1

A Society, Searching

On October 21, 2013, the United Nations launched a campaign directed by the advertising agency Memac Ogilvy & Mather Dubai using "genuine Google searches" to bring attention to the sexist and discriminatory ways in which women are regarded and denied human rights. Christopher Hunt, art director of the campaign, said, "When we came across these searches, we were shocked by how negative they were and decided we had to do something with them." Kareem Shuhaibar, a copywriter for the campaign, described on the United Nations website what the campaign was determined to show: "The ads are shocking because they show just how far we still have to go to achieve gender equality. They are a wake up call, and we hope that the message will travel far."[1] Over the mouths of various women of color were the autosuggestions that reflected the most popular searches that take place on Google Search. The Google Search autosuggestions featured a range of sexist ideas such as the following:

- Women cannot: drive, be bishops, be trusted, speak in church
- Women should not: have rights, vote, work, box
- Women should: stay at home, be slaves, be in the kitchen, not speak in church
- Women need to: be put in their places, know their place, be controlled, be disciplined

While the campaign employed Google Search results to make a larger point about the status of public opinion toward women, it also served, perhaps unwittingly, to underscore the incredibly powerful nature of search engine results. The campaign suggests that search is a mirror of users' beliefs and that society still holds a variety of sexist ideas about women. What I find troubling is that the campaign also reinforces the idea that it is not the search engine that is the problem but, rather, the users of search engines who are. It suggests that what is most popular is simply what rises

Figure 1.1. Memac Ogilvy & Mather Dubai advertising campaign for the United Nations.

to the top of the search pile. While serving as an important and disturbing critique of sexist attitudes, the campaign fails to implicate the algorithms or search engines that drive certain results to the top. This chapter moves the lens onto the search architecture itself in order to shed light on the many factors that keep sexist and racist ideas on the first page.

One limitation of looking at the implications of search is that it is constantly evolving and shifting over time. This chapter captures aspects of commercial search at a particular moment—from 2009 to 2015—but surely by the time readers engage with it, it will be a historical rather than contemporary study. Nevertheless, the goal of such an exploration of why we get troublesome search results is to help us think about whether it truly makes sense to outsource all of our knowledge needs to commercial search engines, particularly at a time when the public is increasingly reliant on search engines in lieu of libraries, librarians, teachers, researchers, and other knowledge keepers and resources.

What is even more crucial is an exploration of how people living as minority groups under the influence of a majority culture, such as people of color and sexual minorities in the United States, are often subject to the whims of the majority and other commercial influences such as advertising when trying to affect the kinds of results that search engines offer about them and their identities. If the majority rules in search engine results, then how might those who are in the minority ever be able to influence or control the way they are represented in a search engine? The same might be true of how men's desires and usage of search is able

to influence the values that surround women's identities in search engines, as the Ogilvy campaign might suggest. For these reasons, a deeper exploration into the historical and social conditions that give rise to problematic search results is in order, since rarely are they questioned and most Internet users have no idea how these ideas come to dominate search results on the first page of results in the first place.

Google Search: Racism and Sexism at the Forefront

My first encounter with racism in search came to me through an experience that pushed me, as a researcher, to explore the mechanisms—both technological and social—that could render the pornification of Black women a top search result, naturalizing Black women as sexual objects so effortlessly. This encounter was in 2009 when I was talking to a friend, André Brock at the University of Michigan, who causally mentioned one day, "You should see what happens when you Google 'black girls.'" I did and was stunned. I assumed it to be an aberration that could potentially shift over time. I kept thinking about it. The second time came one spring morning in 2011, when I searched for activities to entertain my preteen stepdaughter and her cousins of similar age, all of whom had made a weekend visit to my home, ready for a day of hanging out that would inevitably include time on our laptops. In order to break them away from mindless TV watching and cellphone gazing, I wanted to engage them in conversations about what was important to them and on their mind, from their perspective as young women growing up in downstate Illinois, a predominantly conservative part of Middle America. I felt that there had to be some great resources for young people of color their age, if only I could locate them. I quickly turned to the computer I used for my research (I was pursuing doctoral studies at the time), but I did not let the group of girls gather around me just yet. I opened up Google to enter in search terms that would reflect their interests, demographics, and information needs, but I liked to prescreen and anticipate what could be found on the web, in order to prepare for what might be in store. What came back from that simple, seemingly innocuous search was again nothing short of shocking: with the girls just a few feet away giggling and snorting at their own jokes, I again retrieved a Google Search results page filled with porn when I looked for "black girls." By then, I thought that my own

search history and engagement with a lot of Black feminist texts, videos, and books on my laptop would have shifted the kinds of results I would get. It had not. In intending to help the girls search for information about themselves, I had almost inadvertently exposed them to one of the most graphic and overt illustrations of what the advertisers already thought about them: Black girls were still the fodder of porn sites, dehumanizing them as commodities, as products and as objects of sexual gratification. I closed the laptop and redirected our attention to fun things we might do, such as see a movie down the street. This best information, as listed by rank in the search results, was certainly not the best information for me or for the children I love. For whom, then, was this the best information, and who decides? What were the profit and other motives driving this information to the top of the results? How had the notion of neutrality in information ranking and retrieval gone so sideways as to be perhaps one of the worst examples of racist and sexist classification of Black women in the digital age yet remain so unexamined and without public critique? That moment, I began in earnest a series of research inquiries that are central to this book.

Of course, upon reflection, I realized that I had been using the web and search tools long before the encounters I experienced just out of view of my young family members. It was just as troubling to realize that I had undoubtedly been confronted with the same type of results before but had learned, or been trained, to somehow become inured to it, to take it as a given that any search I might perform using keywords connected to my physical self and identity could return pornographic and otherwise disturbing results. Why was this the bargain into which I had tacitly entered with digital information tools? And who among us did not have to bargain in this way? As a Black woman growing up in the late twentieth century, I also knew that the presentation of Black women and girls that I discovered in my search results was not a new development of the digital age. I could see the connection between search results and tropes of African Americans that are as old and endemic to the United States as the history of the country itself. My background as a student and scholar of Black studies and Black history, combined with my doctoral studies in the political economy of digital information, aligned with my righteous indignation for Black girls everywhere. I searched on.

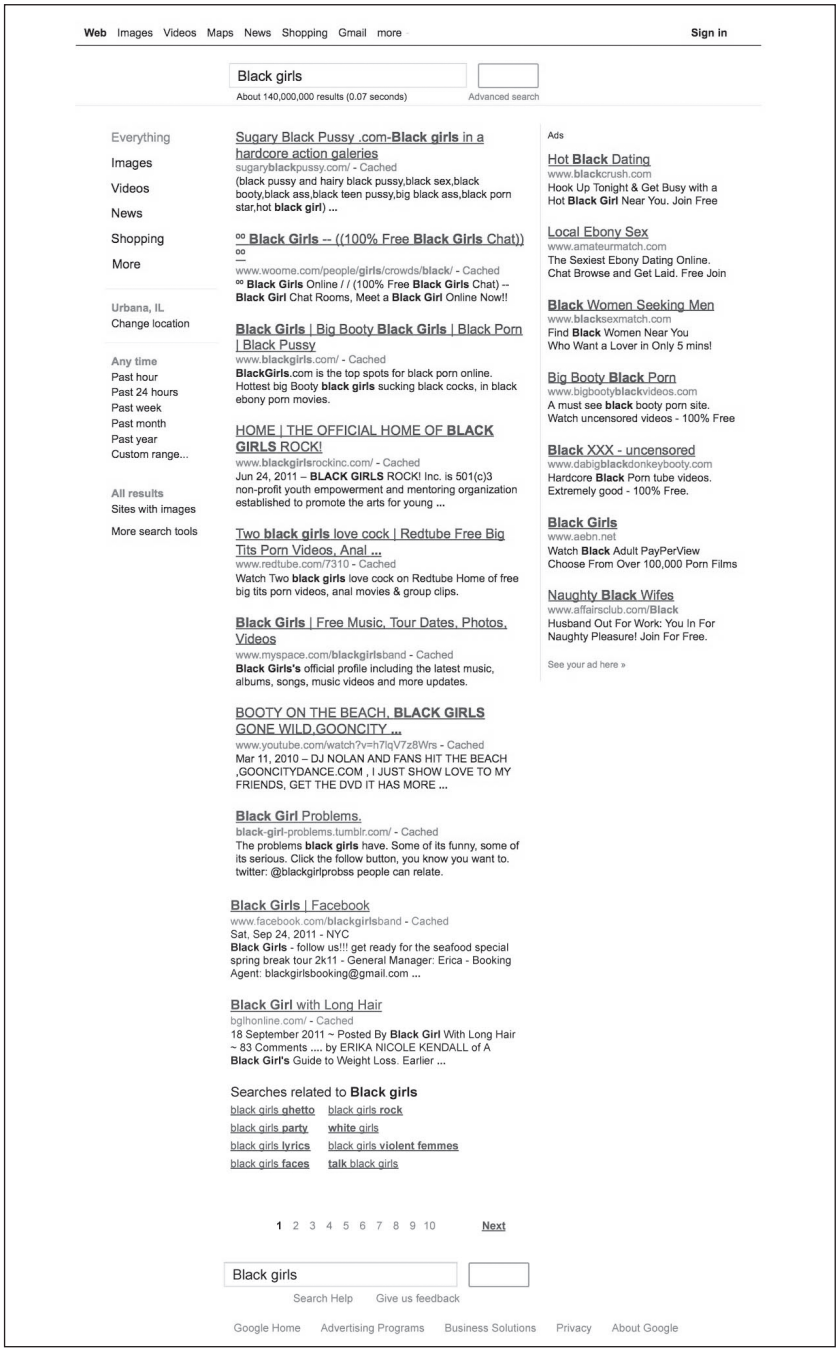


Figure 1.2. First page of search results on keywords "black girls," September 18, 2011.

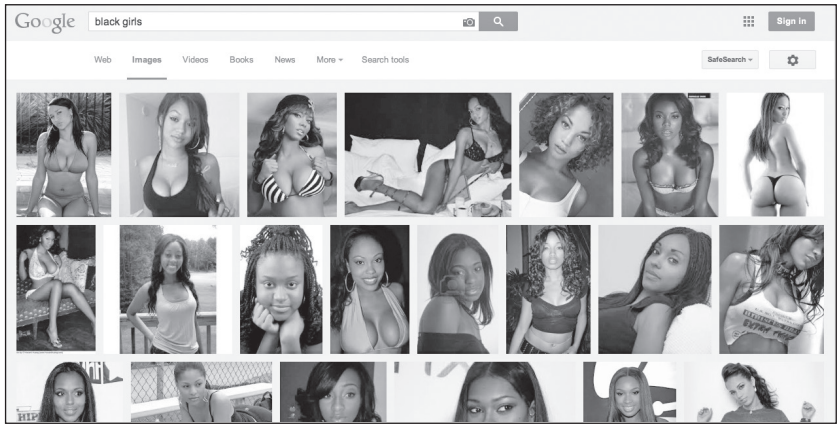


Figure 1.3. First page of image search results on keywords "black girls," April 3, 2014.

