

## The Troubling Trend Toward Trade Secret-Protected Ranking Systems

Frank Pasquale<sup>1</sup> (*Rough draft of Apr. 2009: Please do not cite or quote without permission.*)

The whole of life appears as a vast accumulation of commodities and spectacles, of things wrapped in images and images sold as things. But how are these images and things organized, and what role do they call for anyone and everyone to adopt towards them? . . .

Everything has value only when ranked against another; everyone has value only when ranked against another. . . The real world appears as a video arcadia divided into many and varied games. Work is a rat race. Politics is a horse race. The economy is a casino. . . . Games are no longer a pastime, outside or alongside of life. They are now the very form of life, and death, and time, itself.

--Mackenzie Wark, *Gamer Theory*

### Introduction

Trade secrecy law has focused on injecting "commercial ethics" into markets. One of its central goals is to avoid wasteful or unfair competition. For example, rather than triple-locking every vault or biometrically assessing the credentials of all encountered, a trade secret owner can bind employees, customers, and others not to misappropriate or disclose valuable processes and products.

Yet trade secrecy can also create unfair or wasteful competitions. Some scholars have commented on secrecy as an impediment to incremental innovation, and have promoted patent rights as a better alternative. A smaller group has addressed the negative consequences of trade secrecy for society; for example, a firm might prevent health and safety regulators from adequately investigating its practices or products by using trade secrecy protections to deflect investigations. This chapter will focus on a subset of cases where trade secrecy can undermine the public good: namely, the competitions sparked by search engine ranking and credit scoring. In both of these fields, opaque methods of ranking and rating people and websites make it difficult for those who feel (and quite possibly are) wronged to press their case.

It may seem odd to characterize search or credit scoring as a competition; the former is often thought of as a neutral map of the web, and the latter an objective evaluation of an individual's creditworthiness. However, both social practices unleash pressures on individuals and corporations to conform their behavior to a certain set of norms. Were the norms more transparent, or if there were

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<sup>1</sup> Professor of Law, Seton Hall Law School; Visiting Professor of Law, Yale Law School (Spring 2009). I am very grateful to participants at workshops at Fordham Law School and the Annenberg School of Communications at the University of Pennsylvania for their insightful comments on and critiques of this work, and to Stephen Gikow, Joseph Mercadante, Dan Smith, and Sonya Berenfeld for superb research assistance.

more entities providing optimal search or credit scoring services, it would be plausible to leave their contestation to the market and civil society. However, the unique primacy of dominant search engines and credit bureaus in their respective fields make them *de facto* sovereigns over important swathes of social life. Legal challenges to their power have emerged in some cases, and both public officials and interest groups have begun investigating the possibility that they are acting inconsistently with relevant law or their stated missions. But these challenges and investigations have consistently been undermined by the secrecy at the core of the companies' operations.

Such secrecy has also compromised inquiries into the validity of factual determinations made by voting machines and intoxication-detection instruments. Both judicial decisions and secondary literature have investigated the degree of secrecy needed in these fields in order to balance the proprietary rights of software owners and the right of the public to know exactly how given actions have been interpreted by machines. Though voting and intoxication detection are more exact sciences than credit scoring or search engine ranking, proposals for the regulation of the former can help shape litigation over the latter.<sup>2</sup> This chapter focuses on two possible administrative solutions to the problems raised by opacity in search engine ranking and credit scoring methods.

First, challenged public uses of trade secret protected software have sometimes resulted in the appointment of a special master who can analyze the conduct at issue without revealing the trade secrets embedded in it. This article proposes an evolution of the special master from an occasional adjunct to courts to a permanent official presence at a relevant agency where its expertise is also needed. In the case of search engines, the Federal Trade Commission's commitment to assuring a separation between paid and editorial content can only be effectively enforced if some official entity can on occasion audit and fully understand the ranking decisions of search engines. A trusted institution in this field would help assure the integrity of online advertising, enable quicker resolution of cases that implicate trade secret protected methods, and potentially help the owners of trade secrets themselves by centralizing analysis of their methods rather than dispersing it among hundreds of individual courts and litigants. The pioneering work of David Levine and Danielle Citron, which addresses qualified transparency in the context of public institutions using proprietary and trade secret-protected methods, can be applied to some features of search engine disputes. Mary Lyndon's analysis of the EPA's regulation of entities with trade secret protected products and services should also inform the actions of the FTC in the future if its consumer protection division begins auditing search engines more carefully.<sup>3</sup> Trusted institutions can provide both policymakers and courts with information essential to the resolution of search-centered disputes.

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<sup>2</sup> For a characterization of search engines as "cultural voting machines," see Frank Pasquale, *Internet Nondiscrimination Policies for Competition Online*, Testimony before the U.S. House Judiciary Committee's Task Force on Competition Policy, July 15, 2008.

<sup>3</sup> Mary L. Lyndon, *Information Economics and Chemical Toxicity: Designing Laws to Produce and Use Data*, 87 Mich. L. Rev. 1795 (1989); see also Dennis Hirsch on the environmental metaphor applying to privacy theory generally, given the pervasiveness of surveillance-based business models with pervasive externalities. Hirsch, *Protecting the Inner Environment*, 41 GEORGIA L. REV. 1 (2006).

While such institutions may also be helpful in the context of credit scoring, extant regulatory infrastructure in the financial sector suggests an alternative approach. After the subprime debacle, the social importance of credit scoring has become more obvious than ever. Nevertheless, the industry remains highly opaque, with scored individuals unable to determine the consequences of late payments, changes in location, or other decisions. Several disturbing reports have alleged racial, geographic, and other inappropriate influences on credit scores. Given these issues, the US government should consider supporting an alternative credit scoring system that would make more transparent the penalties and rewards for bad and good management of debt. The government could reward financial institutions for adopting the new system. In the long run, it could play a role in the credit scoring system parallel to the role that Medicare plays in the health system: guaranteeing some baseline of transparency in pricing and evaluation for other parties' actions.

Presently, those competing for salience on search results and desirable credit ratings are playing games whose rules are far from transparent. The introduction of trusted institutions in the search industry, and a whole new game in credit rating, would bring a much-needed dose of accountability to each field. Part II below describes the present problems in the search field, and how trusted institutions could speed their resolution. Part III entertains the possibility of similar institutions in the credit field, and then sketches a government-sponsored alternative to present consumer credit scoring. Doctors' successful resistance to physician-rating schemes provides one useful precedent for such a development. Part IV concludes with some theoretical reflections on the optimum degree of transparency for the rationales of reward and punishment developed by leading companies in the search and credit markets.

