Episode 8
Dr. Halavais – Google/Search Engines
February 19, 2020

[INTRODUCTION - BYRNE] Facebook Twitter 24/7 News Talk Radio citizen journalism fake News Real News audiences are drowning in an overwhelming overload of information. Clearly a guidepost is needed to identify what is trustworthy and a reliable source of both news and information. Season 2 of the Delaware Humanities podcast “A Matter of Facts” delves into the topic, this year examining more closely popular sources of news and information. The “A Matter of Facts” podcast is brought to you by Delaware Humanities, a state affiliate of the National Endowment for the Humanities. Its mission is to engage, educate, and inspire all Delawareans through cultural programming.

We thank the Andrew W. Mellon Foundation for its generous support of this initiative and the Pulitzer prizes for its partnership. “A Matter of Facts” is produced by Delaware Public Media, Delaware’s source for NPR news.

[BYRNE] Thanks for joining us on the “A Matter of Facts” podcast. I’m your host Tom Byrne. Our second season of this podcast delves more deeply into a variety of popular sources of news and information, and on this episode, we turn to a source, or more precisely a tool, that is truly ubiquitous. Google, the search engine is a place so many of us go to begin our quest for information. In 2019 Google was the most visited website in the US with nearly 259 million unique visitors and among search engines, Google has a 62.5% market share in the US and an almost 88% share worldwide. And of course Google is much more than just a search engine now, with other pieces such as YouTube, Google Maps and Gmail. So what is Google’s role as an information source, or a tool to find information, and more specifically, how does it shape the information we see on a day-to-day basis. To help us answer those questions, we are joined on the podcast by Dr. Alexander Halavais, Associate Professor at the University of Arizona School of Social and Behavioral Sciences, and author of *Search Engine Society* Volume 1 in 2008 and Volume 2 in 2017. Dr. Halavais thanks so much for joining us on the “A Matter of Facts” podcast.

[HALAVAIS] My pleasure.

[BYRNE] So let’s start with I guess kind of more of a global kind of question. That is how difficult is it at this point to kind of quantify Google’s role and influence on the news and information that people get?

[HALAVAIS] Pretty difficult actually, I mean part of the issue is that it is invisible infrastructure in a way that we really don’t think about it and so it’s hard to quantify exactly. We know that in terms of the market and the search engine market they are extraordinary dominant, but it’s often difficult to think about just how influential they are across different media systems.

[BYRNE] I guess that even in the period in between the first volume of your book *Search Engine Society* in 2008 in the second volume in 2017, I imagine there was a pretty big shift even in that relatively small time frame and in what Google was and what kind of influence of wielded.

[HALVAIS] Yeah, in fact, it's always dangerous to write in this area and technology because by the time it went to press one of the major pieces had already changed, it had already thrown away its pledge to never do personalized search and a lot of other little things had changed even between the time when I submitted the manuscript for the first edition then and when it hit the press, so certainly over the decade things changed. Now in terms of the domination of that particular company, I don't know if that had changed. I think it had sort of become more Kudzu like and become a little bit less visible in some ways. I think that people don't go, they still go to the search engine to the big white screen and look for things, but I don't think that happens quite as much, I think a lot of more is happening under the under the table or behind covers, so yeah.

[BYRNE] Can you give us a little perspective if you can want one just how much, or how different people's ability to seek and find information is, just the average person, because they have search engines like Google. I mean, I guess that's what you're saying is it in some ways we probably don't even notice how big an influence it is on our ability to seek and find news and information.

[HALVAIS] Right. I mean I guess there's a parallel here between how you search and how we use our cell phones. I know I still know the phone number of my grandparents' house when I was six or seven years old. That's one of about three phone numbers I now know. When I was in college I knew by heart, you know, the number for the pizza place and a whole bunch of other numbers, but as the phone is taking over that role where we don't need to know those phone numbers by heart anymore, we kind of have lost that ability to memorize them or don't need it anymore. I think that's happening an awful lot. I mean, I think it may just be me getting older and losing my memory, but I think we have moved to this point where there are things that we don't really need to know at the tip of our fingers, we could always look things up, right could always go to library if we've forgotten a particular fact, this is the question of memorizing dates in history or something like that. We can always look that up before, but now we have it in our hands, you know over dinner not having to remember the name of a movie, who is acting in a particular film, because we can look it up right away. And so I think that we've come to rely on that. You know there is this interesting question, this has come up in lots of technology and what happens when that disappears and it's kind of an arbitrary question, but it becomes real, and you know there's a fight right now in Australia and shaping up in Canada about whether they're going to allow Google to continue to operate there or whether Google will pull out of those countries. It's an interesting thought experiment, you know if what would you do if you lost Google, like how would that change your day-to-day behavior. I think

not as much as it might have even five or six years ago but still we've come to rely on it as sort of an out-sourced brain for us.