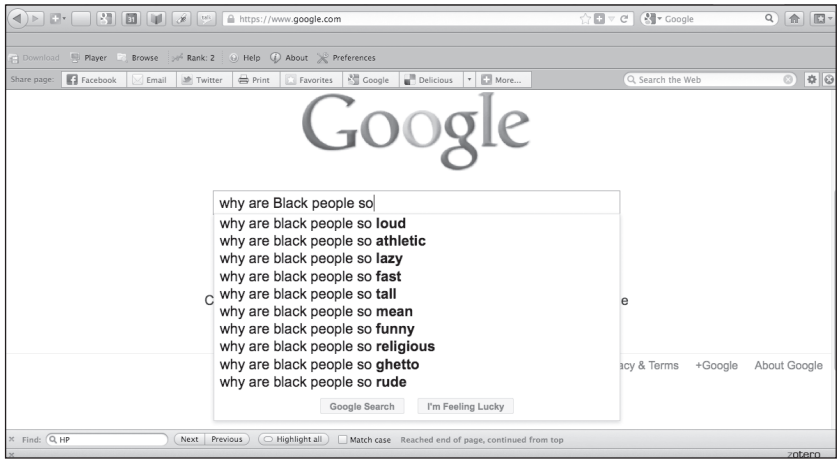


Figure 1.4. Google autosuggest results when searching the phrase "why are black people so," January 25, 2013.

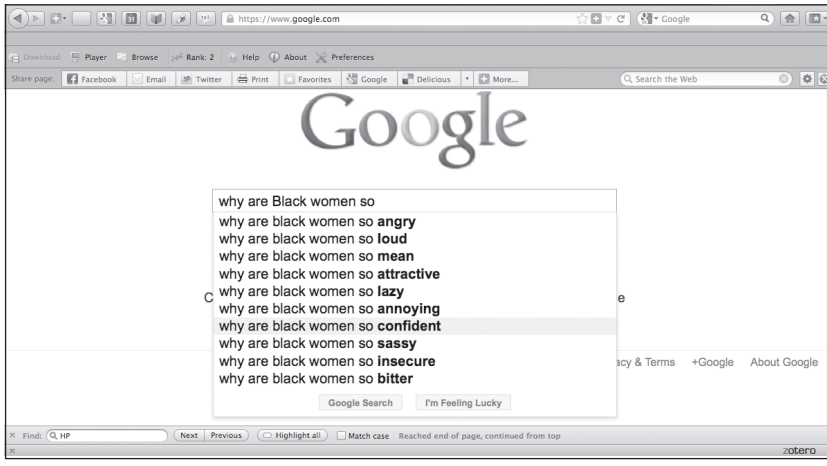


Figure 1.5. Google autosuggest results when searching the phrase "why are black women so," January 25, 2013.

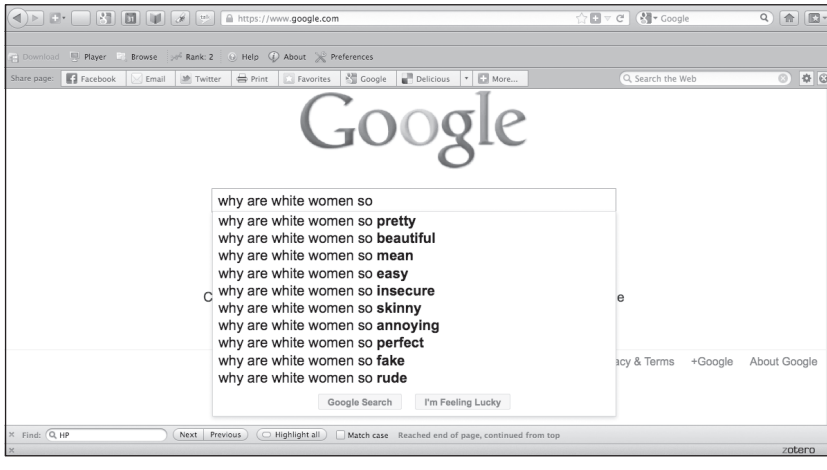


Figure 1.6. Google autosuggest results when searching the phrase "why are white women so," January 25, 2013.

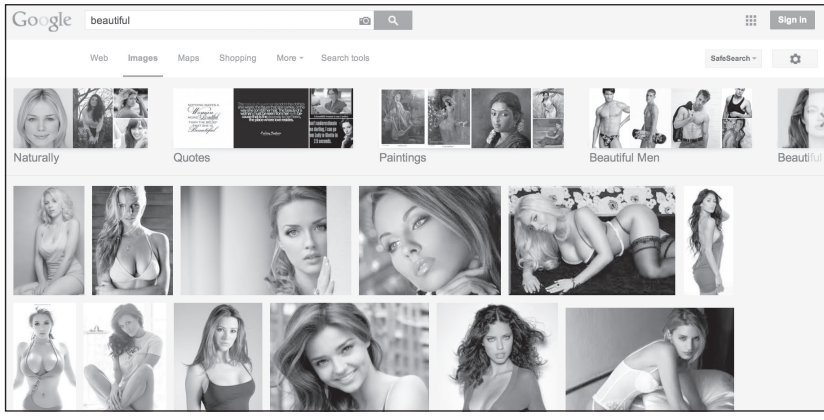


Figure 1.7. Google Images results when searching the concept "beautiful" (did not include the word "women"), December 4, 2014.

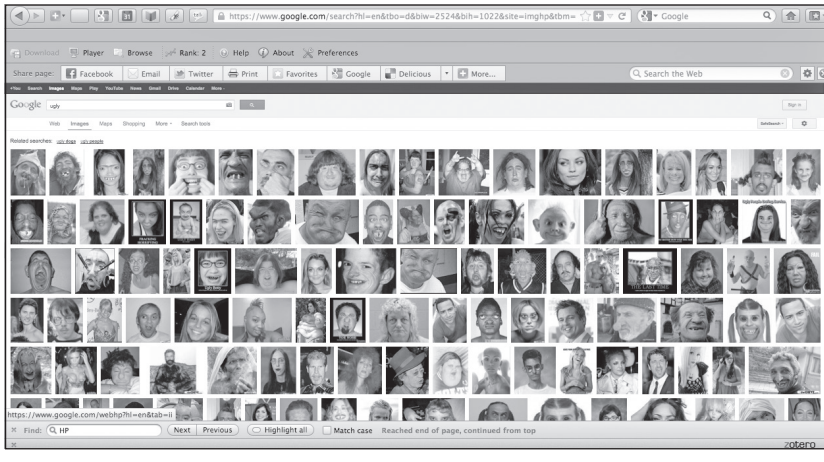


Figure 1.8. Google Images results when searching the concept "ugly" (did not include the word "women"), January 5, 2013.

Figure 1.9. Google Images results when searching the phrase "professor style" while logged in as myself, September 15, 2015.

What each of these searches represents are Google's algorithmic conceptualizations of a variety of people and ideas. Whether looking for autosuggestions or answers to various questions or looking for notions about what is beautiful or what a professor may look like (which does not account for people who look like me who are part of the professoriate—so much for "personalization"), Google's dominant narratives reflect the kinds of hegemonic frameworks and notions that are often resisted by women and people of color. Interrogating what advertising companies serve up as credible information must happen, rather than have a public instantly gratified with stereotypes in three-hundredths of a second or less.

In reality, information monopolies such as Google have the ability to prioritize web search results on the basis of a variety of topics, such as promoting their own business interests over those of competitors or smaller companies that are less profitable advertising clients than larger multinational corporations are.[2] In this case, the clicks of users, coupled with the commercial processes that allow paid advertising to be prioritized in search results, mean that representations of women are ranked on a search engine page in ways that underscore women's historical and contemporary lack of status in society—a direct mapping of old media traditions into new media architecture. Problematic representations and biases in classifications are not new. Critical library and information science scholars have well documented the ways in which some groups are more vulnerable than others to misrepresentation and misclassification.[3] They have conducted extensive and important critiques of library cataloging systems and information organization patterns that demonstrate how women, Black people, Asian Americans, Jewish people, or the Roma, as "the other," have all suffered from the insults of misrepresentation and derision in the Library of Congress Subject Headings (LCSH) or through the Dewey Decimal System. At the same time, other scholars underscore the myriad ways that social values around race and gender are directly reflected in technology design.[4] Their contributions have made it possible for me to think about the ways that race and gender are embedded in Google's search engine and to have the courage to raise critiques of one of the most beloved and revered contemporary brands.

Search happens in a highly commercial environment, and a variety of processes shape what can be found; these results are then normalized

as believable and often presented as factual. The associate professor of sociology at Arizona State University and former president of the Association of Internet Researchers Alex Halavais points to the way that heavily used technological artifacts such as the search engine have become such a normative part of our experience with digital technology and computers that they socialize us into believing that these artifacts must therefore also provide access to credible, accurate information that is depoliticized and neutral:

> Those assumptions are dangerously flawed; . . . unpacking the black box of the search engine is something of interest not only to technologists and marketers, but to anyone who wants to understand how we make sense of a newly networked world. Search engines have come to play a central role in corralling and controlling the ever-growing sea of information that is available to us, and yet they are trusted more readily than they ought to be. They freely provide, it seems, a sorting of the wheat from the chaff, and answer our most profound and most trivial questions. They have become an object of faith.[5]

Unlike the human-labor curation processes of the early Internet that led to the creation of online directories such as Lycos and Yahoo!, in the current Internet environment, information access has been left to the complex algorithms of machines to make selections and prioritize results for users. I agree with Halavais, and his is an important critique of search engines as a window into our own desires, which can have an impact on the values of society. Search is a symbiotic process that both informs and is informed in part by users. Halavais suggests that every user of a search engine should know how the system works, how information is collected, aggregated, and accessed. To achieve this vision, the public would have to have a high degree of computer programming literacy to engage deeply in the design and output of search.

Alternatively, I draw an analogy that one need not know the mechanism of radio transmission or television spectrum or how to build a cathode ray tube in order to critique racist or sexist depictions in song lyrics played on the radio or shown in a film or television show. Without a doubt, the public is unaware and must have significantly more algorithmic literacy. Since all of the platforms I interrogate in this book are

proprietary, even if we had algorithmic literacy, we still could not intervene in these private, corporate platforms.

To be specific, knowledge of the technical aspects of search and retrieval, in terms of critiquing the computer programming code that underlies the systems, is absolutely necessary to have a profound impact on these systems. Interventions such as Black Girls Code, an organization focused on teaching young, African American girls to program, is the kind of intervention we see building in response to the ways Black women have been locked out of Silicon Valley venture capital and broader participation. Simultaneously, it is important for the public, particularly people who are marginalized—such as women and girls and people of color—to be critical of the results that purport to represent them in the first ten to twenty results in a commercial search engine. They do not have the economic, political, and social capital to withstand the consequences of misrepresentation. If one holds a lot of power, one can withstand or buffer misrepresentation at a group level and often at the individual level. Marginalized and oppressed people are linked to the status of their group and are less likely to be afforded individual status and insulation from the experiences of the groups with which they are identified. The political nature of search demonstrates how algorithms are a fundamental invention of computer scientists who are human beings—and code is a language full of meaning and applied in varying ways to different types of information. Certainly, women and people of color could benefit tremendously from becoming programmers and building alternative search engines that are less disturbing and that reflect and prioritize a wider range of informational needs and perspectives.