## **II. Search, Secrecy, and Accountability**

### *A. Problems Posed by Secret Search Engine Algorithms*

Many worry about search engines' growing power.<sup>4</sup> How are worldviews being biased by them?<sup>5</sup> Do search engines have an interest in getting certain information prioritized or occluded? A recent news article on Baidu illuminates how an unscrupulous search engine can exert a great deal of power once it attains dominance. Baidu has over 60% of the market in China, and can make or break an online business. Some allege that Baidu uses that power to force businesses to buy prominence on its results:

Salespeople working for Baidu drop sites from results to bully companies into buying sponsored links, say some who have been approached. Former clients say their rankings fall precipitously after they stop buying search-related ads from Baidu. At least one Baidu salesperson

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<sup>4</sup> See Andrew Sullivan, *The Black Box of Google*, Andrew Sullivan's The Daily Dish Blog, [http://andrewsullivan.theatlantic.com/the\\_daily\\_dish/2008/12/bizarro-google.html](http://andrewsullivan.theatlantic.com/the_daily_dish/2008/12/bizarro-google.html) (Dec. 1, 2008 15:26 EST) (citing Jeffrey Rosen and Frank Pasquale).

<sup>5</sup> Consider Philipp Lenssen, *Google's Opinion Operator, Circa 2009*, Google Blogoscoped Blog, <http://blogoscoped.com/archive/2006-09-21-n55.html> (Sept. 21, 2006); Frank Pasquale on Google's leading "net neutrality" results in *Internet Nondiscrimination Principles*, 2008 U. Chi. L. Forum.

acknowledges they're right. "The key is whether a company buys Baidu's sponsored links," says Zhong Hongjun, a salesman from a company that represents Baidu in the central city of Wuhan. "If they don't, the search engine won't find them. If they do, they'll be in there."<sup>6</sup>

These may seem like speculative worries in the US, where Google's "Don't Be Evil" motto translates into public assurances that the company would never do such a thing to the entities it indexes. However, there have been several notable disputes about the company's ranking policies, and at least two have been litigated in cases resulting in published opinions.<sup>7</sup> A book on Google by John Battelle gives some concrete examples of complaints from those disgruntled with low or falling rankings.<sup>8</sup> The secrecy of search ranking algorithms has made full a conclusive and informative resolution of such disputes impossible.

Neither markets nor common law are likely to hold search engines or credit scorers accountable under present circumstances. Oftentimes these intermediaries operate at the hub of multiple-sided markets. For example, in a given situation where a Yahoo user is searching for flowers nearby, Yahoo's search engine might unfairly block one florist for illicit "search engine manipulation" (as defined by a trade secret protected algorithm), but still deliver several relevant results. The searcher is unlikely ever to know of the blockage, and advertisers that benefit from increased custom may be pleased by it. Though early search engine prototypes that rested entirely on paid ads were quickly routed by more objective sources of information, few are likely to detect or mind subtle manipulation now.

The legitimate reasons for search engines' general emphasis on keeping ranking algorithms confidential throw some light on the divergent rationales for adopting patent or trade secrecy protection for any given instance of intellectual property. While Google's foundational technology in search (the PageRank method) is patented, its continual tweaking of search is usually not.<sup>9</sup> Keeping the search algorithm private is the key to defeating gamers who might propagate link farms or other disfavored methods to gain salience in search results.

Given the opacity guaranteed by trade secrecy protections, it is difficult to speak with certainty about

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<sup>6</sup> Chi-Chu Tschang, *The Squeeze at China's Baidu*, BUSINESSWEEK, 2009, at [http://www.businessweek.com/magazine/content/09\\_02/b4115021710265.htm](http://www.businessweek.com/magazine/content/09_02/b4115021710265.htm).

<sup>7</sup> *Kinderstart; SearchKing*.

<sup>8</sup> See John Battelle, *The Search: How Google and Its Rivals Rewrote the Rules of Business and Transformed Our Culture*, 2005 (available for purchase at <http://www.amazon.com/Search-Rewrote-Business-Transformed-Culture/dp/1591840880>)

<sup>9</sup> Saul Hansell, *Google Keeps Tweaking its Search Engine*, N.Y. TIMES, at <http://www.nytimes.com/2007/06/03/business/yourmoney/03google.html> ("[Amit] Singhal is the master of what Google calls its 'ranking algorithm' — the formulas that decide which Web pages best answer each user's question. It is a crucial part of Google's inner sanctum, a department called 'search quality' that the company treats like a state secret. Google rarely allows outsiders to visit the unit, and it has been cautious about allowing Mr. Singhal to speak with the news media about the magical, mathematical brew inside the millions of black boxes that power its search engine.").

exactly how search engines order organic (i.e., non-paid) results.<sup>10</sup> The number of pages linking to a given page is important, as is the number of pages linking to the linking pages, recursively. But there are also several incidental indicators of a page's relevance (and relevance-granting authority), such as its policies on selling links, its age, and the frequency of fresh content on it. Search engine optimizers are in business to assure that those qualities are enhanced so as to increase the salience of a web page.

Search engineers tend to divide the SEO business into "good guys" and "bad guys," often calling the former "white hat SEO" and the latter "black hat SEO."<sup>11</sup> Some degree of transparency regarding the search engine's algorithm is required in order to permit white hat SEO, and these rules are generally agreed upon as practices that "make the web better;" i.e., have fresh content, don't sell links, don't "stuff metatags" with extraneous information just to get attention. However, if there were complete transparency, "black hat" SEO's could elevate the importance of their clients' sites--and even if this were only done temporarily, the resulting churn and chaos could severely reduce the utility of search results. (On a more mundane level, this is a good reason for getting a new email account every few years; as an address leaks out to more and more spammers, it attracts more junk mail.) Moreover, a search engine's competitors could use the trade secrets to enhance its own services.

This secrecy has led to a growing gray zone of internet practices with uncertain effect on sites' rankings. Consider some of the distinctions below, based on current literature on search engine optimization:

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<sup>10</sup> Id. (The "system for ranking pages . . . involves more than 200 types of information, or what Google calls 'signals.' PageRank is but one signal. Some signals are on Web pages — like words, links, images and so on. Some are drawn from the history of how pages have changed over time. Some signals are data patterns uncovered in the trillions of searches that Google has handled over the years.").

<sup>11</sup> Elizabeth van Couvering, *Is Relevance Relevant?*, at <http://jcmc.indiana.edu/vol12/issue3/vancouvering.html> (search engineers' "animosity towards the . . . guerilla fighters of spamming and hacking, is more direct" than their hostility toward direct business competitors).