[BYRNE] I guess that has kind of implications when we're talking about things like news, when you're just talking with somebody and you're debating a point or something like that that you can quickly look something up to backup your point or refute somebody's point, that it does make it almost instantaneous your ability to kind of build an information-base that maybe you wouldn't have even been able to do when you had to go, back when you and I were younger, have go to library and find that information first.

[HALAVAI] Right, and I do wonder how that affects this this ability to agree to disagree, right, at some point you do have a fact check right there in your pocket. The question is whether you actually get the facts when you do that. I'm like everybody on social media and I do surprisingly still see things like, "where did you find that piece of information?" "Well, it was, it's from Google". This idea of Google as a source rather than as a tool to find a source, it still sticks around, especially I think about the older generation where they see the search engine as the source and so that's problematic on one hand. But yes, you're right, you now have that access to information at your fingertips and can kind of pull that up rather than having to go find it.

[BYRNE] Well you mentioned the idea that it's not a source, it's a tool, and Google and other search engines out there, there is more than just Google. Can you tell us how Google is like some of the other search engines that are out there and what kind of separates it from the crowd? Is there a reason for that incredible market share that we talked about earlier?

[HALAVAI] In one sense, it is a natural monopoly and that's part of the invisible piece of Google. So, you know, they've been pulled up before the US Congress and asked about that Monopoly status and they say that anyone could come forward like we did and in their garage right now someone is building the Google killer. I don't think that's quite true, at this point it takes an enormous amount actual electricity to crawl the internet, a large portion of the traffic on the internet is Google's bots going out and finding new information. That operation is tremendous in its scale. Back two decades ago when people talk about the NSA they talked about their computing power in terms of acreage and I think you can, rather than machines in terms of acres of computing power. I think you're there with Google as well, that their data centers are just tremendous, and that literal physical infrastructure is often invisible because you know, it's not in Silicon Valley, it's out in the middle of nowhere, you know including in places like Arizona, so that piece is really difficult to kind of make up. So I think part of that dominance is that, there's really only a handful of companies Microsoft, Google, Amazon, and some second and third runners that have that kind of physical infrastructure to do that. Its initial success came from finding a way to get rid of corn in the search results. There were a number of search engines attempting to come up with the best way to come up with the answer you were

trying to get, and the companies that were selling corn online, one of the first really successful ventures online that actually made money, were really trying to force the hand of the search engine to make them appear more quickly and as a result of completely unrelated searches. And so Google found a way, the founders of Google, found a way of looking at basically citation structures and surfacing some of the more useful or relevant search results. So I think that gave them their initial competitive advantage and that kind of led to this dominance, but at this stage I really don't think it's the technology so much, although they do also have intellectual capital, they hire an enormous number of PhDs and researchers, but I think it is largely that physical infrastructure, that kind of heavy machinery, that allows them to maintain that position.

[BYRNE] You've talked a lot about this kind of invisible piece of Google and I suppose one of the things at work here is something that we discussed in previous episodes of this podcast, that's the role of algorithms. What can you tell us about Google's use of algorithms and the impact they have on what we see now when we searched on Google?

[HALAVASIS] Sure, so I mean that first to say competitive advantage was a particular algorithm call PageRank, which they patented and gave them that advantage. But Google finds what it thinks is most relevant using a large number of signals and if talk to people who are trying to reverse Google's algorithms, either folks involved in search engine optimization, they will tell you they know the number and none of them know the number, this is kind of like the seven secret ingredient or Coke's recipe right, this is what Google banks on, the secret way of figuring out what out there should surface and what should be buried. And so they have that ability of kind of changing the agenda on very small microtopics, using this system, this algorithm that chooses what is relevant and what is irrelevant and like other systems that use algorithmic processes often they will revert to this naturalistic argument, which is it's there's no influence from Google, it's just finding the most relevant material, but that's not the case. Anytime we're choosing what is and what is not relevant, whether it's us or machine, that is not a neutral process, that is not a balanced process, that is a deliberately unbalanced process. That is what we go to Google for, bias. That is what we go to newspapers for. We don't want all the news, we only want the news that's fit to print. And so we rely on Google to do that and Google relies on the secrecy of that process to make it work and not to have it be reverse engineered by those [*inaudible*].

[BYRNE] I'm curious, what's Google reach in other areas, things like you know Maps, Gmail, YouTube, Chrome as web browser, what impact they have on how people obtain information, what they see, and in kind of shaping what they see beyond the algorithms and things like that?