There is an important and growing movement of scholars raising concerns. Helen Nissenbaum, a professor of media, culture, and communication and computer science at New York University, has written with Lucas Introna, a professor of organization, technology, and ethics at the Lancaster University Management School, about how search engines bias information toward the most powerful online. Their work was corroborated by Alejandro Diaz, who wrote his dissertation at Stanford on sociopolitical bias in Google's products. Kate Crawford and Tarleton Gillespie, two researchers at Microsoft Research New England, have written extensively about algorithmic bias, and Crawford recently

coorganized a summit with the White House and New York University for academics, industry, and activists concerned with the social impact of artificial intelligence in society. At that meeting, I participated in a working group on artificial-intelligence social inequality, where tremendous concern was raised about deep-machine-learning projects and software applications, including concern about furthering social injustice and structural racism. In attendance was the journalist Julia Angwin, one of the investigators of the breaking story about courtroom sentencing software Northpointe, used for risk assessment by judges to determine the alleged future criminality of defendants.[6] She and her colleagues determined that this type of artificial intelligence miserably mispredicted future criminal activity and led to the overincarceration of Black defendants. Conversely, the reporters found it was much more likely to predict that White criminals would not offend again, despite the data showing that this was not at all accurate. Sitting next to me was Cathy O'Neil, a data scientist and the author of the book *Weapons of Math Destruction*, who has an insider's view of the way that math and big data are directly implicated in the financial and housing crisis of 2008 (which, incidentally, destroyed more African American wealth than any other event in the United States, save for not compensating African Americans for three hundred years of forced enslavement). Her view from Wall Street was telling:

> The math-powered applications powering the data economy were based on choices made by fallible human beings. Some of these choices were no doubt made with the best intentions. Nevertheless, many of these models encoded human prejudice, misunderstanding, and bias into the software systems that increasingly managed our lives. Like gods, these mathematical models were opaque, their workings invisible to all but the highest priests in their domain: mathematicians and computer scientists. Their verdicts, even when wrong or harmful, were beyond dispute or appeal. And they tended to punish the poor and the oppressed in our society, while making the rich richer.[7]

Our work, each of us, in our respective way, is about interrogating the many ways that data and computing have become so profoundly their own "truth" that even in the face of evidence, the public still struggles

to hold tech companies accountable for the products and errors of their ways. These errors increasingly lead to racial and gender profiling, misrepresentation, and even economic redlining.

At the core of my argument is the way in which Google biases search to its own economic interests—for its profitability and to bolster its market dominance at any expense. Many scholars are working to illuminate the ways in which users trade their privacy, personal information, and immaterial labor for "free" tools and services offered by Google (e.g., search engine, Gmail, Google Scholar, YouTube) while the company profits from data mining its users. Recent research on Google by Siva Vaidhyanathan, professor of media studies at the University of Virginia, who has written one of the most important books on Google to date, demonstrates its dominance over the information landscape and forms the basis of a central theme in this research. Frank Pasquale, a professor of law at the University of Maryland, has also forewarned of the increasing levels of control that algorithms have over the many decisions made about us, from credit to dating options, and how difficult it is to intervene in their discriminatory effects. The political economic critique of Google by Elad Segev, a senior lecturer of media and communication in the Department of Communication at Tel Aviv University, charges that we can no longer ignore the global dominance of Google and the implications of its power in furthering digital inequality, particularly as it serves as a site of fostering global economic divides.

However, what is missing from the extant work on Google is an intersectional power analysis that accounts for the ways in which marginalized people are exponentially harmed by Google. Since I began writing this book, Google's parent company, Alphabet, has expanded its power into drone technology,[8] military-grade robotics, fiber networks, and behavioral surveillance technologies such as Nest and Google Glass.[9] These are just several of many entry points to thinking about the implications of artificial intelligence as a human rights issue. We need to be concerned about not only how ideas and people are represented but also the ethics of whether robots and other forms of automated decision making can end a life, as in the case of drones and automated weapons. To whom do we appeal? What bodies govern artificial intelligence, and where does the public raise issues or lodge

complaints with national and international courts? These questions have yet to be fully answered.

In the midst of Google's expansion, Google Search is one of the most underexamined areas of consumer protection policy,[10] and regulation has been far less successful in the United States than in the European Union. A key aspect of generating policy that protects the public is the accumulation of research about the impact of what an unregulated commercial information space does to vulnerable populations. I do this by taking a deep look at a snapshot of the web, at a specific moment in time, and interpreting the results against the history of race and gender in the U.S. This is only one of many angles that could be taken up, but I find it to be one of the most compelling ways to show how data is biased and perpetuates racism and sexism. The problems of big data go deeper than misrepresentation, for sure. They include decision-making protocols that favor corporate elites and the powerful, and they are implicated in global economic and social inequality. Deep machine learning, which is using algorithms to replicate human thinking, is predicated on specific values from specific kinds of people—namely, the most powerful institutions in society and those who control them. Diana Ascher,[11] in her dissertation on yellow journalism and cultural time orientation in the Department of Information Studies at UCLA, found there was a stark difference between headlines generated by social media managers from the *LA Times* and those provided by automated, algorithmically driven software, which generated severe backlash on Twitter. In this case, Ascher found that automated tweets in news media were more likely to be racist and misrepresentative, as in the case of police shooting victim Keith Lamont Scott of Charlotte, North Carolina, whose murder triggered nationwide protests of police brutality and excessive force.

There are many such examples. In the ensuing chapters, I continue to probe the results that are generated by Google on a variety of keyword combinations relating to racial and gender identity as a way of engaging a commonsense understanding of how power works, with the goal of changing these processes of control. By seeing and discussing these intersectional power relations, we have a significant opportunity to transform the consciousness embedded in artificial intelligence, since it is in fact, in part, a product of our own collective creation.

Figure 1.10. Automated headline generated by software and tweeted about Keith Lamont Scott, killed by police in North Carolina on September 20, 2016, as reported by the *Los Angeles Times*.

Theorizing Search: A Black Feminist Project

The impetus for my work comes from theorizing Internet search results from a Black feminist perspective; that is, I ask questions about the structure and results of web searches from the standpoint of a Black woman—a standpoint that drives me to ask different questions than have been previously posed about how Google Search works. This study builds on previous research that looks at the ways in which racialization is a salient factor in various engagements with digital technology represented in video games,[12] websites,[13] virtual worlds,[14] and digital media platforms.[15] A Black feminist perspective offers an opportunity to ask questions about the quality and content of racial hierarchies and stereotyping that appear in results from commercial search engines such as Google's; it contextualizes them by decentering the dominant lenses through which results about Black women and girls are interpreted. By

doing this, I am purposefully theorizing from a feminist perspective, while addressing often-overlooked aspects of race in feminist theories of technology. The professor emeritus of science and technology at UCLA Sandra Harding suggests that there is value in identifying a feminist method and epistemology:

> Feminist challenges reveal that the questions that are asked—and, even more significantly, those that are not asked—are at least as determinative of the adequacy of our total picture as are any answers that we can discover. Defining what is in need of scientific explanation only from the perspective of bourgeois, white men's experiences leads to partial and even perverse understandings of social life. One distinctive feature of feminist research is that it generates problematics from the perspective of women's experiences.[16]

Rather than assert that problematic or racist results are impossible to correct, in the ways that the Google disclaimer suggests,[17] I believe a feminist lens, coupled with racial awareness about the intersectional aspects of identity, offers new ground and interpretations for understanding the implications of such problematic positions about the benign instrumentality of technologies. Black feminist ways of knowing, for example, can look at searches on terms such as "black girls" and bring into the foreground evidence about the historical tendencies to misrepresent Black women in the media. Of course, these misrepresentations and the use of big data to maintain and exacerbate social relationships serve a powerful role in maintaining racial and gender subjugation. It is the persistent normalization of Black people as aberrant and undeserving of human rights and dignity under the banners of public safety, technological innovation, and the emerging creative economy that I am directly challenging by showing the egregious ways that dehumanization is rendered a legitimate free-market technology project.

I am building on the work of previous scholars of commercial search engines such as Google but am asking new questions that are informed by a Black feminist lens concerned with social justice for people who are systemically oppressed. I keep my eye on complicating the notion that information assumed to be "fact" (by virtue of its legitimation at the top of the information pile) exists because racism and sexism are profitable

under our system of racialized capitalism. The ranking hierarchy that the public embraces reflects our social values that place a premium on being number one, and search-result rankings live in this de facto system of authority. Where other scholars have problematized Google Search in terms of its lack of neutrality and prioritization of its own commercial interests, my critiques aim to explicitly address racist and sexist bias in search, fueled by neoliberal technology policy over the past thirty years.

Black Feminism as Theoretical and Methodological Approach

The commodified online status of Black women's and girls' bodies deserves scholarly attention because, in this case, their bodies are defined by a technological system that does not take into account the broader social, political, and historical significance of racist and sexist representations. The very presence of Black women and girls in search results is misunderstood and clouded by dominant narratives of the authenticity and lack of bias of search engines. In essence, the social context or meaning of derogatory or problematic Black women's representations in Google's ranking is normalized by virtue of their placement, making it easier for some people to believe that what exists on the page is strictly the result of the fact that more people are looking for Black women in pornography than anything else. This is because the public believes that what rises to the top in search is either the most popular or the most credible or both.

Yet this does not explain why the word "porn" does not have to be included in keyword searches on "black girls" and other girls and women of color to bring it to the surface as the primary data point about girls and women. The political and social meaning of such output is stripped away when Black girls are explicitly sexualized in search rankings without any explanation, particularly without the addition of the words "porn" or "sex" to the keywords. This phenomenon, I argue, is replicated from offline social relations and deeply embedded in the materiality of technological output; in other words, traditional misrepresentations in old media are made real once again online and situated in an authoritative mechanism that is trusted by the public: Google. The study of Google searches as an Internet artifact is telling. Black feminist scholars have already articulated the harm of such media misrepresentations:[18]

gender, class, power, sexuality, and other socially constructed categories interact with one another in a matrix of social relations that create conditions of inequality or oppression.

Black feminist thought offers a useful and antiessentializing lens for understanding how both race and gender are socially constructed and mutually constituted through historical, social, political, and economic processes,[19] creating interesting research questions and new analytical possibilities. As a theoretical approach, it challenges the dominant research on race and gender, which tends to universalize problems assigned to race or Blackness as "male" (or the problems of men) and organizes gender as primarily conceived through the lenses and experiences of White women, leaving Black women in a precarious and understudied position. Popular culture provides countless examples of Black female appropriation and exploitation of negative stereotypes either to assert control over the representation or at least to reap the benefits of it. The Black feminist scholar bell hooks has written extensively on the ways that neoliberal capitalism is explicitly implicated in misrepresentations and hypersexualization of Black women. hooks's work is a mandate for Black women interested in theorizing in the new media landscape, and I use it as both inspiration and a call to action for other Black women interested in engaging in critical information studies. In total, this research is informed by a host of scholars who have helped me make sense of the ways that technology ecosystems—from traditional classification systems such as library databases to new media technologies such as commercial search engines—are structuring narratives about Black women and girls. In the cases I present, I demonstrate how commercial search engines such as Google not only mediate but are mediated by a series of profit-driven imperatives that are supported by information and economic policies that underwrite the commodification of women's identities. Ultimately, this book is designed to "make it plain," as we say in the Black community, just exactly how it can be that Black women and girls continue to have their image and representations assaulted in the new media environments that are not so unfamiliar or dissimilar to old, traditional media depictions. I intend to meaningfully articulate the ways that commercialization is the source of power that drives the consumption of Black women's and girls' representative identity on the web.