<b>White Hat (acceptable)</b>	<b>Gray Area (unclear how these are treated)</b>	<b>Black Hat (unacceptable; can lead to down-ranking in Google results or even the "Google Death Penalty" of De-Indexing)</b>
Asking blogs you like to link to you, or engaging in reciprocal linking between your site and other sites in a legitimate dialogue.	Paying a blogger or site to link to your blog in order to boost search results and not just to increase traffic.	Creating a "link farm" of spam blogs (splogs) to link to you, or linking between multiple sites you created (known as link farms) to boost search results
Running human-conducted tests of search inquiries with permission from the search engine.	Doing a few queries to do elementary reverse engineering. (This may not be permitted under the Terms of Service).	Using computer programs to send automated search queries to gauge the page rank generated from various search terms (Terms of Service prohibit this)
Creating non-intentional duplicate content (through printer-friendly versions, pages aimed at mobile devices, etc.)	Intentionally creating permitted duplicate content to boost search results	Intentionally creating unnecessary duplicate content on many pages and domains to boost results
Generating a coherent site with original and informative material aimed at the user	Creating content or additional pages that walk the line between useful information and "doorway pages"	Creating "doorway pages" that are geared towards popular keywords but that redirect to a largely unrelated main site
Targeting appreciative audience	Putting random references to salacious or celebrity topics on a blog primarily devoted to discussing current affairs	Distracting involuntary audience with completely misleading indexed content (akin to "initial interest confusion" in internet trademark law)
Influencing search engine by making pages easier to	Creating "hidden pages" when there may be a	Using "hidden pages" to show a misleading page to

scan by automated bots	logical reason to show one page to search engine bots and another page to users who type in the page's URL	search engine bots scanning a page, and another page to users who type in the page's URL
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As these practices show, search engines are referees in the millions of contests for attention that take place on the web each day. There are hundreds of entities that want to be the top result in response to a query like "sneakers," "top restaurant in New York City," or "best employer to work for." The top and right hand sides of many search engine pages are open for paid placement; but even there the highest bidder may not get a prime spot because a good search engine strives to keep even these sections very relevant to searchers.<sup>12</sup> The organic results are determined by search engines' proprietary algorithms, and preliminary evidence indicates that searchers (and particularly educated searchers) concentrate attention there. Businesses can grow reliant on good Google rankings as a way of attracting and keeping customers.

For example, John Battelle tells the story of the owner of 2bigfeet.com (a seller of large-sized men's shoes), whose site was knocked off the first page of Google's results for terms like "big shoes" by a sudden algorithm shift in November, 2003, right before the Christmas shopping season. Moncrieff attempted to contact Google several times, but said he "never got a response." Google claimed that Moncrieff may have hired a search engine optimizer who ran afoul of its rules--but it would not say precisely what those rules were.<sup>13</sup> Like the IRS's unwillingness to disclose all of its "audit flags," the company did not want to permit manipulators to gain too great an understanding of how it detected their tactics.

So far claims like Moncrieff's have not been fully examined in the judicial system, largely because Google has successfully deflected them by claiming that its search results embody opinions protected by the First Amendment. Several articles have questioned whether blanket First Amendment protection covers all search engine actions, and that conclusion has not yet been embraced on the

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<sup>12</sup> Greg Lastowka, *Google's Law*; Eric Goldman, *Deregulating Relevancy*.

<sup>13</sup> Battelle, *supra* n. \*. See also Joe Nocera, *Stuck in Google's Doghouse*, N.Y. Times, Sept. 13, 2008 ("In the summer of 2006 . . . Google pulled the rug out from under [web business owner Dan Savage, who had some to rely on its referrals to his page, Sourcetool]. . . . When Mr. Savage asked Google executives what the problem was, he was told that Sourcetool's "landing page quality" was low. Google had recently changed the algorithm for choosing advertisements for prominent positions on Google search pages, and Mr. Savage's site had been identified as one that didn't meet the algorithm's new standards. . . . Although the company never told Mr. Savage what, precisely, was wrong with his landing page quality, it offered some suggestions for improvement, including running fewer AdSense ads and manually typing in the addresses and phone numbers of the 600,000 companies in his directory, even though their Web sites were just a click away. At a cost of several hundred thousand dollars, he made some of the changes Google suggested. No improvement."). Savage has now filed suit against Google on an antitrust theory. *Tradecomet v. Google Complaint*.

appellate level in the United States.<sup>14</sup> The FTC's guidance to search engines promoting the clear separation of organic and paid results suggests that search engines' First Amendment shield is not insurmountable here.<sup>15</sup> While a creative or opportunistic litigant could conceivably advance a First Amendment right to promote products or positions without indicating that the promotion has been paid for, such a challenge has not compromised false advertising law, and even political speakers have been required to reveal their funding sources.<sup>16</sup>

In order for the FTC to determine whether its guidance is actually being followed, it will need to develop sophisticated methods of understanding how organic results are determined. Without such an understanding, it will be impossible to distinguish between paid and organic content. This monitoring needs to happen in real-time, rather than after a dispute arises, for many reasons. First, data retention may be spotty.<sup>17</sup> Second, the history of regulation of high technology industries indicates that government lag in understanding how critical infrastructure functions can effectively neuter even a strong regulatory regime. Just as Danny Weitzner has called for an "independent panel of technical, legal and business experts to help [the FTC] review, on an ongoing basis, the privacy practices of Google,"<sup>18</sup> the agency needs to develop the capacity for understanding the search ranking practices of Google and its competitors. This capacity could, in turn, enable litigants to submit focused

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<sup>14</sup> Pasquale, *Rankings, Reductionism, and Responsibility*, CLEVELAND ST. L. REV. (2006); Pasquale and Bracha, *Federal Search Commission*, CORNELL L. REV. (2008); Chandler, *A Right to Reach an Audience: An Approach to Intermediary Bias on the Internet*, 35 Hofstra L Rev 1095, 1109 (2007)

<sup>15</sup> See Bracha & Pasquale, Federal Search Commission (discussing the implications of Ellen Goodman's work on "stealth marketing" for search engines, and how the Hipsley Letter of 2002 inadequately addressed such concerns in the industry.).

<sup>16</sup> In early cases alleging an array of unfair competition and business torts claims against search engines, the First Amendment has proven a formidable shield against liability. Search engines characterize their results as opinion, and lower courts have been reluctant to penalize them for these forms of expression. In other work, I have described why this First Amendment barrier to accountability should not be insurmountable. Both search engines and credit bureaus take advantage of a web of governmental immunities that they would be loath to surrender. *FAIR v. Rumsfeld* and cognate cases stand for the proposition that such immunities can be conditioned on agreement to certain conditions on an entity's speech. Whatever the federal government's will, it is within its power to regulate ranking and rating entities in some way when they are so deeply dependent on governmental action. Frank Pasquale, *Asterisk Revisited*, J. BUSINESS & TECH. LAW (2008).

<sup>17</sup> Compare Sedona Conference on spoliation and e-discovery best practices with Virginia Stoddard on replicability of computer based research.