[HALAVASIS] Siva Vaidhyanathan has a book called *The Googlization of Everything* and Google, you know, from fairly early on said that their mission was not search. It was kind of changing information into knowledge, which sounds very high [laughs], that's my goal

as well, so I'm glad we share that. So they've moved into a large number of these areas, I think it's worth noting that for all that high-minded, Google is chiefly an advertising company, this is how they make money, is they attract people to their services and then they sell advertisers that attention. That's how they make their money, is converting attention into sales to advertisers. And so yes, they have moved into a lot of these spaces. Although like I said, I think if we imagined Google the search engine disappearing it probably would not have that large effect, if we thought a little bit about the kind of ways it has moved into a large number of areas, I think of the disappearance of all of Google services at once would be probably a fairly enormous hit on the internet as a whole, and I do think you've seen some encouragement to this by companies like Facebook, but Google has kind of moved into quite a bit more than I think we imagined, and certainly the brand products. I'm surprised by the number of people who don't make the connection of Google to YouTube, despite a fairly obvious connection there, but the front-facing Google properties like YouTube and like Gmail and for example Docs and Drive, I think people kind of make that connection, but a lot of the stuff, I mean most of the maps you see online still are powered by Google. Google has digitized and owned a huge number of books as part of their Google Book project. Just the amount of data that they hold and the amount of data that they transfer on a given day is largely again I keep coming back to this not intentional necessarily but it is not something that we necessarily look at and see it happens as business to business kinds of transactions or it happens as part of the advertising that you see on a newspaper site for example is often powered by Google Ads, and so those kinds of things that happen beyond what we see as branded Google stuff, which is already quite a bit on the internet.

[BYRNE] One thing that people have looked at a lot as they've researched Google and its search results is the implications on inequality and racism. What has your research found in this area of looking at Google and its effect?

[HALAVASIS] Yeah, and so this especially gets back to this question of algorithms and equity, that a computer can't be racist is kind of this go to, knee jerk reaction. And of course a computer can be racist when it's programmed by humans. Largely what Google does is reinscribe some of the inequities that already exist. So if you are looking at things like what websites are authoritative and what you're using as your measure of that is what other websites think are authoritative, you end up with kind of a vote that looks very much how people in the population might consider determining authority. So that's kind at the first step of reinscribed, writ large, many of the inequities that already exist in society. This is the example of Microsoft's Twitterbot that started spouting racist rhetoric and people said, you know "what were those programmers thinking", and it really had less to do with the programmers than the fact that they were on Twitter, and that anybody that is on Twitter for very long will learn from that and so and then learn in not particularly nice ways. In some ways I think Google is a mirror and therefore when we see racist search results what we're seeing is a mirror of a racist society. But there are specific cases in which it seems to not just reinscribe but deepen those kinds of reactions and so

particularly when it can become manipulated, that's one example, where, for example, search results for Martin Luther King, were, for a time, the first search result was a page that was produced by a group of white nationalists that slandered Dr. King. And so that, where it's been manipulated, where inequality can be pushed forward and then reproduced by the search engine. But there are other examples as well, a colleague was recently that they were working on a working in searching for something about Asia and the keyword Asian had kind of fallen into a forbidden keyword in their school searches. This was at a K through 12 level. The reason is that "Asian girls" is usually used to look for pornography rather than looking for girls in Asia, which is just kind of this writ large problem with the way people think about race and objectification, but then it kind of gets repercussions which is the word "Asian" as a bad word or forbidden word is a significant problem. And so when it does reinscribe those it that can really retrench them in an extreme way.

[BYRNE] Given that and the reach that Google has, what do you see as its responsibility for policing these issues and things like the spread of misinformation or disinformation, fake news, those type of things?

[HALAVASIS] Yeah, I mean that's, you know, if their business is creating bias, I think they have a primary responsibility to make sure that that creation of bias, of selection, of determination of what's important and what is not, is socially responsible. And so it is not, I am not a technologist in that I don't build search engines, but I know enough about them to know that it is a challenge, this is an epistemics challenge as well, determining kind of, this is what journalists are dealing with, have always dealt with, and are still dealing with now, this question of balance vs. neutrality vs. objectivity vs. just finding the facts, right, and so this is a question that frankly a lot of folks who are trained in computer science often don't get a very good grounding in, they may have, most of them do have, half a course or a course in ethics, but this larger question of how do you determine how much you should manipulate those results? You know aside from the "Oh that's a bad result, you should kind of get rid of that" or should we open this up to voting by others, that question of how you do that is a much more difficult one to tackle. The question of whether they should do that is an easy one, which is yes. They have a responsibility to make sure that the mirror that they holdup does not reflect the most pernicious parts of our society and to the detriment of the society as a whole.

[BYRNE] Let's flip the script then having talked about Google's responsibility in these kind of discussions. How about users, are there ways for people to be more thoughtful informed users of search engines like Google and use it to be a better consumer of information?