While primarily offering reflection on the effects of search-engine-prioritized content, this research is at the same time intended to bring about a deeper inquiry and a series of strategies that can inform public-policy initiatives focused on connecting Black people to the Internet, in spite of the research that shows that cultural barriers, norms, and power relations alienate Black people from the web.[20] After just over a decade of focus on closing the digital divide,[21] the research questions raised here are meant to provoke a discussion about "what then?" What does it mean to have every Black woman, girl, man, and boy in the United States connected to the web if the majority of them are using a search engine such as Google to access content—whether about themselves or other things—only to find results like those with which I began this introduction? The race to digitize cultural heritage and knowledge is important, but it is often mediated by a search engine for the user who does not know precisely how to find it, much the way a library patron is reliant on deep knowledge and skills of the reference librarian to navigate the vast volumes of information in the library stacks.

The Importance of Google

Google has become a ubiquitous entity that is synonymous for many everyday users with "the Internet" itself. From serving as a browser of the Internet to handling personal email or establishing Wi-Fi networks and broadband projects in municipalities across the United States, Google, unlike traditional telecommunications companies, has unprecedented access to the collection and provision of data across a variety of platforms in a highly unregulated marketplace and policy environment. We must continue to study the implications of engagement with commercial entities such as Google and what makes them so desirable to consumers, as their use is not without consequences of increased surveillance and privacy invasions and participation in hidden labor practices. Each of these enhances the business model of Google's parent company, Alphabet, and reinforces its market dominance across a host of vertical and horizontal markets.[22] In 2011, the Federal Trade Commission started looking into Google's near-monopoly status and market dominance and the harm this could cause consumers. By March 16, 2012, Google was trading on NASDAQ at $625.04 a share, with a market capitalization of

just over $203 billion. At the time of the hearings, Google's latest income statement, for December 2011, showed gross profit at $24.7 billion. It had $43.3 billion cash on hand and just $6.21 billion in debt. Google held 66.2% of the search engine market industry in 2012. Google Search's profits have only continued to grow, and its holdings have become so significant that the larger company has renamed itself Alphabet, with Google Search as but one of many holdings. By the final writing of this book in August 2017, Alphabet was trading at $936.38 on NASDAQ, with a market capitalization of $649.49 billion.

The public is aware of the role of search in everyday life, and people's opinions on search are alarming. Recent data from tracking surveys and consumer-behavior trends by the comScore Media Metrix consumer panel conducted by the Pew Internet and American Life Project show that search engines are as important to Internet users as email is. Over sixty million Americans engage in search, and for the most part, people report that they are satisfied with the results they find in search engines. The 2005 and 2012 Pew reports on "search engine use" reveal that 73% of all Americans have used a search engine, and 59% report using a search engine every day.[23] In 2012, 83% of search engine users used Google. But Google Search prioritizes its own interests, and this is something far less visible to the public. Most people surveyed could not tell the difference between paid advertising and "genuine" results.

If search is so trusted, then why is a study such as this one needed? The exploration beyond that first simple search is the substance of this book. Throughout the discussion of these and other results, I want to emphasize the main point: there is a missing social context in commercial digital media platforms, and it matters, particularly for marginalized groups that are problematically represented in stereotypical or pornographic ways, for those who are bullied, and for those who are consistently targeted. I use only a handful of illustrative searches to underscore the point and to raise awareness—and hopefully intervention—of how important what we find on the web through commercial search engines is to society.

Search Results as Power

Search results reflect the values and norms of the search company's commercial partners and advertisers and often reflect our lowest and

most demeaning beliefs, because these ideas circulate so freely and so often that they are normalized and extremely profitable. Search results are more than simply what is popular. The dominant notion of search results as being both "objective" and "popular" makes it seem as if misogynist or racist search results are a simple mirror of the collective. Not only do problematic search results seem "normal," but they seem completely unavoidable as well, even though these ideas have been thoroughly debunked by scholars. Unfortunately, users of Google give consent to the algorithms' results through their continued use of the product, which is largely unavoidable as schools, universities, and libraries integrate Google products into our educational experiences.[24]

Google's monopoly status,[25] coupled with its algorithmic practices of biasing information toward the interests of the neoliberal capital and social elites in the United States, has resulted in a provision of information that purports to be credible but is actually a reflection of advertising interests. Stated another way, it can be argued that Google functions in the interests of its most influential paid advertisers or through an intersection of popular and commercial interests. Yet Google's users think of it as a public resource, generally free from commercial interest. Further complicating the ability to contextualize Google's results is the power of its social hegemony.[26] Google benefits directly and materially from what can be called the "labortainment"[27] of users, when users consent to freely give away their labor and personal data for the use of Google and its products, resulting in incredible profit for the company.

There are many cases that could be made to show how overreliance on commercial search by the public, including librarians, information professionals, and knowledge managers—all of whom are susceptible to overuse of or even replacement by search engines—is something that we must pay closer attention to right now. Under the current algorithmic constraints or limitations, commercial search does not provide appropriate social, historical, and contextual meaning to already overracialized and hypersexualized people who materially suffer along multiple axes. In the research presented in this study, the reader will find a more meaningful understanding of the kind of harm that such limitations can cause for users reliant on the web as an artifact of both formal and informal culture.[28] In sum, search results play a powerful role in providing fact and authority to those who see them, and as such, they must

be examined carefully. Google has become a central object of study for digital media scholars,[29] due to recognition on these scholars' parts of the power and impact wielded by the necessity to begin most engagements with social media via a search process and the near universality with which Google has been adopted and embedded into all aspects of the digital media landscape to respond to that need. This work is addressing a gap in scholarship on how search works and what it biases, public trust in search, the relationship of search to information studies, and the ways in which African Americans, among others, are mediated and commodified in Google.

To start revealing some of the processes involved, it is important to think about how results appear. Although one might believe that a query to a search engine will produce the most relevant and therefore useful information, it is actually predicated on a matrix of ways in which pages are hyperlinked and indexed on the web.[30] Rendering web content (pages) findable via search engines is an expressly social, economic, and human project, which several scholars have detailed. These renderings are delivered to users through a set of steps (algorithms) implemented by programming code and then naturalized as "objective." One of the reasons this is seen as a neutral process is because algorithmic, scientific, and mathematical solutions are evaluated through procedural and mechanistic practices, which in this case includes tracing hyperlinks among pages. This process is defined by Google's founders, Sergey Brin and Larry Page, as "voting," which is the term they use to describe how search results move up or down in a ranked list of websites. For the most part, many of these processes have been automated, or they happen through graphical user interfaces (GUIs) that allow people who are not programmers (i.e., not working at the level of code) to engage in sharing links to and from websites.[31]

Research shows that users typically use very few search terms when seeking information in a search engine and rarely use advanced search queries, as most queries are different from traditional offline information-seeking behavior.[32] This front-end behavior of users appears to be simplistic; however, the information retrieval systems are complex, and the formulation of users' queries involves cognitive and emotional processes that are not necessarily reflected in the system design.[33] In essence, while users use the simplest queries they can in a

search box because of the way interfaces are designed, this does not always reflect how search terms are mapped against more complex thought patterns and concepts that users have about a topic. This disjunction between, on the one hand, users' queries and their real questions and, on the other, information retrieval systems makes understanding the complex linkages between the content of the results that appear in a search and their import as expressions of power and social relations of critical importance.

The public generally trusts information found in search engines. Yet much of the content surfaced in a web search in a commercial search engine is linked to paid advertising, which in part helps drive it to the top of the page rank, and searchers are not typically clear about the distinctions between "real" information and advertising. Given that advertising is a fundamental part of commercial search, using content analysis to make sense of what *actually* is served up in search is appropriate and consistent with the articulation of feminist critiques of the images of women in print advertising.[34] These scholars have shown the problematic ways that women have been represented—as sex objects, incompetent, dependent on men, or underrepresented in the workforce[35]—and the content and representation of women and girls in search engines is consistent with the kinds of problematic and biased ideas that live in other advertising channels. Of course, this makes sense, because Google Search is in fact an advertising platform, not intended to solely serve as a public information resource in the way that, say, a library might. Google creates advertising algorithms, not information algorithms.

To understand search in the context of this book, it is important to look at the description of the development of Google outlined by the former Stanford computer science graduate students and cofounders of the company, Sergey Brin and Larry Page, in "The Anatomy of a Large-Scale Hypertextual Web Search Engine." Their paper, written in graduate school, serves as the architectural framework for Google's PageRank. In addition, it is crucial to also look at the way that citation analysis, the foundational notion behind Brin and Page's idea, works as a bibliometric project that has been extensively developed by library and information science scholars. Both of these dynamics are often misunderstood because they do not account for the complexities of human intervention involved in vetting of information, nor do they pay attention

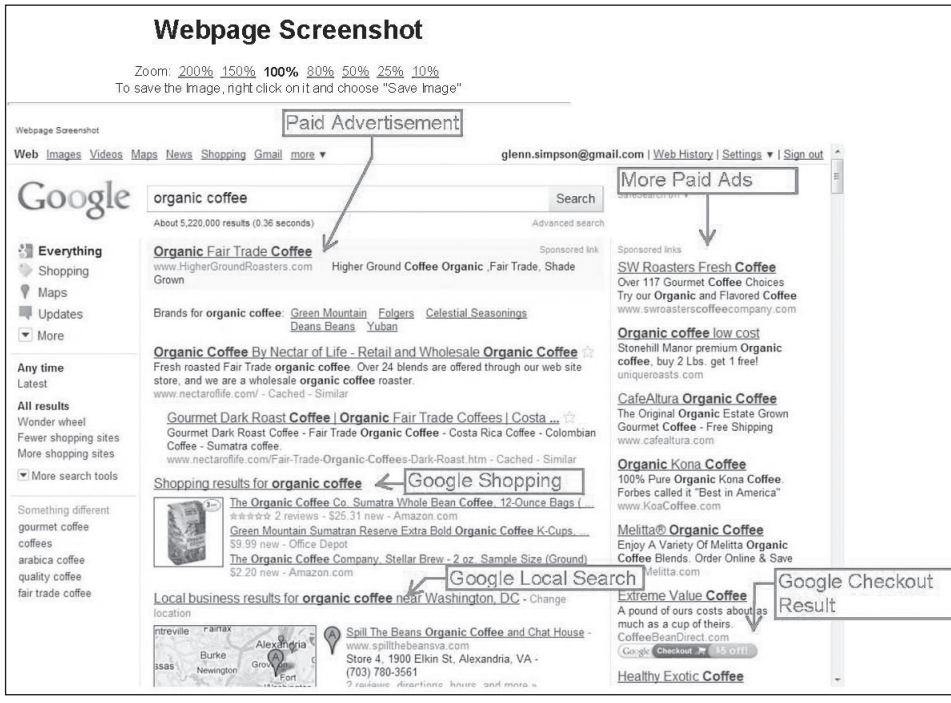


Figure 1.11. Example of Google's prioritization of its own properties in web search. Source: Inside Google (2010).

to the relative weight or importance of certain types of information.[36] For example, in the process of citing work in a publication, all citations are given equal weight in the bibliography, although their relative importance to the development of thought may not be equal at all. Additionally, no relative weight is given to whether a reference is validated, rejected, employed, or engaged—complicating the ability to know what a citation actually *means* in a document. Authors who have become so mainstream as not to be cited, such as not attributing modern discussions of class or power dynamics to Karl Marx or the notion of "the individual" to the scholar of the Italian Renaissance Jacob Burckhardt, mean that these intellectual contributions may undergird the framework of an argument but move through works without being cited any longer. Concepts that may be widely understood and accepted ways of knowing are rarely cited in mainstream scholarship, an important dynamic that

Linda Smith, former president of the Association for Information Science and Technology (ASIS&T) and associate dean of the Information School at the University of Illinois at Urbana-Champaign, argues is part of the flawed system of citation analysis that deserves greater attention if bibliometrics are to serve as a legitimating force for valuing knowledge production.