<sup>18</sup> At <http://people.w3.org/~djweitzner/blog/?p=95> ("In the 1990s, the FTC under Christine Varney's leadership pushed operators of commercial websites to post policies stating how they handle personal information. That was an innovative idea at the time, but the power of personal information processing has swamped the ability of a static statement to capture the privacy impact of sophisticated services, and the level of generality at which these policies tend to be written often obscure the real privacy impact of the practices described. It's time for regulators to take the next step and assure that both individuals and policy makers have information they need.").

queries to a nonbiased third party that could quickly give critical information to courts now mired in discovery disputes in search-related lawsuits.<sup>19</sup>

Some recent cases have demonstrated the weakness of the normal protective order process in litigation involving search engines' trade secrets. In *Viacom vs. YouTube*, the plaintiff's claim that YouTube could more effectively filter allegedly infringing videos depended on its discovering the nature and extent of the sorting done by the defendant. The court decided that Viacom did not deserve access to the relevant source code, even under a protective order:

Plaintiffs seek production of the search code to support their claim that "Defendants have purposefully designed or modified the tool to facilitate the location of infringing content." However, the predicate for that proposition is that the "tool" treats infringing material differently from innocent material, and plaintiffs offer no evidence that the search function can discriminate between infringing and non-infringing videos.

. . . Plaintiffs argue that the best way to determine whether those denials are true is to compel production and examination of the search code. Nevertheless, YouTube and Google should not be made to place this vital asset in hazard merely to allay speculation. A plausible showing that YouTube and Google's denials are false, and that the search function can and has been used to discriminate in favor of infringing content, should be required before disclosure of so valuable and vulnerable an asset is compelled.<sup>20</sup>

Like the court here, many writers have celebrated Google's innovation.<sup>21</sup> The company rolls out new, free services regularly, and the design elegance of Gmail or the engineering brilliance of Chrome is easy

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<sup>19</sup> But see David S. Levine's skepticism about such state-sponsored trusted entities, given the experience of those challenging Diebold in North Carolina ("the notion that a government-controlled or designated entity could adequately protect the interests of the general public is dubious, and would turn on many variables that might undermine the third party's ability to operate in a completely public-oriented fashion. Indeed, where a state agency effectively nullifies a law designed to protect the public's interest, the entire basis upon which an escrow regime would be built—that is, trusting the entity charged with examining the escrowed material—is undermined. Thus, it is not readily apparent that a third-party (governmental or otherwise) might adequately protect the general interests of the public.").

<sup>20</sup> *Viacom Intern. Inc. v. YouTube Inc.*, 253 F.R.D. 256, (S.D.N.Y. 2008); see also *Ray v. Allied Chem. Corp.*, 34 F.R.D. 456, 457 (S.D.N.Y. 1964) ("The end result of disclosure, where ultimately it develops that the asserted claim is without substance, may be so destructive of the interests of the prevailing party that more is required than mere allegation to warrant pretrial disclosure.").

<sup>21</sup> Note Jeff Jarvis's comparison of Google with Jesus in the book title "What Would Google Do?" For a more skeptical view, see Frank Pasquale, *Sources of Google's Success*, at [http://www.concurringopinions.com/archives/2008/01/sources\\_of\\_goog.html](http://www.concurringopinions.com/archives/2008/01/sources_of_goog.html) ("the more I study the search market, the more I see fortuitous legal and regulatory decisions paving the way to Google's success. Perhaps its technology in search was and is better than any search engine competitor. But its uniquely dominant place in the internet ecology could have been snuffed out at many points over the past 10 years" by alternative developments in key legal doctrines of copyright and communications law).

to grasp.<sup>22</sup> Yet the core of Google's business model is its search engine, and no one outside the company truly understands how that works. The company prides itself on keeping its algorithms confidential, and trade secrecy law has helped it defeat or limit even governmental requests for more data on how it operates.<sup>23</sup> Thus Viacom was put in a Catch-22,<sup>24</sup> unable to make a plausible showing about the nature of "search function" given its inability to access information about it.<sup>25</sup> Theoretically, it could guess at what could be done here, and subsequently algorithms could be disclosed in a protective order.<sup>26</sup> But even in that "best-case scenario," it is hard to imagine a court with the institutional competence to understand whether a given set of results has been manipulated or not. Search engine algorithms are enormously complex, and sometimes embody artificial intelligence that even their inventors have a difficult time fully understanding.

Commercial disputes like the ones mentioned above are only the tip of an iceberg of political and cultural clashes that will likely arise over search engine rankings. Consider some Republicans' fears that Google, a culturally liberal company,<sup>27</sup> is skewing search results to favor Barack Obama and

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<sup>22</sup> See Tim Anderson, *Chrome: A New Force for Web Applications*, at [http://www.theregister.co.uk/2008/09/04/chrome\\_review/](http://www.theregister.co.uk/2008/09/04/chrome_review/) ("This is not just a browser: it is a vehicle for delivering web applications, and it significantly changes the balance of power between those trying to build modern client platforms."); Scott McCloud, *The Google Chrome Comic*, at <http://www.scottmcloud.com/googlechrome/index.html>; but see Team Register, *Google's Comic Capers: What They Really Meant to Say*, at [http://www.theregister.co.uk/2008/09/02/google\\_chrome\\_comic\\_funnies/](http://www.theregister.co.uk/2008/09/02/google_chrome_comic_funnies/).

<sup>23</sup> *Gonzales v. Google, Inc.*, 234 F.R.D. 674 (2006) ("As trade secret or confidential business information, Google's production of a [limited] list of URLs to the Government shall be protected by protective order. Generally, the selective disclosure of protectable trade secrets is not per se 'unreasonable and oppressive,' when appropriate protective measures are imposed.")

<sup>24</sup> Other courts have been more sympathetic to plaintiffs in such a dilemma. See *Michrotech International, Inc. v. Fair*, 1992 WL 239087 (Conn. Super. Ct. 1992) ("Both of these proposed protective orders disregard the fact that in order for the plaintiff to demonstrate any wrongdoing on the part of the defendant, the plaintiff must first discover the very information which the defendant seeks to preclude.").

<sup>25</sup> Compare a similar result in voting machine litigation in Florida in 2006-2007. Jessica Ring Amunson & Sam Hirsch, *The Case of the Disappearing Votes: Lessons from the Jennings v. Buchanan Congressional Election Contest*, 17 WM. & MARY BILL OF RTS. J. 397, 398 (2008) ("the litigation ultimately was utterly inconclusive as to the reason for the 18,000 electronic undervotes because discovery targeting the defective voting system was thwarted when the voting machines' manufacturer successfully invoked the trade-secret privilege to block any investigation of the machines or their software by the litigants.").

<sup>26</sup> According to FRCP 26(c)(1), protective orders may be issued in the discovery process "for good cause" in order "to protect a party or person from annoyance, embarrassment, oppression, or undue burden or expense." FRCP 26(c)(1)(G) specifies the issuance of a protective order to structure the discovery of trade secrets: orders may be issued "requiring that a trade secret or other confidential research, development, or commercial information not be revealed or be revealed only in a specified way." For a general discussion of trade secrets and protective orders, see Melvin F. Jager, § 5:33, *Trade Secrets Law*, (updated in Sept. 2008).

