2009

The Google Dilemma

James Grimmelmann
Cornell Law School, james.grimmelmann@cornell.edu

Follow this and additional works at: http://scholarship.law.cornell.edu/facpub
Part of the Internet Law Commons

Recommended Citation

This Article is brought to you for free and open access by the Faculty Scholarship at Scholarship@Cornell Law: A Digital Repository. It has been accepted for inclusion in Cornell Law Faculty Publications by an authorized administrator of Scholarship@Cornell Law: A Digital Repository. For more information, please contact jmp8@cornell.edu.
JAMES GRIMMELMANN

The Google Dilemma

ABOUT THE AUTHOR: James Grimmelmann is an associate professor of law at New York Law School. This essay is adapted from talks given at the Horace Mann School on January 30, 2008 and at the New York Law School Faculty Presentation Day on April 2, 2008. Ken Liu and Frank Pasquale provided comments on earlier drafts. Shalix Sadig provided research assistance. Unless otherwise specified, all URLs were last visited November 26, 2008. This essay may be freely reused under the Creative Commons Attribution 3.0 United States license, http://creativecommons.org/licenses/by/3.0/us/.
Web search is critical to our ability to use the Internet. Whoever controls search engines has enormous influence on us all. They can shape what we read, who we listen to, and who gets heard. Whoever controls the search engines, perhaps, controls the Internet itself. Today, no one comes closer to controlling search than Google does.

In this short essay, I'll describe a few of the ways that individuals, companies, and even governments have tried to shape Google's results to serve their goals. Specifically, I'll tell the stories of five Google queries, each of which illustrates a different aspect of the problems that Google and other search engines must confront: "mongolian gerbils" shows their power to organize the Internet for us; "talentless hack" shows how their rankings depend on collective human knowledge; "jew" shows why search results can be controversial; "search king" shows the tension between automatic algorithms and human oversight; and "tiananmen" shows how deeply political a search can be. Taken together, these five stories provide a snapshot of search and the interlocking issues that search law must confront.

I. SEARCH: "MONGOLIAN GERBILS"

Suppose you wanted to learn about Mongolian gerbils. Where would you look? There are decent online sources of information on them, such as Peter Maas's The Mongolian Gerbil Website. But how would you find them? There's no obvious central authority that someone who didn't already know about gerbils would know to consult. Maas's site is at the not-easily-guessed URL http://www.petermaas.nl/gerbils/english.htm, whereas mongoliangerbils.com is an unhelpful, ad-laden page offering "Cheap Stuff for Hamsters" and "Gerbil Ringtones."

If you looked for gerbil information by clicking randomly from page to page, matters would be even worse. If you started clicking now, reading a random new web page every second, you'd get through a few thousand pages in an hour, a few million pages in a month, and a few billion pages in a century. That may sound like a lot, but it pales in comparison to the size of the Internet. The Internet isn't infinite, not even close; but it's still immense on a scale that's hard to imagine. Estimates vary, but one study claims that the world's information production in 2006 was 161 exabytes. That's over 1,000,000,000,000,000,000,000 individual bits of information, a number so large as to be a meaningless abstraction.

As more and more of this growing flood of information finds its way online, the Internet itself is becoming absurdly huge. One study claims the Internet has 168 million web sites, and Google claims to have indexed over a trillion individual web pages. Simply put, no one knows how insanely large the Internet is.

It's also utterly disorganized. Those billions of web pages aren't conveniently sorted into precise categories. People pretty much just throw stuff up online as the mood strikes them, linking to whatever they feel like, in no particular order. Every corner of the Web is equally disorganized. Your random-click quest for gerbil information is like looking for a needle in a field full of haystacks.

The reason that we think of the Internet not as a chaotic wasteland, but as a vibrant, accessible place, is that some very smart people have done an exceedingly good job of organizing it. The Internet today is usable because of search engines. A good search engine is, in effect, a card catalog for an infinite library. You say to Google, "I want information on Mongolian gerbils," click, and it points you to exactly the page you're looking for.

II. SEARCH: "TALENTLESS HACK"

In 2001, a college student named Adam Mathes noticed something interesting about Google, almost accidentally. One of his friends, Ben Brown, had started calling himself an "Internet rockstar." Mathes noticed that even though Brown was the number-one Google hit if you searched for "Internet rockstar," that phrase never appeared in the text of Brown's web page itself. It only showed up in the links other people made to Brown's page, i.e., they'd describe him as an "Internet rockstar" and link to him. Thus, Mathes reasoned, Google must figure out what a page is about by looking at the pages that link to it, since there's no way it could have learned that Ben Brown was an Internet rockstar by reading only benbrown.com.