Brin and Page saw the value in using works that others cite as a model for thinking about determining what is legitimate on the web, or at least to indicate what is popular based on many people acknowledging particular types of content. In terms of outright co-optation of the citation, vis-à-vis the hyperlink, Brin and Page were aware of some of the challenges I have described. They were clearly aware from the beginning of the potential for "gaming" the system by advertising companies or commercial interests, a legitimated process now known as "search engine optimization," to drive ads or sites to the top of a results list for a query, since clicks on web links can be profitable, as are purchases gained by being vetted as "the best" by virtue of placement on the first page of PageRank. This is a process used for web results, not paid advertising, which is often highlighted in yellow (see figure 1.6). Results that appear not to be advertising are in fact influenced by the advertising algorithm. In contrast to scientific or scholarly citations, which once in print are persistent and static, hyperlinking is a dynamic process that can change from moment to moment.[37] As a result, the stability of results in Google ranking shifts and is prone to being affected by a number of processes that I will cover, primarily search engine optimization and advertising. This means that results shift over time. The results of what is most hyperlinked using Google's algorithm today will be different at a later date or from the time that Google's web-indexing crawlers move through the web until the next cycle.[38]

Citation importance is a foundational concept for determining scholarly relevance in certain disciplines, and citation analysis has largely been considered a mechanism for determining whether a given article or scholarly work is important to the scholarly community. I want to revisit this concept because it also has implications for thinking about the legitimation of information, not just citability or popularity. It is also a function of human beings who are engaged in a curation practice, not entirely left to automation. Simply put, if scholars choose to

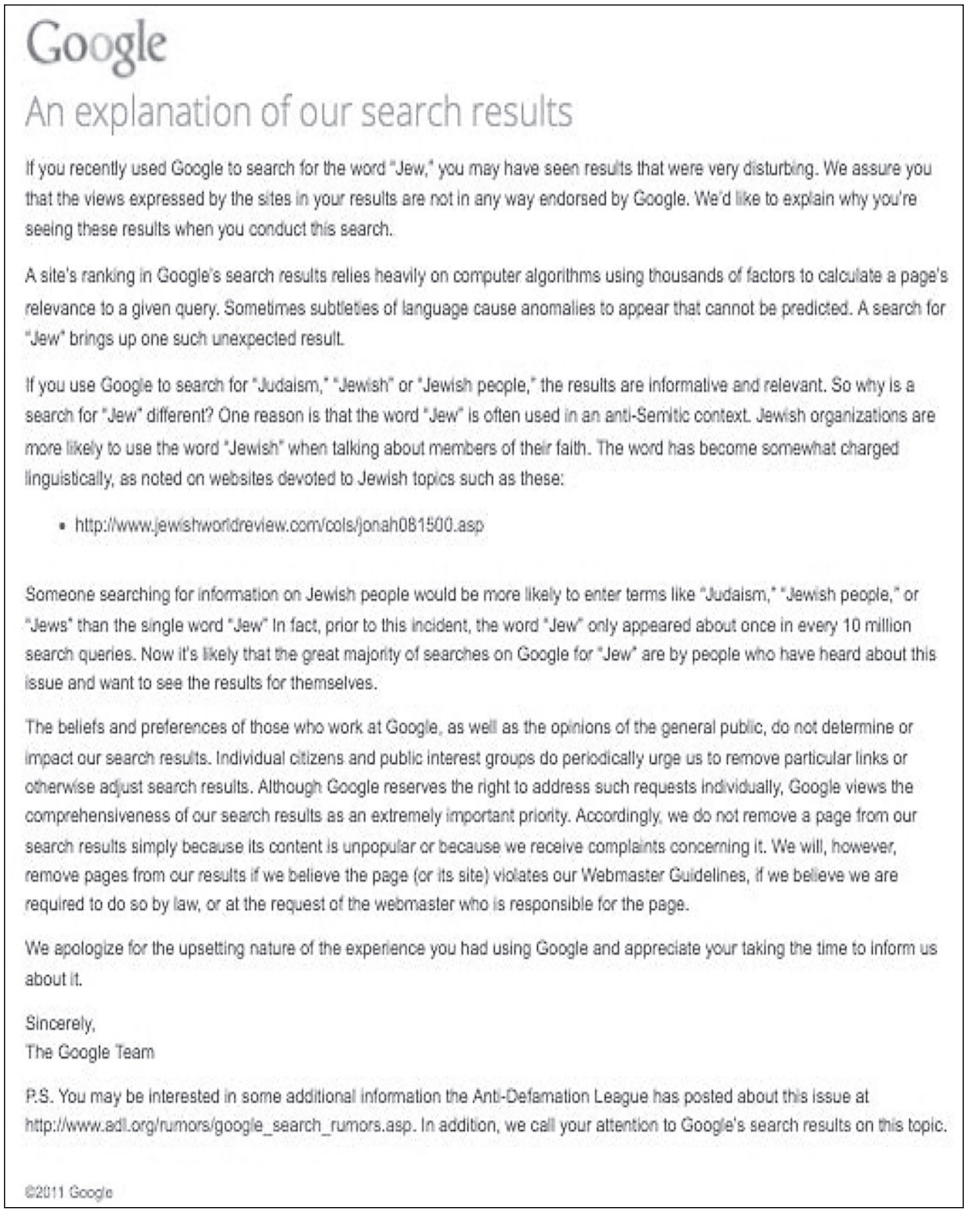
cite a study or document, they have signaled its relevance; thus, human beings (scholars) are involved in making decisions about a document's relevance, although all citations in a bibliography do not share the same level of meaningfulness. Building on this concept of credibility through citation, PageRank is what Brin and Page call the greater likelihood that a document is relevant "if there are many pages that point to it" versus "the probability that the random surfer visits a page."[39] In their research, which led to the development of Google Search, Brin and Page discuss the possibility of monopolizing and manipulating keywords through commercialization of the web search process. Their information-retrieval goal was to deliver the most relevant or very best ten or so documents out of the possible number of documents that could be returned from the web. The resulting development of their search architecture is PageRank—a system that is based on "the objective measure of its citation importance that corresponds well with people's subjective idea of importance."[40]

One of the most profound parts of Brin and Page's work is in appendix A, in which they acknowledge the ways that commercial interests can compromise the quality of search result retrieval. They state, citing Ben Bagdikian, "It is clear that a search engine which was taking money for showing cellular phone ads would have difficulty justifying the page that our system returned to its paying advertisers. For this type of reason and historical experience with other media, we expect that advertising funded search engines will be inherently biased towards the advertisers and away from the needs of the consumers."[41] Brin and Page outline a clear roadmap for how bias would work in advertising-oriented search and the effects this would have, and they directly suggest that it is in the consumer's interest not to have search compromised by advertising and commercialism. To some degree, PageRank was intended to be a measure of relevance based on popularity—including what both web surfers and web designers link to from their sites. As with academic citations, Brin and Page decided that citation analysis could be used as a model for determining whether web links could be ranked according to their importance by measuring how much they were back-linked or hyperlinked to or from. Thus, the model for web indexing pages was born. However, in the case of citation analysis, a scholarly author goes through several stages of vetting and credibility testing, such as the peer-review process,

before work can be published and cited. In the case of the web, such credibility checking is not a factor in determining what will be hyperlinked. This was made explicitly clear in the many news reports covering the 2016 U.S. presidential election, where clickbait and manufactured "news" from all over the world clouded accurate reporting of facts on the presidential candidates.

Another example of the shortcomings of removing this human curation or decision making from the first page of results at the top of PageRank, in addition to the results that I found for "black girls," can be found in the more public dispute over the results that were returned on searches for the word "Jew," which included a significant number of anti-Semitic pages. As can be seen by Google's response to the results of a keyword search for "Jew," Google takes little responsibility toward the ways that it provides information on racial and gendered identities, which are curated in more meaningful ways in scholarly databases. Siva Vaidhyanathan's 2011 book *The Googlization of Everything (And Why We Should Worry)* chronicles recent attempts by the Jewish community and Anti-Defamation League to challenge Google's priority ranking to the first page of anti-Semitic, Holocaust-denial websites. So troublesome were these search results that in 2011, Google issued a statement about its search process, encouraging people to use "Jews" and "Jewish people" in their searches, rather than the seemingly pejorative term "Jew"—claiming that the company can do nothing about the word's co-optation by White supremacist groups (see figure 1.12).

Google, according to its own disclaimer, will only remove pages that are considered unlawful, as is the case in France and Germany, where selling or distributing neo-Nazi materials is prohibited. Without such limits on derogatory, racist, sexist, or homophobic materials, Google allows its algorithm—which is, as we can see, laden with what Diaz calls "sociopolitics"—to stand without debate while protesting its inability to remove pages. As recently as June 27, 2012, Google settled a claim by the French antiracism organization the International League Against Racism over Google's use of ethnic identity—"Jew"—in association with popular searches.[42] Under French law, racial identity markers cannot be stored in databases, and the auto-complete techniques used in the Google search box link names of people to the word "Jew" on the basis of past user searches. What this recent case points to is another effort to



Google

An explanation of our search results

If you recently used Google to search for the word "Jew," you may have seen results that were very disturbing. We assure you that the views expressed by the sites in your results are not in any way endorsed by Google. We'd like to explain why you're seeing these results when you conduct this search.

A site's ranking in Google's search results relies heavily on computer algorithms using thousands of factors to calculate a page's relevance to a given query. Sometimes subtleties of language cause anomalies to appear that cannot be predicted. A search for "Jew" brings up one such unexpected result.