<sup>27</sup> See, e.g., Sergey Brin, *Our Position on California's No on 8 Campaign*, The Official Google Blog, <http://googleblog.blogspot.com/2008/09/our-position-on-californias-no-on-8.html> (Sept. 26, 2008 15:23 EST).

marginalize the right.<sup>28</sup> Fox News has reported conservative discontent at Google's rapid response to manipulated search results related to Barack Obama, after its glacial efforts to defuse a "google bomb" aimed at George W. Bush:

In 2003, President Bush's detractors successfully gamed the Google search engine by arranging to have countless Web sites link the words "miserable failure" to Bush's official biography on the White House Web site. The result was that when someone typed the search term "miserable failure" into the Google search box, Bush's bio rose to the top of the search results. And that's how it stayed until 2007, when Google developed an algorithm to detect what became known as "Google bombs" and re-directed the term "miserable failure" to non-political pages.

Unfortunately for Obama, "miserable failure" reverted back to his bio when he moved into the White House. The new president was also Google-bombed with the phrase "cheerful achievement." But this time, Google stepped in quickly, rectifying the situation in a few days, instead of four years. The difference in time did not go unnoticed. "You let this go on for the entire Bush administration," a reader named w3bgrrl wrote on a Google blog. "But since you bought the White House for Obama, you don't want your candidates harmed . . . And your claims notwithstanding, even liberals know you're liberal."<sup>29</sup>

There are many good reasons for the difference in treatment; search guru Danny Sullivan discusses some of them in the same article. Google may have learned from the Bush experience and may now be capable of far faster responses to pranks. Without such tools, engineers may dismiss such manipulation as a silly prank that really shouldn't be its concern: Google doesn't produce biased results, "google bombers" produce biased results.

Nevertheless, political Google-bombing merits some attention. Campaigns are a struggle for salience, a competition with considerable stakes.<sup>30</sup> As more people form an image of candidates from search

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<sup>28</sup> See Michelle Malkin, *Google News: Not So Fair and Balanced*, Michelle Malkin Blog, <http://michellemalkin.com/2005/02/05/google-news-not-so-fair-and-balanced/> (Feb. 5, 2005 18:49 EST).

<sup>29</sup> Joshua Rhett Miller, *Unlike Bush's 'Google Bomb,' Google Quickly Defuses Obama's*, FoxNews.com, <http://www.foxnews.com/story/0,2933,485632,00.html> (Jan. 30, 2009). See also *Discussion about "Google Quickly Defuses Obama's Google Bomb"*, Technorati Blog, <http://technorati.com/articles/vsKqmOgmb%2BC8VmxIBNkko3mR%2BthIfUvxxs824v1MxDc%3D?sub=Zp4RPNF9ImpoHvEWipOIDONWcXFUCDVoyvhSeb04XR0%3D> (Jan. 30, 2009).

<sup>30</sup> I collect literature on the "struggle for salience" model of campaigning in *Reclaiming Egalitarianism in the Political Theory of Campaign Finance Reform*, 2008 ILL. L. REV. 599, 644 (2008) ("Utilizing statistical evidence from several campaigns, John Petrocik concludes that, to candidates, 'the campaign [is] a marketing effort in which the goal is to achieve a strategic advantage by making problems that reflect owned issues the criteria by which voters make their choice.'"); see also Frank Pasquale, *Political Google Bombing*, at [http://www.concurringopinions.com/archives/2006/10/political\\_googl.html](http://www.concurringopinions.com/archives/2006/10/political_googl.html) (complaining that search engine optimization "often boils down to the commodification of salience: if you give enough money to the SEO, they

results (or related Google properties like YouTube), we might worry that allegedly neutral, algorithmic representations of authority and popularity are really being influenced by a hidden agenda.<sup>31</sup>

For example, Cory Doctorow's short story "Scroogled" imagines a Google tightly integrated with DHS and quite willing to use its control of personal information to influence politics.<sup>32</sup> In Doctorow's story, the company "cleans up" results relating to "members of the Senate Commerce Committee up for reelection." Given its growing role in the media ecosystem, Google's power to influence perceptions of candidates is growing. Internet policymakers should not permit search engines to assert trade secrecy so aggressively that we cannot even determine whether a scenario like the one Doctorow has envisioned has come to pass.

Compare our dilemmas here to those posed by national security law--another area where we struggle to balance the values of openness and confidentiality.<sup>33</sup> Just as the FISA Court has the right to review even sensitive national security data to assure the rule of law, an analogous institution should be developed to enable regulators at the FTC or FCC to comprehend how dominant search engines' algorithms are developing--and to detect untoward manipulation.

A trusted advisory committee within the FTC could help courts and agencies adjudicate coming controversies over search engine practices. Qualified transparency here is the only chance we have to develop what Christopher Kelty calls a "recursive public"--one that is "vitaly concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence as a public."<sup>34</sup> Questioning the power of a dominant intermediary like

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try to get you ranked high in response to certain queries. Given the already overwhelming influence of the 'dollar primary,' the thing we need to do is to extend that dynamic into the world of online politics.")

<sup>31</sup> In our piece [Federal Search Commission?](#), Oren Bracha and I briefly mention some complexities caused by Google's purchase of YouTube. For example, does Google weight its merger with a company in its ranking algorithm? How well are YouTube's rivals doing in searches on Google for videos? Will business partners of Google be treated better in search results than, say, entities suing the company for one reason or another?

<sup>32</sup> Cory Doctorow, *Scroogled*, Radar Online, Sept. 12, 2007, (available at [http://www.radaronline.com/from-the-magazine/2007/09/google\\_fiction\\_evil\\_dangerous\\_surveillance\\_control\\_1.php](http://www.radaronline.com/from-the-magazine/2007/09/google_fiction_evil_dangerous_surveillance_control_1.php) ).

<sup>33</sup> In a hearing addressing competition on the Internet, House Judiciary Committee Chairman John Conyers made the comparison explicitly. At a recent hearing on the proposed Google-Yahoo joint venture, House Judiciary Chairman John Conyers complained that neither he nor other committee members were allowed to inspect the terms of the deal in a practicable manner. See Opening Statement of Chairman John Conyers, House Judiciary Committee, *Competition on the Internet*, Hearing of July 15, 2008, at 5:16-5:20, video available at [http://www.c-spanarchives.org/library/index.php?main\\_page=product\\_video\\_info&products\\_id=2064021](http://www.c-spanarchives.org/library/index.php?main_page=product_video_info&products_id=2064021) (last visited Aug 28, 2008) (Chairman Conyers complained that the members of the Committee were only permitted to inspect the deal if they viewed its terms "at a law firm, with no notes allowed." He stated that the Committee was given "more ready access to documents surrounding the President's terrorist surveillance program."). Clip available at [http://www.c-spanarchives.org/library/index.php?main\\_page=product\\_video\\_info&products\\_id=2064021&showVid=true&clipStart=285.86&clipStop=368.60](http://www.c-spanarchives.org/library/index.php?main_page=product_video_info&products_id=2064021&showVid=true&clipStart=285.86&clipStop=368.60) (last visited Aug 28, 2008).