In fact, that's exactly how Google operates. The genius of Google is that its creators didn't come up with a great organizational scheme for the web. Instead, they got everyone else to do it for them. The heart of Google's system—called PageRank—is that it looks at who links to whom online. Every time you create a link to another web page, you're in effect telling the world that the web page has on it something important, or interesting, or useful, or funny, or whatever matters to you. Your link is a kind of vote; you want people to pay more attention to that page. Very loosely put, Google goes around the web, counting links. Pages with more links pointing at them have been "voted up" more often, so they must be more

THE GOOGLE DILEMMA

important, and therefore Google displays them higher in its results. What's more, important pages—those with lots of inbound links and therefore lots of votes—are presumably also trusted and influential. Thus, Google counts their own outbound links as being "worth" more.

The math involved is at once elegantly simple and extremely hard to compute. Every page's rank potentially depends on every other page on the Internet. To run a serious search engine, you need a huge server farm to calculate all of those interdependencies. Google has over 450,000 servers; that's millions of dollars a month in electricity bills alone. Its major competitors have similarly extensive computational infrastructure. That's one reason that the search engine landscape is dominated by just a few companies—Google, Microsoft, and Yahoo! together account for four out of every five searches that Americans run online. Of them, Google is the undisputed champion, with an absolute majority of all searches. And since Americans run something like ten billion searches a month, even Google's 60% of that is still a very big number.

What Mathes realized was that Google used links not just to learn how important a page was, but also what it was about. Each link to benbrown.com using the magic phrase was saying two things: both "benbrown.com is important," and "benbrown.com is about an Internet rockstar." The more pages that link using a given phrase, the more Google will think that the phrase accurately describes the page. But that would mean that Google could be tricked; all you would have to do is get a lot of friends to create links using particular words. Thus, Mathes wrote a blog post asking everyone to link to the home page of another friend, Andy Pressman, using the phrase "talentless hack." Within a few weeks, Pressman had zoomed to the number-one hit if you searched for "talentless hack." Mathes called the technique Googlebombing.

It started as a joke, but Googlebombing has been used to send some serious messages. So many people use search engines, and their results appear to be so sophisticated, that any message you can sneak through in the form of a Googlebomb has at least a veneer of legitimacy. Thus, the most famous Googlebomb of all time is probably the one many Democrats launched in 2003 to link to George W. Bush's official biography page with the phrase "miserable failure." This is a significant new form of politicking. Land a bomb like this and you can convince the world that

15. Id.
16. Id.
17. Mathes, supra note 7.
Google agrees with your position. A successful Googlebomb doesn't just reflect the consensus of web users; it can help construct that consensus.

III. SEARCH: "JEW"

Still sounding a bit frivolous? Consider a more serious example: In 2004, the number-one Google hit for a search on “jew” was jewwatch.com, which describes itself as “An Oasis of News for Americans Who Presently Endure the Hateful Censorship of Zionist Occupation” and features a wide assortment of paranoid antisemitic content. Upset at this placement, a Jewish activist asked people around the web to link the word “jew” instead to a Wikipedia article. This touched off a counter-Googlebomb as some neo-Nazi sites tried to point the term back to Jew Watch, but ultimately attempts to make “jew” point to the comparatively neutral Wikipedia page was successful.

There'd been Googlebombs before and there'd be Googlebombs after, but this one did something that no other had: it drew a response from Google. At the top of the Google results page for “jew” is a box reading, “Offensive Search Results. We're disturbed about these results as well.” The same campaign that produced the Jew Googlebomb also included a petition to have Google remove Jew Watch entirely, so that no Google search—and certainly not on the term “jew”—would ever return it. The activists certainly had a point. Google could easily have changed their software so no trace of Jew Watch remained in its results pages, no indication that anything other than the usual process of looking for relevant results had ever taken place. But that’s not what Google did. Instead, it left the results alone—that is, left it up to the back-and-forth push-pull struggle of the Googleboms and counter-bombs; may he who gets the most links win. Google was insistent that it wouldn't intervene in the results. The reason is a feature of the company's corporate culture that goes even deeper than its “Don't be evil” motto. Google deeply believes in throwing huge automated processes at a problem. Contrast that attitude with Yahoo!, whose hierarchical index of the Internet is maintained by editors who catalogue and


25. See Brandon, supra note 22.

26. Id.
categorize web sites by hand. That's not how Google rolls. Google just feeds the Internet into its server farm and waits for a result to emerge, unsullied by mere mortals.