If you use Google to search for "Judaism," "Jewish" or "Jewish people," the results are informative and relevant. So why is a search for "Jew" different? One reason is that the word "Jew" is often used in an anti-Semitic context. Jewish organizations are more likely to use the word "Jewish" when talking about members of their faith. The word has become somewhat charged linguistically, as noted on websites devoted to Jewish topics such as these:

- http://www.jewishworldreview.com/cols/jonah081500.asp

Someone searching for information on Jewish people would be more likely to enter terms like "Judaism," "Jewish people," or "Jews" than the single word "Jew" In fact, prior to this incident, the word "Jew" only appeared about once in every 10 million search queries. Now it's likely that the great majority of searches on Google for "Jew" are by people who have heard about this issue and want to see the results for themselves.

The beliefs and preferences of those who work at Google, as well as the opinions of the general public, do not determine or impact our search results. Individual citizens and public interest groups do periodically urge us to remove particular links or otherwise adjust search results. Although Google reserves the right to address such requests individually, Google views the comprehensiveness of our search results as an extremely important priority. Accordingly, we do not remove a page from our search results simply because its content is unpopular or because we receive complaints concerning it. We will, however, remove pages from our results if we believe the page (or its site) violates our Webmaster Guidelines, if we believe we are required to do so by law, or at the request of the webmaster who is responsible for the page.

We apologize for the upsetting nature of the experience you had using Google and appreciate your taking the time to inform us about it.

Sincerely,
The Google Team

P.S. You may be interested in some additional information the Anti-Defamation League has posted about this issue at http://www.adl.org/rumors/google_search_rumors.asp. In addition, we call your attention to Google's search results on this topic.

©2011 Google

Figure 1.12. Explanation of results by Google. Source: www.google.com/explanation.html (originally available in 2005).

redefine distorted images of people in new media. These cases of distortion, however, continue to accumulate.

The public's as well as the Jewish community's interest in accurate information about Jewish culture and the Holocaust should be enough motivation to provoke a national discussion about consumer harm, to which my research shows we can add other cultural and gender-based identities that are misrepresented in search engines. However, Google's assertion that its search results, though problematic, were computer generated (and thus not the company's fault) was apparently a good-enough answer for the Anti-Defamation League (ADL), which declared, "We are extremely pleased that Google has heard our concerns and those of its users about the offensive nature of some search results and the unusually high ranking of peddlers of bigotry and anti-Semitism."[43] The ADL does acknowledge on its website its gratitude to Sergey Brin, cofounder of Google and son of Russian Jewish immigrants, for his personal letter to the organization and his mea culpa for the "Jew" search-term debacle. The ADL generously stated in its press release about the incident that Google, as a resource to the public, should be forgiven because "until the technical modifications are implemented, Google has placed text on its site that gives users a clear explanation of how search results are obtained. Google searches are automatically determined using computer algorithms that take into account thousands of factors to calculate a page's relevance."[44]

If there is a technical fix, then what are the constraints that Google is facing such that eight years later, the issue has yet to be resolved? A search for the word "Jew" in 2012 produces a beige box at the bottom of the results page from Google linking to its lengthy disclaimer about the results—which remain a mix of both anti-Semitic and informative sites (see figure 1.13). That Google places the responsibility for bad results back on the shoulders of information searchers is a problem, since most of the results that the public gets on broad or open-ended racial and gendered searches are out of their control and entirely within the control of Google Search.

It is important to note that Google has conceded the fact that anti-Semitism as the primary information result about Jewish people is a problem, despite its disclaimer that tries to put the onus for bad results on the searcher. In Germany and France, for example, it is illegal to sell

Figure 1.13. Google's bottom-of-the-page beige box regarding offensive results, which previously took users to "An Explanation of Our Search Results." Source: www.google.com/explanation (no longer available).

Nazi memorabilia, and Google has had to put in place filters that ensure online retailers of such are not visible in search results. In 2002, Benjamin Edelman and Jonathan Zittrain at Harvard University's Berkman Center for Internet and Society concluded that Google was filtering its search results in accordance with local law and precluding neo-Nazi organizations and content from being displayed.[45] While this indicates that Google can in fact remove objectionable hits, it is equally troubling, because the company provided search results without informing searchers that information was being deleted. That is to say that the results were presented as factual and complete without mention of omission. Yahoo!, another leading U.S. search engine, was forced into a protracted legal battle in France for allowing pro-Nazi memorabilia to be sold through its search engine, in violation of French law. What these cases point to is that search results are deeply contextual and easily manipulated, rather than objective, consistent, and transparent, and that they can be legitimated only in social, political, and historical context.

The issue of unlawfulness over the harm caused by derogatory results is a question of considerable debate. For example, in the United States, where free speech protections are afforded to all kinds of speech, including hate speech and racist or sexist depictions of people and communities, there is a higher standard of proof required to show harm toward disenfranchised or oppressed people. We need legal protections now more than ever, as automated decision-making systems wield greater power in society.

Gaming the System: Optimizing and Co-opting Results in Search Engines

Google's advertising tool or optimization product is AdWords. AdWords allows anyone to advertise on Google's search pages and is highly customizable. With this tool, an advertiser can set a maximum amount of money that it wants to spend on a daily basis for advertising. The model for AdWords is that Google will display ads on search pages that it believes are relevant to the kind of search query that is taking place by a user. If a user clicks on an ad, then the advertiser pays. And Google incentivizes advertisers by suggesting that their ads will show up in searches and display, but the advertiser (or Google customer) pays for the ad only when a user (Google consumer) clicks on the advertisement, which is the cost per click (CPC). The advertiser selects a series of "keywords" that it believes closely align with its product or service that it is advertising, and a customer can use a Keyword Estimator tool in order to see how much the keywords they choose to associate with their site might cost. This advertising mechanism is an essential part of how PageRank prioritizes ads on a page, and the association of certain keywords with particular industries, products, and services derives from this process, which works in tandem with PageRank.

In order to make sense of the specific results in keyword searches, it is important to know how Google's PageRank works, what commercial processes are involved in PageRank, how search engine optimization (SEO) companies have been developed to influence the process of moving up results,[46] and how Google bombing[47] occurs on occasion. Google bombing is the practice of excessively hyperlinking to a website (repeatedly coding HTML to link a page to a term or phrase) to cause it to

rise to the top of PageRank, but it is also seen as a type of "hit and run" activity that can deliberately co-opt terms and identities on the web for political, ideological, and satirical purposes. Judit Bar-Ilan, a professor of information science at Bar-Ilan University, has studied this practice to see if the effect of forcing results to the top of PageRank has a lasting effect on the result's persistence, which can happen in well-orchestrated campaigns. In essence, Google bombing is the process of co-opting content or a term and redirecting it to unrelated content. Internet lore attributes the creation of the term "Google bombing" to Adam Mathes, who associated the term "talentless hack" with a friend's website in 2001. Practices such as Google bombing (also known as Google washing) are impacting both SEO companies and Google alike. While Google is invested in maintaining the quality of search results in PageRank and policing companies that attempt to "game the system," as Brin and Page foreshadowed, SEO companies do not want to lose ground in pushing their clients or their brands up in PageRank.[48] SEO is the process of "using a range of techniques, including augmenting HTML code, web page copy editing, site navigation, linking campaigns and more, in order to improve how well a site or page gets listed in search engines for particular search topics,"[49] in contrast to "paid search," in which the company pays Google for its ads to be displayed when specific terms are searched. A media spectacle of this nature is the case of Senator Rick Santorum, Republican of Pennsylvania, whose website and name were associated with insults in order to drive objectionable content to the top of PageRank.[50] Others who have experienced this kind of co-optation of identity or less-than-desirable association of their name with an insult include former president George W. Bush and the pop singer Justin Bieber.

All of these practices of search engine optimization and Google bombing can take place independently of and in concert with the process of crawling and indexing the web. In fact, being found gives meaning to a website and creates the conditions in which a ranking can happen. Search engine optimization is a major factor in findability on the web. What is important to note is that search engine optimization is a multibillion-dollar industry that impacts the value of specific keywords; that is, marketers are invested in using particular keywords, and keyword combinations, to optimize their rankings.

Figure 1.14. Example of a Google bomb on George W. Bush and the search terms "miserable failure," 2005.

Despite the widespread beliefs in the Internet as a democratic space where people have the power to dynamically participate as equals, the Internet is in fact organized to the benefit of powerful elites,[51] including corporations that can afford to purchase and redirect searches to their own sites. What is most popular on the Internet is not wholly a matter of what users click on and how websites are hyperlinked—there are a variety of processes at play. Max Holloway of *Search Engine Watch* notes, "Similarly, with Google, when you click on a result—or, for that matter, don't click on a result—that behavior impacts future results. One consequence of this complexity is difficulty in explaining system behavior. We primarily rely on performance metrics to quantify the success or failure of retrieval results, or to tell us which variations of a system work better than others. Such metrics allow the system to be continuously improved upon."[52] The goal of combining search terms, then, in the context of the landscape of the search engine optimization logic, is only the beginning.

Much research has now been done to dispel the notion that users of the Internet have the ability to "vote" with their clicks and express interest in individual content and information, resulting in democratic practices online.[53] Research shows the ways that political news and information in the blogosphere are mediated and directed such that major news outlets surface to the top of the information pile over less well-known websites and alternative news sites in the blogosphere, to the benefit of elites.[54] In the case of political information seeking, research has shown how Google directs web traffic to mainstream corporate news conglomerates, which increases their ability to shape the political discourse. Google too is a mediating platform that, at least at one moment in time, in September 2011, allowed the porn industry to take precedence in the representations of Black women and girls over other possibilities among at least eleven and a half billion documents that could have been indexed.[55] That moment in 2011 is, however, emblematic of Google's ongoing dynamic. It has since produced many more problematic results.

As the Federal Communications Commission declares broadband "the new common medium,"[56] the role of search engines is taking on even greater importance to "the widest possible dissemination of information from diverse and antagonistic sources . . . essential to the welfare of the public."[57] This political economy of search engines and traditional advertisers includes search engine optimization companies that operate in a secondary or gray market (often in opposition to Google). Ultimately, the results we get are about the financial interest that Google or SEOs have in helping their own clients optimize their rankings. In fact, Google is in the business of selling optimization. Extensive critiques of Google have been written on the political economy of search[58] and the way that consolidations in the search engine industry market contribute to the erosion of public resources, in much the way that the media scholars Robert McChesney, former host of nationally syndicated radio show *Media Matters*, and John Nichols, a writer for the *Nation*, critique the consolidation of the mass-media news markets. Others have spoken to the inherent democratizing effect of search engines, such that search is adding to the diversity of political organization and discourse because the public is able to access more information in the marketplace of ideas.[59] Mounting evidence shows that automated decision-making systems are disproportionately harmful to the most vulnerable and the

least powerful, who have little ability to intervene in them—from misrepresentation to prison sentencing to accessing credit and other life-impacting formulas.

This landscape of search engines is important to consider in understanding the meaning of search for the public, and it serves as a basis for examining why information quality online is significant. We must trouble the notion of Google as a public resource, particularly as institutions become more reliant on Google when looking for high-quality, contextualized, and credible information. This shift from public institutions such as libraries and schools as brokers of information to the private sector, in projects such as Google Books, for example, is placing previously public assets in the hands of a multinational corporation for private exploitation. Information is a new commodity, and search engines can function as private information enclosures.[60] We need to make more visible the commercial interests that overdetermine what we can find online.