<sup>34</sup> CHRISTOPHER M. KELTY, *TWO BITS: THE CULTURAL SIGNIFICANCE OF FREE SOFTWARE* (2007).

Google is not just a prerogative of the anxious. Rather, it's a prerequisite for assuring a level playing field online. Advocates of network neutrality would never think of permitting carriers to assert a blanket trade secrecy privilege to avoid any FCC regulation of "network management," even though growing security concerns make the confidentiality of such strategic decisions ever more important. As search engines increasingly become the hubs of traffic on the web, and assert the same CDA and DMCA immunities that carriers do, their actions need to become similarly subject to regulatory review.<sup>35</sup>

### *B. Defending Qualified Transparency for Search Engine Ranking Methods*

The controversies over possible search engine bias mentioned above are examples of a larger genus of problems related to trade secret-protected innovation that effectively regulates other forms of competition. Consumers compete for credit, and trade secret protected FICO scoring sorts them out for lenders; messages compete to land in our inboxes and comments to appear on our blog posts, and both OSPs and ISPs have to deploy spam filters that sort the wheat from the chaff. In the public realm, undisclosed voting machine and breathalyzer software can determine which votes count, and which do not; who goes to jail for drunk driving, and who goes free.<sup>36</sup>

A developed literature on online worlds has considered in some detail whether law should intervene to regulate an online gaming company's regulation of its players' conduct.<sup>37</sup> Legal systems have also developed a body of principles designed to regulate regulation, known as administrative law.<sup>38</sup> Certain principles of openness and due process drawn from administrative law should govern private entities' management of competitions. They are a natural extension of judicial practice in occasionally appointing special masters to handle trade secrecy discovery disputes.<sup>39</sup>

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<sup>35</sup> Frank Pasquale, *Internet Nondiscrimination Principles: Commercial Ethics for Carriers And Search Engines*, 2008 U. CHI. LEGAL F. 263, 265 (2008) (arguing "that the safe harbors that shield dominant search engines from liability also suggest patterns of responsibility for the results they present [because dominant search engines] and carriers are infrastructurally homologous . . . [acting] simultaneously [as] stable conduits, dynamic cartographers, indexers, and gatekeepers of the internet.").

<sup>36</sup> See Charles Short, *Guilt By Machine: The Problem of Source Code Discovery in Florida DUI Prosecutions*, 61 FLA. L. REV. 177 (2009) ("the state should negotiate for source code access to allow defendants to verify the machine's accuracy").

<sup>37</sup> See, e.g., essays in *The State of Play: Law, Games, and Virtual Worlds* (Jack M. Balkin and Beth Simone Noveck, eds.).

<sup>38</sup> I owe this characterization of administrative law to University of Chicago law professor Tom Ginsburg's discussion of the topic in a podcast on Chinese administrative law.

<sup>39</sup> For more on special masters, see James R. McKown, *Discovery Of Trade Secrets*, 10 SANTA CLARA COMPUTER & HIGH TECH. L.J. 35, (1994) ("Courts may appoint special masters to determine discovery disputes concerning trade secrets. In addition to the expressly enumerated methods, the official comment to the Act notes that courts also have restricted disclosures to a party's counsel and his or her assistants and have appointed a disinterested expert as a special master to hear secret information and report conclusions to the court.").

The growing importance of trade secrets in technologies of discipline and reward requires judges and policymakers to create nuanced regimes of qualified transparency. When ranking systems are highly complex and innovation is highly necessary (as in search engine algorithms and spam detection), a dedicated governmental entity should be privy to their development, and should serve as an arbiter (like the FISA court) capable of providing guidance to courts that would otherwise be unable to assess complaints about the results the algorithm generates. Given simpler algorithms and reduced need for innovation, the state should consider investing in rival, more transparent algorithms of assessment. Just as some economics scholars have been calling for the development of a state-funded ratings agency, the realm of consumer credit scoring would benefit from the emergence of a state alternative to present opaque industry practices.<sup>40</sup>

In the case of potential environmental hazards protected by trade secrets, a well-worn legal path has balanced public interests in transparency with private interests in secrecy.<sup>41</sup> For example, in a recent controversy, Halliburton and other resource extraction companies have been accused of using methods that could lead to the contamination of water sources. Halliburton's methods for extracting fuel have concrete value; that must in turn be balanced against the public interest identified in *Monsanto v. Ruckelshaus* in safe water and air. If the state went ahead and exposed the secret, it might lose all economic value, but we can envision some process for compensating Halliburton for its loss.

The trade secrets of Google, voting machine software owners, and financial firms are different. Their owners claim that if the trade secrets are released, the entire process they regulate will be *gamed*. In the worst case scenario, Google would become a graveyard of spammers, scammers, and "black hat search engine optimizers," all of whom raise the salience of their clients by tricking the algorithm into upping the rank of their clients' sites. Voting machine manufacturers doggedly assert that openness will risk the security of elections. In consumer finance, scorers' entire business model appears to depend on maintaining the secrecy of the strategies they employ; without such secrecy, they claim that illicit credit repair services could easily manipulate results for their clients and diminish the value of scoring generally.

We can interpret these worries about gaming in two very different ways. On the one hand, the trade secret owners claim guardianship over a process that is *more than* a mere game. Search engineers prefer the rhetoric of science: they are mathematically assessing the link structure of the internet and blanch at the prospect of marketers or hackers distorting the mapping of intentions and interest they

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<sup>40</sup> The "rival public system" approach has also been suggested for search engines. For example, in the US, Introna & Nissenbaum have called for a publicly funded search engine, and Jean-Noel Jeanneney's work makes a case for a French language alternative. The Quaero project of Germany and France appeared to be vindicating these hopes a few years ago, but was ultimately abandoned.

<sup>41</sup> Mary Lyndon, in U. Colorado L. Rev. (2007) (critiquing the current balance as inadequately protective of public safety).

want to generate. Voting machine manufacturers appeal to our simultaneous commitments to ballot box secrecy and nonmanipulable electoral results.<sup>42</sup> Opening up their processes would lead to a “spy vs. spy” arms race of hacking and anti-circumvention measures. That game could undermine democracy, leading citizens to dismiss officeholders as the team best able to manipulate technology. Similarly, credit scoring entities worry that the worst credit risks will manipulate scores by employing tactics that artificially raise their profile.

Less commonly, but more tellingly, the rationale for “security via obscurity” embraces the gamelike quality of the enterprise secrecy is supposed to be needed to protect. Google’s guidelines for webmasters, and the very existence of “white hat” search engine optimizers, implies that some influencing of search engine results is acceptable. On this reading, there is a game in search engines, one that can be played fairly, or cheated on.<sup>43</sup> Rather than elevating the mapping project as *more than a game*, this view embraces its game-like qualities. Follow the rules, generate enough interest from elsewhere on the web, and you can gradually win the search engine game.