Thus, the “Offensive Search Results” page that Google put up to explain why “jew” takes you to Jew Watch is Google’s way of saying “don’t blame us, the computers did it.” It’s a point of pride at Google that the programmers stay out of politics and keep their personal views out of the search engine: “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.”

Is that really true? Is it really the case that search engine results are purely automated, impersonal things that don’t reflect anyone’s opinion at all? In one sense, passing the buck and saying “don’t blame us, the computers did it” is an uncomfortable position for any computer programmer to take. Who, after all, gave the computer its instructions? The programmer did. Everything that Google’s automated ranking system does, it does because Google programmers told it to. A computer is just a glorified abacus; it does what you tell it to.

Google’s programmers may not have specifically told its computers to rank Jew Watch highly and to call George Bush a miserable failure. But they did feed into the computers a list of criteria—each link from a weblog is worth so many points, pages less than a week old get a 10% newness bonus, whatever—and those criteria lead directly to the conclusion that Andy Pressman is a talentless hack. Google could have changed those criteria, and if they had, he’d be a talented hack or a miserable failure or an Internet rockstar.

And, of course, the “beliefs and preferences” of Google’s employees and users do enter into its search results in another sense. The employees prefer that Google return results that the users believe to be useful. They optimize their algorithms all the time to make the results more relevant to their users’ questions. They don’t want you to get Jew Watch if you search for “mongolian gerbils.”

This isn’t to say that what Google is doing is right or wrong, just that the distinction it makes between objective “automatic” results from the computer and subjective “beliefs and preferences” doesn’t really hold up. This tension is a sign that Google and its employees are uncomfortable with the massive power they have to shape online opinion. They’re searching, as it were, for principled ways to use that power responsibly.

Call this problem the Google Dilemma. Google has the ability to shape its search results to prefer some web sites over others. Indeed, whatever choice it makes—alphabetical, by link count, by politics, by whatever—will result in some

29. Id.
sites being on the first page of results and others not. So you're Google; what choices do you make? Do you make George Bush a mongolian gerbil? Presumably not. Do you make Andy Pressman a talentless hack? Perhaps; it seems harmless enough. What do you do with “jew”? Harder to say.

IV. SEARCH: “SEARCH KING”

Google isn’t the only one facing the Google Dilemma. Lawyers, judges, and legislators deal with it, too. There have been dozens of lawsuits against search engines. Each of those lawsuits requires the court hearing it to confront the Dilemma. In order to say that a search engine did something wrong, there must be a plausible alternative—something it could have done that was right. You can’t say that a search engine was irresponsible unless you have a baseline of what would be responsible.

Consider my favorite search engine lawsuit of all time. An Oklahoma web company called Search King had a web site that was highly ranked for certain queries on Google. It had “PageRank 8”: on Google’s 0–10 scale of how important a page is, Search King was an 8. That high ranking meant thousands of people came to Search King and its clients—local Oklahoma businesses like florists and car salesmen.

Then, one day in late summer of 2002, Google utterly destroyed Search King’s business. Search King went from PageRank 8 to PageRank 4 overnight. In the Google economy, that kind of drop is a disaster. Suddenly, instead of showing up high on the first page of Google results, Search King and its clients were lucky to show up in the first few pages. For a local business dependent on Internet orders, that’s the kiss of death. Think about sending flowers to someone in Oklahoma City, if you’re not a local. Since you don’t know any florists there, you’re likely either to go with a national chain or to look for a florist through a search engine. If Bob’s Flowers doesn’t show up when you search, it might as well not exist. Too bad for Bob.

Businesses had gone up and down in Google’s rankings before, but Search King made history by being the first to sue Google over it. Search King claimed, in essence, that Google was libeling it. Demoting Search King to PageRank 4 was the equivalent of telling Google’s users that Search King was unimportant or a bad source of information. According to Search King, what Google had done was the equivalent of standing outside of Bob’s Flowers saying, “Don’t shop here. They’re terrible. You don’t want to know what they did to my sister’s petunias. And that ax murderer they have working in the back room? Tsk. Tsk.” The way Search King saw it, Google’s computers had calculated that searchking.com was PageRank 8, but then


32. See Grimmelmann, supra note 30, at 15–51 (taxonomizing search engine lawsuits).

some evil mastermind at Google with a grudge against Search King had gone in and changed the number to PageRank 4.14

One might expect that Google’s reply when confronted about “search king” would be the same reply it gave when confronted about “jew”: “Don’t blame us, the computers did it.” Instead, Google gave an intriguingly different answer. Buried beneath the legalese, Google said something more like, “We’re not admitting to anything, but if by some chance we were to have hand-tweaked the results a bit to punish Search King, then we would have had a good reason to.”