The Enclosure of the Public Domain through Search Engines

At the same time that search engines have become the dominant portal for information seeking by U.S. Internet users, the rise of commercial mediation of information in those same search engines is further enclosing the public domain. Decreases in funding for public information institutions such as libraries and educational institutions and shifts of responsibility to individuals and the private sector have reframed the ways that the public conceives of what can and should be in the public domain. Yet Google Search is conceived of as a public resource, even though it is a multinational advertising company. These shifts of resources that were once considered public have been impacted by increased intellectual property rights, licensing, and publishing agreements for companies and private individuals in the domain of copyrights, patents, and other legal protections. The move of community-based assets and culture to private hands is arguably a crisis that has rolled back the common good, but there are still possible strategies that can be explored for maintaining what can remain in the public domain. Commercial control over the Internet, often considered a "commons," has moved it further away from the public through a series of national and international regulations and intellectual and commercial borders that exist in the management of the

network.[61] Beyond the Internet and the control of the network, public information—whether delivered over the web or not—continues to be outsourced to the private sphere, eroding the public information commons that has been a basic tenet of U.S. democracy.

The critical media scholar Herbert Schiller, whose work foreshadowed many of the current challenges in the information and communications landscape, provides a detailed examination of the impact of outsourcing and deregulation in the spheres of communication and public information. His words are still timely: "The practice of selling government (or any) information serves the corporate user well. Ordinarily individual users go to the end of the dissemination queue. Profoundly antidemocratic in its effect, privatizing and/or selling information, which at one time was considered public property, has become a standard practice in recent years."[62] What this critique shows is that the privatization and commercial nature of information has become so normalized that it not only becomes obscured from view but, as a result, is increasingly difficult to critique within the public domain. The Pew Internet and American Life Project corroborates that the public trusts multinational corporations that provide information over the Internet and that there is a low degree of distrust of the privatization of information.[63] Part of this process of acquiescence to the increased corporatization of public life can be explained by the economic landscape, which is shaped by military-industrial projects such as the Internet that have emerged in the United States,[64] increasing the challenge of scholars who are researching the impact of such shifts in resources and accountability. Molly Niesen at the University of Illinois has written extensively on the loss of public accountability by federal agencies such as the Federal Trade Commission (FTC), which is a major contribution to our understanding of where the public can focus attention on policy interventions.[65] We should leverage her research to think about the FTC as the key agency to manage and intervene in how corporations control the information landscape.

The Cultural Power of Algorithms

The public is minimally aware of these shifts in the cultural power and import of algorithms. In a 2015 study by the Pew Research Center,

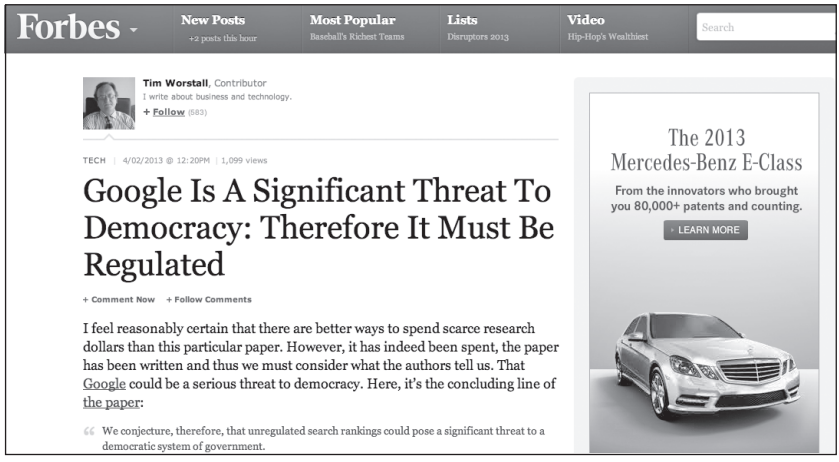


Figure 1.15. *Forbes*'s online reporting (and critique) of the Epstein and Robertson study.

"American's Privacy Strategies Post-Snowden," only 34% of respondents who were aware of the surveillance that happens automatically online through media platforms, such as search behavior, email use, and social media, reported that they were shifting their online behavior because of concerns of government surveillance and the potential implications or harm that could come to them.[66] Little of the American public knows that online behavior has more importance than ever. Indeed, Internet-based activities are dramatically affecting our notions of how democracy and freedom work, particularly in the realm of the free flow of information and communication. Our ability to engage with the information landscape subtly and pervasively impacts our understanding of the world and each other.

An example of how information flow and bias in the realm of politics have recently come to the fore can be found in an important new study about how information bias can radically alter election outcomes. The former editor of *Psychology Today* and professor Robert Epstein and Ronald Robertson, the associate director of the American Institute for Behavioral Research and Technology, found in their 2013 study that democracy was at risk because manipulating search rankings could shift voters' preferences, substantially and without their awareness. In their study, they note that the tenor of stories about a candidate in search engine results, whether favorable or unfavorable, dramatically af-

fected the way that people voted. Seventy-five percent of participants were not aware that the search results had been manipulated. The researchers concluded, "The outcomes of real elections—especially tight races—can conceivably be determined by the strategic manipulation of search engine rankings and . . . that the manipulation can be accomplished without people being aware of it. We speculate that unregulated search engines could pose a serious threat to the democratic system of government."[67]

In March 2012, the Pew Internet and American Life Project issued an update to its 2005 "Search Engine Users" study. The 2005 and 2012 surveys tracking consumer-behavior trends from the comScore Media Metrix consumer panel show that search engines are as important to Internet users as email is. In fact, the *Search Engine Use 2012* report suggests that the public is "more satisfied than ever with the quality of search results."[68] Further findings include the following:

- 73% of all Americans have used a search engine, and 59% report using a search engine every day.
- 83% of search engine users use Google.

Especially alarming is the way that search engines are increasingly positioned as a trusted public resource returning reliable and credible information. According to Pew, users report generally good outcomes and relatively high confidence in the capabilities of search engines:

- 73% of search engine users say that most or all the information they find as they use search engines is accurate and trustworthy.

Yet, at the same time that search engine users report high degrees of confidence in their skills and trust in the information they retrieve from engines, they have also reported that they are naïve about how search engines work:

- 62% of search engine users are not aware of the difference between paid and unpaid results; that is, only 38% are aware, and only 8% of search engine users say that they can always tell which results are paid or sponsored and which are not.

- In 2005, 70% of search engine users were fine with the concept of paid or sponsored results, but in 2012, users reported that they are not okay with targeted advertising because they do not like having their online behavior tracked and analyzed.
- In 2005, 45% of search engine users said they would stop using search engines if they thought the engines were not being clear about offering some results for pay.
- In 2005, 64% of those who used engines at least daily said search engines are a fair and unbiased source of information; the percentage increased to 66% in 2012.

Users in the 2012 Pew study also expressed concern about personalization:

- 73% reported that they would *not be okay* with a search engine keeping track of searches and using that information to personalize future search results. Participants reported that they feel this to be an invasion of privacy.

In the context of these concerns, a 2011 study by the researchers Martin Feuz and Matthew Fuller from the Centre for Cultural Studies at the University of London and Felix Stalder from the Zurich University of the Arts found that personalization is not simply a service to users but rather a mechanism for better matching consumers with advertisers and that Google's personalization or aggregation is about actively matching people to groups, that is, categorizing individuals.[69] In many cases, different users are seeing similar content to each other, but users have little ability to see how the platform is attempting to use prior search history and demographic information to shape their results. Personalization is, to some degree, giving people the results they want on the basis of what Google knows about its users, but it is also generating results for viewers to see what Google Search thinks might be good for advertisers by means of compromises to the basic algorithm. This new wave of interactivity, without a doubt, is on the minds of both users and search engine optimizing companies and agencies. Google applications such as Gmail or Google Docs and social media sites such as Facebook track identity and previous searches in order to surface targeted ads for users by analyzing users' web traces. So not only do search engines increasingly remember the digital traces of where we have been

and what links we have clicked in order to provide more custom content (a practice that has begun to gather more public attention after Google announced it would use past search practices and link them to users in its privacy policy change in 2012),[70] but search results will also vary depending on whether filters to screen out porn are enabled on computers.[71]

It is certain that information that surfaces to the top of the search pile is not exactly the same for every user in every location, and a variety of commercial advertising, political, social, and economic decisions are linked to the way search results are coded and displayed. At the same time, results are generally quite similar, and complete search personalization—customized to very specific identities, wants, and desires—has yet to be developed. For now, this level of personal-identity personalization has less impact on the variation in results than is generally believed by the public.

Losing Control of Our Images and Ourselves in Search

It is well known that traditional media have been rife with negative or stereotypical images of African American / Black people,[72] and the web as the locus of new media is a place where traditional media interests are replicated. Those who have been inappropriately and unfairly represented in racist and sexist ways in old media have been able to cogently critique those representations and demand expanded representations, protest stereotypes, and call for greater participation in the production of alternative, nonstereotypical or oppressive representations. This is part of the social charge of civil rights organizations such as the Urban League[73] and the National Association for the Advancement of Colored People, which monitor and report on minority misrepresentations, as well as celebrate positive portrayals of African Americans in the media.[74] At a policy level, some civil rights organizations and researchers such as Darnell Hunt, dean of the division of social science and department chair of sociology at UCLA,[75] have been concerned with media representations of African Americans, and mainstream organizations such as Free Press have been active in providing resources about the impact of the lack of diversity, stereotyping, and hate speech in the media. Indeed, some of these resources have been directed toward net-neutrality issues

and closing the digital divide.[76] Media advocacy groups that focus on the pornification of women or the stereotyping of people of color might turn their attention toward the Internet as another consolidated media resource, particularly given the evidence showing Google's information and advertising monopoly status on the web.

Bias in Search

"Traffic Report: How Google Is Squeezing Out Competitors and Muscling Into New Markets," by ConsumerWatchdog.org's Inside Google (June 2010), details how Google effectively blocks sites that it competes with and prioritizes its own properties to the top of the search pile (YouTube over other video sites, Google Maps over MapQuest, and Google Images over Photobucket and Flickr). The report highlights the process by which Universal Search is not a neutral and therefore universal process but rather a commercial one that moves sites that buy paid advertising to the top of the pile. Amid these practices, the media, buttressed by an FTC investigation,[77] have suggested that algorithms are not at all unethical or harmful because they are free services and Google has the right to run its business in any way it sees fit. Arguably, this is true, so true that the public should be thoroughly informed about the ways that Google biases information—toward largely stereotypic and decontextualized results, at least when it comes to certain groups of people. Commercial platforms such as Facebook and YouTube go to great lengths to monitor uploaded user content by hiring web content screeners, who at their own peril screen illicit content that can potentially harm the public.[78] The expectation of such filtering suggests that such sites vet content on the Internet on the basis of some objective criteria that indicate that some content is in fact quite harmful to the public. New research conducted by Sarah T. Roberts in the Department of Information Studies at UCLA shows the ways that, in fact, commercial content moderation (CCM, a term she coined) is a very active part of determining what is allowed to surface on Google, Yahoo!, and other commercial text, video, image, and audio engines.[79] Her work on video content moderation elucidates the ways that commercial digital media platforms currently outsource or insource image and video content filtering to comply with their terms of use

agreements. What is alarming about Roberts's work is that it reveals the processes by which content is already being screened and assessed according to a continuum of values that largely reflect U.S.-based social norms, and these norms reflect a number of racist and stereotypical ideas that make screening racism and sexism and the abuse of humans in racialized ways "in" and perfectly acceptable, while other ideas such as the abuse of animals (which is also unacceptable) are "out" and screened or blocked from view. She details an interview with one of the commercial content moderators (CCMs) this way:

> We have very, very specific itemized internal policies . . . the internal policies are not made public because then it becomes very easy to skirt them to essentially the point of breaking them. So yeah, we had very specific internal policies that we were constantly, we would meet once a week with SecPol to discuss, there was one, blackface is not technically considered hate speech by default. Which always rubbed me the wrong way, so I had probably ten meltdowns about that. When we were having these meetings discussing policy and to be fair to them, they always listened to me, they never shut me up. They didn't agree, and they never changed the policy but they always let me have my say, which was surprising. (Max Breen, MegaTech CCM Worker).