[HALAVASIS] Yeah, I mean in the same way that you would again, I keep coming back to this, being an informed reader of news or viewer or listener of news, I think that you can be an informed searcher of the web or searcher of Internet as a whole. Part of that is

some basic literacy to be sure that understanding a little bit about how Google works and how it determines where information is coming from, part of it is making sure that you don't have a singular diet of a single search engine from where you getting information. And so there are some options out there including those that kind of pose themselves as direct options, something like Duck Duck Go. The truth is that, you know, in terms of actual search results Google still has the largest engine so you do often surface things there that you wouldn't otherwise, but they can be very deep in the search results. So, you know, there's no reason not to go to Bing or Duck Duck Go or even something like Baidu, even though we know that there are censorship issues there since Baidu is the largest search engine in China and one of the largest in the world, you know, there are certain issues with censorship there that are directly government-related and also culturally related but kind of broadening your diet is another way to make sure you're getting a little bit of a push there, but some of this is simply not relying too heavily on Google's ability to filter these things. I think that when you when you go to a website and you are relying on that website to do the heavy lifting of determining what's important and what's not, that's problematic. And so you need to be willing to see Google as something that is able to dig and uncover materials, but then you have to be willing to engage in those materials critically as well.

[BYRNE] And so looking ahead a little bit, I know you talked a little bit earlier about what would happen if Google disappeared and there are some places that are looking at you Google's role, what are your thoughts on where Google is headed? What might it look like in 3, 5, even 10 years out for people using it?

[HALAVASIS] I do think it is, you know, as we said a little last decade, it's kind of faded into the background and I think it's as important as it always has been, but is continuing to do that. I think that, you know, people don't think about searching the way that they might have when search engines were new, it's used to no longer their first stop for looking for things. As I said that if Google disappeared, where would I go? It turns out that strangely, although I've never I think searched on Facebook that the number of searches performed on Facebook has increased to the point where it's beginning to rival Google, you know, people find information when they want more current information when they want something immediately, they'll turn to something like Twitter. So in some ways people are looking at different, if I'm looking for, strangely if I'm looking for facts, I might go Wikipedia first, as Google does many cases. People are finding other places to find things, but also a lot of what Google does is looking at search kind of outside of that search box. So I will continue to search, but I think the Google will take up a role that is much more supportive in that process. Over the next ten years, I think that were moving away from what's the best website for the answer to a question to what's the best answer to a question. And so what I just said a minute ago, will become less and less relevant as were asking Google or Alexa or our phone to answer question for us, in other words we don't want you to take us to a source, we want you to give us the answer. And so I think that we've seen much quicker than I had expected and I'm usually, you know, I usually overestimate the ability of

technology to perform, but I think more quicker than I had expected we are seeing advances in the ways in which computers can begin to formulate answers that are much more human-like. And so I suspect that Google will be, this is one of the ways in which we will, organize itself as a way of kind of sucking up all this information. The search engine for the web was initially intended to be able to get this large corpus of material, you know the knowledge of the web as a whole and to try to make sense of it in a way that is more like a human, that is more like an intelligence, and I suspect Google along with other players would be fighting to be first in that realm and be fighting to create answers that are not search results, but rather results results, and that brings with it a lot of the concerns that we've already had, but to a much higher degree, I think.

[BYRNE] And finally we like to end this podcast by asking each of our guests, where do you get your information on a daily basis, what are your favorite sources for news and information?

[HALAVAI] It's funny because I think I've gone backwards a bit, I am I am a newspaper reader and I wonder if that has shifted for a lot of people over this time, but on a daily basis, I will pick up a paper and for a while honestly that was through Google News, looking for that filter, 'cause it was catching more things, and these days, I don't kind of want to endorse, but I go to some of the major national papers, I generally do New York Times, Washington Post, and Wall Street Journal, so I am looking to those newspapers to a degree that I haven't for awhile to kind of help me with thinking about an agenda. So I am moving away from Google, despite it being something that I think about quite a bit.

[BYRNE] Fascinating. Thank you so much for the conversation. Dr. Alexandra Halavais, Associate Professor at the University of Arizona School of Social and Behavioral Sciences and author of *Search Engine Society* Volumes 1 and 2. We really do appreciate your time and for you joining us here only a matter fact podcast.

[HALAVAI] It's been fun, thank you for having me.

[OUTRO - BYRNE] Thanks for listening to this episode of the "A Matter of Facts" podcast. The "A Matter of Facts" podcast is brought to you by Delaware Humanities, a state affiliate of the National Endowment for the Humanities. Its mission is to engage, educate, and inspire all Delawareans through cultural programming. We thank the Andrew W. Mellon Foundation for its generous support of this initiative and the Pulitzer prizes for its partnership. A Matter of Facts is produced by Delaware Public Media, Delaware's source for NPR news.