Unfortunately for the game-embracing and game-rejecting rhetorics of process-constitutive trade secrecy, both suffer from an array of internal contradictions. The putatively scientific aspiration to map the web hides the *values* at stake in the *ranking* at the core of general purpose search engines’ project. A search engine amounts to a cultural voting booth, translating the activities of millions of searchers and linkers into a referendum on the relevance of websites to any given query. Results in response to a company’s or person’s name paint a picture of that entity that can either discredit or elevate it.<sup>44</sup> Meanwhile, the game-embracing viewpoint inadequately acknowledges the gray areas mentioned above. While the aleatory quality of a roll of the dice may increase the fun of playing Monopoly, something as serious as one’s relative position in search results should not be similarly chancy.

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<sup>42</sup> The prospect of gaming reveals a key difference between the human and natural sciences: I can observe regularities in nature for some time and (pace Heisenberg) my publishing my observations is not going to cause molecules or plants to act any differently. But humans can change their behavior on the basis of knowledge about how others behave. As Jon Elster states, “In parametric rationality each person looks at himself as a variable and at all others as constants, whereas in strategic rationality all look upon each other as variables.” More strategically rational individuals will undermine Title Scorer’s ability to predict. Jon Elster, *Marxism, Functionalism, and Game Theory: The Case for Methodological Individualism*, THEORY AND SOCIETY 11:453-482 (1982), at <http://www.geocities.com/hmelberg/elster/AR82MFGT.HTM>).

<sup>43</sup> See van Couvering on the “war schema” in search engineers’ discourse, at <http://jcmc.indiana.edu/vol12/issue3/vancouvering.html> (“The war schema is not only important in defining relationships with other actors, it also provides a reflection on the identity of the producers as they assume the role of guardian or protector of something precious—in this case, access to the Web.”).

<sup>44</sup> See Frank Pasquale, *The Picture and the Paint*, CONCURRING OPINIONS, [http://www.concurringopinions.com/archives/2009/01/the\\_picture\\_and.html](http://www.concurringopinions.com/archives/2009/01/the_picture_and.html) (May 10, 2007 12:26 EST) (“Iris Murdoch has stated that “Man is a creature who makes pictures of himself and then comes to resemble the picture. This is the process which moral philosophy must attempt to describe and analyse.” But in [Lawrence] Lessig’s *Remix*, Google is the entity which makes pictures of our world (and ourselves), and we are invited to celebrate our participation in that process while downplaying the moral questions raised by its opaqueness.”).

In an era of increasing competitive pressures and income stratification, we like to believe that markets, democracy, or some combination of the two determine the results of these competitions. Those forms of spontaneous coordination are perceived as legitimate because they are governed by knowable rules. A majority or plurality of votes wins, as does the highest bidder. Yet when markets and elections are mediated by institutions that suffer transparency deficits, their legitimacy declines. Rather than voluntarily reaffirmed by spontaneous choices of consumers, dominance can be purchased. To avoid such self-reinforcing cycles of advantage, search engine's ranking practices should be transparent to some entity capable of detecting the illicit commodification of prominence in organic results.<sup>45</sup>

### III. Consumer Credit Rating

#### A. *Public Concerns About Opaque Consumer Credit Rating Systems*

Google has committed itself to strictly separating editorial content (organic search results) and advertisements (paid results), but there is no clear path for someone who alleges harm caused by a violation of the policy to actually verify that it has not been followed. Similarly, there is no effective appeal of a FICO score once it is released. Search engines demand secrecy because they want to avoid being gamed. A similar rationale underlies consumer credit raters' unwillingness to permit scrutiny of their models. Incidental indicators of good credit can become much less powerful predictors if everyone knows about them. If it were to become widely known that, say, the optimal number of credit accounts is four, those desperate for a loan may be most likely to alter their financial status in order to conform with this norm. In the worst case scenario, the disclosed signal becomes more an indicator of desperation for financing than a badge of creditworthiness.

Such gaming practices have become a common tactic of "credit repair services" and other consultants for the cash-strapped. For example, "piggybacking" has become popular in some credit repair circles. For a fee, groups like Instant Credit Builders let clients "borrow" part of another person's credit score by becoming an "authorized borrower" on his or her accounts. ICB defended the practice in this way:

ICB has developed a system to counter the harmful societal impacts of an emerging market called "subprime lending". Mob-like blood suckers under the umbrella of legitimate lending institutions are targeting those who have poor credit scores but fall short of being beyond credit risk acceptance.

To explain why subprime lenders are in such an opportunistic industry, take this example: The commission payable to a financial adviser or mortgage broker from an actual prime

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<sup>45</sup> For the full policy rationale here, see the discussion of payola and Ellen Goodman's work on stealth marketing in Pasquale & Bracha. But see Eric Goldman, *Stealth Harms of Stealth Marketing*, and for a response to Goldman on marketing generally, Pasquale on a Coasean Analysis of Marketing (Conglomerate Junior Scholars Online Workshop).

lender on a \$100,000 deal yields a broker about \$250. Yet the same \$100,000 deal using a subprime lender yields them \$2,000 to \$2,500. This niche market banking industry is getting paid well to enslave most minorities, low-income borrowers, even victims of identity theft with interest rates that can be up to 3.5% higher than average.

Mortgage lenders quickly moved to fight “piggybacking.”<sup>46</sup> The godfather of credit scorers, FICO, has claimed that “piggy-backing will soon come to an end on its watch.” One irony here is that, as lenders crack down, “they may actually increase demand for some of the services that these Web sites offer.”<sup>47</sup> Without clear and transparent standards for improving their status, consumers are likely to resort to middlemen peddling quick fixes. Since scoring is opaque, consumers are navigating a world where they can have only a vague idea of the rules.<sup>48</sup> How much worse is it to have a 90-day-late stigma on one’s credit report than a lien that might result from it? The only quantitative measure is its impact on one’s score, and scorers do not entertain prospective queries.

Because of concerns about their unreliability and unfairness, use of credit scores has been regulated by forty-eight states.<sup>49</sup> Credit scores have also come under attack for having a disparate impact on poor and minority populations.<sup>50</sup> The National Fair Housing Alliance has criticized them as embedding sexist

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<sup>46</sup> *Credit Piggybacking - What Will They Think of Next?*, Mortgage News Daily, [http://www.mortgagenewsdaily.com/6142007\\_Credit\\_Piggybacking.asp](http://www.mortgagenewsdaily.com/6142007_Credit_Piggybacking.asp) (June 14, 2007 07:00 EST).