The MegaTech example is an illustration of the fact that social media companies and platforms make active decisions about what kinds of racist, sexist, and hateful imagery and content they will host and to what extent they will host it. These decisions may revolve around issues of "free speech" and "free expression" for the user base, but on commercial social media sites and platforms, these principles are always counterbalanced by a profit motive; if a platform were to become notorious for being too restrictive in the eyes of the majority of its users, it would run the risk of losing participants to offer to its advertisers. So MegaTech erred on the side of allowing more, rather than less, racist content, in spite of the fact that one of its own CCM team members argued vociferously against it and, by his own description, experienced emotional distress ("meltdowns") around it.[80]

This research by Roberts, particularly in the wake of leaked reports from Facebook workers who perform content moderation, suggests that people and policies are put in place to navigate and moderate content on the web. Egregious and racist content, content that is highly profitable, proliferates because many tech platforms are interested in attracting the interests and attention of the majority in the United States, not of racialized minorities.

Challenging Race- and Gender-Neutral Narratives

These explorations of web results on the first page of a Google search also reveal the default identities that are protected on the Internet or are less susceptible to marginalization, pornification, and commodification. The research of Don Heider, the dean of Loyola University Chicago's School of Communication, and Dustin Harp, an assistant professor in the Department of Communication at the University of Texas, Arlington, shows that even though women constitute just slightly over half of Internet users, women's voices and perspectives are not as loud and do not have as much impact online as those of men. Their work demonstrates how some users of the Internet have more agency and can dominate the web, despite the utopian and optimistic view of the web as a socially equalizing and democratic force.[81] Recent research on the male gaze and pornography on the web argue that the Internet is a communications environment that privileges the male, pornographic gaze and marginalizes women as objects.[82] As with other forms of pornographic representations, pornography both structures and reinforces the domination of women, and the images of women in advertising and art are often "constructed for viewing by a male subject,"[83] reminiscent of the journalist and producer John Berger's canonical work *Ways of Seeing*, which describes this objectification in this way: "Women are depicted in a quite different way from men—not because the feminine is different from the masculine—but because the 'ideal' spectator is always assumed to be male and the image of the woman is designed to flatter him."[84]

The previous articulations of the male gaze continue to apply to other forms of advertising and media—particularly on the Internet—and the pornification of women on the web is an expression of racist and sexist hierarchies. When these images are present, White women are the

norm, and Black women are overrepresented, while Latinas are underrepresented.[85] Tracey A. Gardner characterizes the problematic characterizations of African American women in pornographic media by suggesting that "pornography capitalizes on the underlying historical myths surrounding and oppressing people of color in this country which makes it racist."[86] These characterizations translate from old media representations to new media forms. Structural inequalities of society are being reproduced on the Internet, and the quest for a race-, gender-, and class-less cyberspace could only "perpetuate and reinforce current systems of domination."[87]

More than fifteen years later, the present research corroborates these concerns. Women, particularly of color, are represented in search queries against the backdrop of a White male gaze that functions as the dominant paradigm on the Internet in the United States. The Black studies and critical Whiteness scholar George Lipsitz, of the University of California, Santa Barbara, highlights the "possessive investment in Whiteness" and the ways that the American construction of Whiteness is more "nonracial" or null. Whiteness is more than a legal abstraction formulated to conceptualize and codify notions of the "Negro," "Black Codes," or the racialization of diverse groups of African peoples under the brutality of slavery—it is an imagined and constructed community uniting ethnically diverse European Americans. Through cultural agreements about who subtly and explicitly constitutes "the other" in traditional media and entertainment such as minstrel shows, racist films and television shows produced in Hollywood, and Wild West narratives, Whiteness consolidated itself "through inscribed appeals to the solidarity of White supremacy."[88] The cultural practices of our society—which I argue include representations on the Internet—are part of the ways in which race-neutral narratives have increased investments in Whiteness. Lipsitz argues it this way:

> As long as we define social life as the sum total of conscious and deliberate individual activities, then only *individual* manifestations of personal prejudice and hostility will be seen as racist. Systemic, collective, and coordinated behavior disappears from sight. Collective exercises of group power relentlessly channeling rewards, resources, and opportunities from one group to another will not appear to be "racist" from this perspective

> because they rarely announce their intention to discriminate against individuals. But they work to construct racial identities by giving people of different races vastly different life chances.[89]

Consistent with trying to make sense of the ways that racial order is built, maintained, and made difficult to parse, Charles Mills, in his canonical work, *The Racial Contract*, put it this way:

> One could say then, as a general rule, that *white misunderstanding, misrepresentation, evasion, and self-deception on matters related to race* are among the most pervasive mental phenomena of the past few hundred years, a cognitive and moral economy psychically required for conquest, colonization and enslavement. And these phenomena are in no way *accidental*, but *prescribed* by the Racial Contract, which requires a certain schedule of structured blindness and opacities in order to establish and maintain the white polity.[90]

This, then, is a challenge, because in the face of rampant denial in Silicon Valley about the impact of its technologies on racialized people, it becomes difficult to foster an understanding and appropriate intervention into its practices. Group identity as invoked by keyword searches reveals this profound power differential that is reflected in contemporary U.S. social, political, and economic life. It underscores how much engineers have control over the mechanics of sense making on the web about complex phenomena. It begs the question that if the Internet is a tool for progress and advancement, as has been argued by many media scholars, then cui bono—to whose benefit is it, and who holds the power to shape it? Tracing these historical constructions of race and gender offline provides more information about the context in which technological objects such as commercial search engines function as an expression of a series of social, political, and economic relations—relations often obscured and normalized in technological practices, which most of Silicon Valley's leadership is unwilling to engage with or take up.[91]

Studying Google keyword searches on identity, and their results, helps further thinking about what this means in relationship to marginalized groups in the United States. I take up the communications

scholar Norman Fairclough's rationale for doing this kind of critique of the discourses that contribute to the meaning-making process as a form of "critical social science."[92] To contextualize my method and its appropriateness to my theoretical approach, I note here that scholars who work in critical race theory and Black feminism often use a qualitative method such as close reading, which provides more than numbers to explain results and which focuses instead on the material conditions on which these results are predicated.

Challenging Cybertopias

All of this leads to more discussion about ideologies that serve to stabilize and normalize the notion of commercial search, including the still-popular and ever-persistent dominant narratives about the neutrality and objectivity of the Internet itself—beyond Google and beyond utopian visions of computer software and hardware. The early cybertarian John Perry Barlow's infamous "A Declaration of the Independence of Cyberspace" argued in part, "We are creating a world that all may enter without privilege or prejudice accorded by race, economic power, military force, or station of birth. We are creating a world where anyone, anywhere may express his or her beliefs, no matter how singular, without fear of being coerced into silence or conformity."[93] Yet the web is not only an intangible space; it is also a physical space made of brick, mortar, metal trailers, electronics containing magnetic and optical media, and fiber infrastructure. It is wholly material in all of its qualities, and our experiences with it are as real as any other aspect of life. Access to it is predicated on telecommunications companies, broadband providers, and Internet service providers (ISPs). Its users live on Earth in myriad human conditions that make them anything but immune from privilege and prejudice, and human participation in the web is mediated by a host of social, political, and economic access points—both locally in the United States and globally.[94]

Since Barlow's declaration, many scholars have challenged the utopian ideals associated with the rise of the Internet and its ability to free us, such as those espoused by Barlow, linking them to neoliberal notions of individualism, personal freedom, and individual control. These linkages are important markers of the shift from public- or state-sponsored

institutions, including information institutions, as the arbiters of social freedoms to the idea that free markets, corporations, and individualized pursuits should serve as the locus of social organization. These ideas are historically rooted in notions of the universal human being, unmarked by difference, that serve as the framework for a specific tradition of thinking about *individual* pursuits of equality. Nancy Leys Stepan of Cornell University aptly describes an enduring feature of the past 270 years of liberal individualism, reinvoked by Enlightenment thinkers during the rising period of modern capitalism:

> Starting in the seventeenth century, and culminating in the writings of the new social contract philosophers of the eighteenth century, a new concept of the political individual was formulated—an abstract and innovative concept, an apparent oxymoron—the imagined *universal individual* who was the bearer of equal political rights. The genius of this concept, which opened the door to the modern polis, was that it defined at least theoretically, an individual being who could be imagined so stripped of individual substantiation and specification (his unique self), that he could stand for every man. Unmarked by the myriad specificities (e.g., of wealth, rank, education, age, sex) that make each person unique, one could imagine an abstract, non-specific individual who expressed a common psyche and political humanity.[95]

Of course, these notions have been consistently challenged, yet they still serve as the basis for beliefs in an ideal of an unmarked humanity—nonracialized, nongendered, and without class distinction—as the final goal of human transcendence. This teleology of the abstracted individual is challenged by the inevitability of such markers and the ways that the individual particularities they signal afford differential realities and struggles, as well as privileges and possibilities. Those who become "marked" by race, gender, or sexuality as other are deviations from the universal human—they are often lauded for "transcending" their markers—while others attempt to "not see color" in a failing quest for colorblindness. The pretext of universal humanity is never challenged, and the default and idealized human condition is unencumbered by racial and gender distinction. This subtext is an important part of the narrative that somehow personal liberties can be realized through

technology because of its ability to supposedly strip us of our specifics and make us equal. We know, of course, that nothing could be further from the truth. Just ask the women of #Gamergate[96] and observe the ways that racist, sexist, and homophobic comments and trolling occur every minute of every hour of every day on the web.

As I have suggested, there are many myths about the Internet, including the notion that what rises to the top of the information pile is *strictly* what is most popular as indicated by hyperlinking. Were that even true, what is most popular is not necessarily what is *most true*. It is on this basis that I contend there is work to be done to contextualize and reveal the many ways that Black women are embedded within the most popular commercial search engine—Google Search—and that this embeddedness warrants an exploration into the complexities of whether the content surfaced is a result of popularity, credibility, commerciality, or even a combination thereof. Using the flawed logic of democracy in web rankings, the outcome of the searches I conducted would suggest that both sexism and pornography are the most "popular" values on the Internet when it comes to women, especially women and girls of color. In reality, there is more to result ranking than just how we "vote" with our clicks, and various expressions of sexism and racism are related.