Consider the possibility that Search King wasn’t quite the innocent Internet entrepreneur it made itself out to be. Some observers have claimed that Search King was in fact running a large and cynical version of a Googlebomb called a “link farm.” A link farm operator has decided that getting thousands of people to link to her to raise her PageRank is just too much work. Instead, she creates those links herself. They’re designed to look enough like real web content to trick a search engine, but consist mostly of links to other pages in the link farm itself. It’s a web form of spam. If she creates enough fake links to look as though tons of people have suddenly decided this, then her previously-obscure site is now the world’s foremost authority on mongolian gerbils. Search King’s link farm had its clients link to each other. Bob’s Flowers would link to Joe’s Used Cars, and vice-versa, even though they had no connection whatsoever besides both being clients of Search King. They were paying Search King, in essence, to help them conspire to boost their PageRanks.

Web users, on the other hand, are generally unhappy if their searches lead them to link farms: the informational food they grow is intended for search engine spiders, not for people. When you search for a florist in Oklahoma City, you want to see the florists that other web users liked. You probably don’t care very much whether the florists were good at creating fake web pages or at exchanging irrelevant links. Search engines take this preference to heart and try to keep link farms out of their results. Google’s guidelines for web site creators specifically prohibit link farming and link exchanges of the sort Search King was engaging in, and when Google realizes someone’s been running a link farm, it retaliates and demotes the link farm in its rankings.37

As it turned out, Google won the Search King lawsuit. The court held that Google’s choice of how to rank its results was a form of speech protected by the First Amendment.38 Other courts, facing similar lawsuits, have uniformly sided with the

search engines on similar grounds.\textsuperscript{39} This seems like the right result; if search engines didn't have a fairly free hand to demote sites in their rankings, the Internet would be completely overrun with junk from link farms. Still, the First Amendment reasoning is worrisome. If taken at face value, it would suggest that the First Amendment provides an absolute shield for search engines to re-rank sites at will, for any reason at all, even a deliberately malicious reason. What's more, it would suggest that the government is powerless to make the search engines stop, even in cases where the re-ranking was obviously malicious and dishonest.\textsuperscript{40}

V. SEARCH: “TIANANMEN”

Evidence from around the world, however, suggests that governments are far from powerless when it comes to controlling search engines. In Europe, for example, many countries have strong laws against hate speech. The German criminal code bans “Volksverhetzung,” which translates to “incitement of the people” or “agitation of the populace.”\textsuperscript{41} Specifically, it's illegal to incite hatred against segments of the population or to call for violence against minorities. In the United States, these forms of hate speech are usually protected from government restriction by the First Amendment, but the legacy of Nazism and the Holocaust has made many European countries very nervous about ethnic hatred.

The result is that American companies—coming from a country with a very robust tradition of anything-goes free speech—are often surprised when they encounter European speech-restricting laws that would be unconstitutional back home. American Internet companies—which have also at times assumed that the Internet is somehow beyond any government’s power to regulate—are often doubly surprised when European governments tell them to clean up their act.\textsuperscript{42} In 2000, a French court ordered Yahoo! to remove from its auction site any auction listings for Nazi memorabilia.\textsuperscript{43} Yahoo! fought the order for a while, but then realized it would rather comply than shut down its entire French operation.\textsuperscript{44} It was a precedent that most other multinational Internet companies have followed.\textsuperscript{45} The result is that most of their European sites are, let us be honest here, censored in various ways.\textsuperscript{46}


\textsuperscript{40} But see Frank Pasquale, Asterisk Revisited: Debating a Right of Reply on Search Results, 3 J. BUS. & TECH. L. 61, 83–84 (2008) (claiming First Amendment does not prevent regulation of such “speech”).


\textsuperscript{43} See Yahoo!, Inc. v. La Ligue Contre Le Racisme Et l’Antisemitisme, 169 F. Supp. 2d 1181, 1184–85 (N.D. Cal. 2001), rev’d, 379 F.3d 1120 (9th Cir. 2004).

\textsuperscript{44} Goldsmith & Wu, supra note 42, at 5.

\textsuperscript{45} Id. at 8.

\textsuperscript{46} See Joel Reidenberg, Yahoo and Democracy on the Internet, 43 Jurimetrics J. 261 (2002).
THE GOOGLE DILEMMA

Thus, turning back to search engines, you get different results in different countries. Let's have a look at a familiar search from earlier. If you type “jew” into Google's German version, google.de, guess what site doesn't show up at all? JewWatch.47 Perhaps this is just a coincidence, a fluke of the algorithm? Actually no. If you scroll down to the bottom of this results page, you find another very interesting notice. It reads, “Aus Rechtsgründen hat Google 3 Ergebnis(se) von dieser Seite entfernt,” which translates to “For legal reasons, Google has removed 3 result(s) from this page.”

Google isn't kidding. The results really have been removed. Even a search on “jewwatch.com” doesn't bring it back as a result.48 As far as Google is concerned, in Germany, JewWatch.com doesn't exist.49 The very thing Google said it wouldn't do in response to a public petition, the very thing that Search King accused Google of doing, ... Google does when the German government says to.

Here's a perhaps more disturbing example. Compare a google.com image search on “tiananmen” with the same image search performed on google.cn, the Chinese version of Google. Below is the U.S. version of that search—prominently featuring the famous photo of an anonymous nonviolent resister standing up to a line of tanks.

Contrast that to the Chinese version of that search—principally photographs of the Tiananmen itself, the Gate of Heavenly Peace that gives the square its name.

Now, to be fair to Google, this page does display a version of that same disclaimer we just saw: “据当地法律法规和政策，部分搜索结果未予显示,” which translates, according to Google, to the same general explanation we saw on the German results for “jew”: ‘According to local laws and regulations and policies, some search results are not displayed.’\[50\] Thus, everything’s aboveboard in the sense that there’s disclosure.

Still, this practice leaves a bad taste in a lot of people’s mouths. Reasonable people disagree about hate speech; it seems plausible that you could have a well-functioning democracy that does or doesn’t tolerate racial incitements to violence. But when you start censoring information about democratic protests (Tiananmen Square), or about minority religions (Tibetan Buddhism and Falun Gong), that crosses a line that a lot of people who think about human rights, political freedom, and democracy are concerned about.\[51\] Nothing that Google, Microsoft, and Yahoo! have done has drawn as much criticism as their decisions to do business in China on terms dictated by the Chinese government.

If the Internet is a gigantic library, and search engines are its card catalog, then Google has let the Chinese government throw out the cards corresponding to books it doesn’t like. There may be sites with full and honest discussion of the June 4, 1989, crackdown accessible on the Internet from China. But when those sites aren’t visible in search engines, we’re back to our field full of haystacks. The truth about Tiananmen Square, like the truth about Mongolian gerbils, may be out there. It’s just not on Google.

部分搜索结果未予显示
THE GOOGLE DILEMMA

Or perhaps it is. To many Chinese, the iconic image of Tiananmen Square comes not from June 4, 1989, but from October 1, 1949, when Mao Zedong proclaimed the founding of the People's Republic from the Gate. To them, the google.com association of “tiananmen” with protesters and tanks might seem like the result of a gigantic Googlebomb perpetrated by the Western world—which, after all, had the advantage of getting online more quickly. They'd say that google.cn tells more of the truth about Tiananmen than google.com does. There are many (both in China and the West) who'd disagree, but I hope at this point everyone would at least agree on one thing: Google has a choice to make, one that matters a lot.

VI. CONCLUSION

Google has the power to make the truth accessible. It’s chosen to use its power to help you learn about “mongolian gerbils” and to say that Andy Pressman is a “talentless hack.” Its thoughts about “jew” have changed over time, as has its opinion about “search king.” And it’s deliberately chosen not to tell Chinese users everything it knows about “tiananmen.” We're entitled to ask what makes these queries different from each other, and whether Google made the right choices about them.

To review: We rely on search engines’ rankings to make the Internet useful. Search engines produce those rankings by applying sophisticated computer algorithms to the web pages made by ordinary users. People therefore create links to try to change search engines’ rankings. If that doesn't work, they ask the search engines to change the results, or ask government to demand that search engines do so. Search engines pride themselves on being automated, except when they aren’t. Search results matter: to culture, to business, and to society. Every decision about search, and every lawsuit about search, has these inescapably political questions at its heart. That is Google's dilemma, and ours.

52. See David Barboza, Chameleon Mao, the Face of Tiananmen Square, N.Y. TIMES, May 28, 2006, § 4, at 3.