<sup>47</sup> *Id.* For a parallel situation among law schools, see Michael Sauder and Wendy Nelson Espeland, *The Discipline of Rankings*, AMERICAN SOCIOLOGICAL REVIEW, at <http://www.asanet.org/galleries/pubinfo/ASR%20Feb%20Sauder%20on%20Rankings.pdf> (“‘Gaming’ is one example of how resistance extends discipline by restructuring relations both among law schools and between law schools and the rankings. We define gaming as cynical efforts to manipulate the rankings data without addressing the underlying condition that is the target of measurement. [For example,] some schools encourage underqualified applicants to apply to boost their selectivity statistics, “skim” top students from other local schools to keep entering first-year cohorts small[, etc]. Such gaming strategies prompted USN to change its methodology and reporting, develop more explicit rules about how to measure rankings criteria, and monitor information more closely. The result, predictably, is a more precise and stringent discipline and more ingenious forms of gaming.”)

<sup>48</sup> Chi Chi Wu, *Automated Injustice*, at [http://www.consumerlaw.org/issues/credit\\_reporting/content/automated\\_injusticePR.pdf](http://www.consumerlaw.org/issues/credit_reporting/content/automated_injusticePR.pdf) (“A key component of credit reporting protections for consumers – the dispute system mandated by the Fair Credit Reporting Act – has been automated into a travesty of justice, finds a new report issued by the National Consumer Law Center.”).

<sup>49</sup> NAMIC Online, *NAMIC's State Laws and Legislative Trends: State Laws Governing Insurance Scoring Practices 1* (2004), <http://www.namic.org/reports/credithistory/credithistory.asp>.

<sup>50</sup> Dave Kaiser, *Credit-based Insurance Scoring Remains a Key Legislative, Regulatory Issue*, *Ins. Journal* 1 (November 7, 2005), available at <http://www.insurancejournal.com/magazines/southeast/2005/11/07/features/62355.htm>; Frank M. Fitzgerald, Comm'r, Office of Fin. and Ins. Serv., *The Use of Ins. Credit Scoring In Auto. and Home Owners Ins.: A Report to the Governor, the Legislature and the People of Mich.* (2002) [www.michigan.gov/documents/cis\\_ofis\\_credit\\_scoring\\_report\\_52885\\_7.pdf](http://www.michigan.gov/documents/cis_ofis_credit_scoring_report_52885_7.pdf).

and racist assumptions into an ostensibly neutral process:

Studies as well as lawsuits continue to demonstrate that African Americans, Hispanics, and elderly women are not treated the same as similarly qualified white males when attempting to purchase products such as cars, or secure mortgage loans or homeowners insurance. The terms and conditions for purchase of these products can be driven by the race, national origin or gender of the consumer rather than by their ability to pay or condition of the home.<sup>51</sup>

The rules themselves may be self-fulfilling prophecies.<sup>52</sup> If a scorer determines that one missed \$10 payment for a woman with two children earning \$30,000 per year lowers her credit score by 200 points, she probably is going to end up being more likely to default because she is going to be paying much more in interest for any financing she can find. Since the scores are black boxes, we have no assurance that the companies that offer them try to eliminate such endogeneity or whether they profit from such self-fulfilling prophecies.

There is something deeply troubling about the unaccountable power that is an inevitable dimension of secretive credit rating. Such a system can simply spit out a life-changing result without giving any explanation for it. Suspicion about FICO scores has led some states to prohibit their use in insurance rating,<sup>53</sup> just as Finland has prevented employers from using Google results (among other unauthorized

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<sup>51</sup> Shanna L. Smith, written testimony, *Fair Credit Reporting Act: How It Functions for Consumers and the Economy*, Before the House Financial Services Committee, June 4, 2003 (available at <http://financialservices.house.gov/media/pdf/060403ss.pdf>); see also Birny Birnbaum, *Insurer's Use of Credit Scoring for Homeowner's Insurance in Ohio: A Report to the Ohio Civil Rights Commission*, 2 (Jan. 2003), available at [http://www.cej-online.org/report\\_to\\_ohio\\_civil\\_rights\\_commission.pdf](http://www.cej-online.org/report_to_ohio_civil_rights_commission.pdf). But see Ian O'Neill, *Disparate Impact*, 19 LOYOLA CONSUMER LAW REVIEW 151 (2007) (collecting studies like Texas's, which did not find the disparate impact of credit scoring on minorities to be evidence of discrimination).

<sup>52</sup> See Frank Pasquale, *The Death Spiral*, at [http://www.concurringopinions.com/archives/2007/03/the\\_death\\_spira.html](http://www.concurringopinions.com/archives/2007/03/the_death_spira.html) (describing a "a 'death spiral' of lost employment, lost insurance due to that lost employment, and future inability to find work due to poor health."); see also Robert Berners, *Hospitals X-Ray Patient Credit Scores: More and More are Buying Credit Data to See if the Sick Can Afford Treatment*, *Businessweek*, at [http://www.businessweek.com/magazine/content/08\\_48/b4110080413532.htm?chan=magazine+channel\\_what%27s+next](http://www.businessweek.com/magazine/content/08_48/b4110080413532.htm?chan=magazine+channel_what%27s+next) (Medical credit scorer "SearchAmerica says that it has 1,000 hospital clients. The three major credit bureaus . . . are marketing their own customized software for medical providers. And this summer, private equity giant Bain Capital invested \$50 million in MedeFinance . . . . Lawmakers in one state, Minnesota, have tried to restrict medical credit scoring. But Republican Governor Tim Pawlenty vetoed a bill in May that would have required hospitals to provide care before seeking a patient's financial data.").

<sup>53</sup> Haw. Rev. Stat. § 431:10C-207 (2005) ("No insurer shall base any standard or rating plan, in whole or in part, directly or indirectly, upon a person's race, creed, ethnic extraction, age, sex, length of driving experience, credit bureau rating, marital status, or physical handicap.").

information sources) in evaluating potential applicants.<sup>54</sup>

### *B. Credit Scoring: From Qualified Transparency to Open Standards*

Like credit bureaus, both law enforcement officials and agencies must gather data about individuals in order to make decisions about penalties and benefits. As the scope and intensity of this data collection and analysis increases, more duties are outsourced to private entities. When such entities use trade secret protected methods to analyze the data, the transparency and legitimacy of administrative processes can be threatened. For example, David Levine has described a situation where “the public's right to access [information concerning a vital security lapse in routing systems] was completely subjugated to the marginal claim that some of this information might qualify as a trade secret.”<sup>55</sup> Levine concludes that “trade secrecy must give way to traditional notions of transparency and accountability when it comes to the provision of public infrastructure.” The deployment of trade secret based technologies for determining punishments and rewards should yield to some forms of transparency.

Danielle Citron has critiqued Colorado's adoption of a benefits management system that wrongly denied benefits to hundreds of deserving individuals.<sup>56</sup> Citron also describes the problems caused by automated decisionmaking by the “data-mining algorithms of the Terrorist Surveillance Program” and the automated Federal Parent Locator Service's erroneous stigmatization of individuals as “dead-beat” parents. She argues that in many of these cases, the problems go beyond mere “glitches” that are inevitable in any automated system. Rather, they amount to an illicit, sub rosa rulemaking by programmers. Because agencies' legislative rules have the force and effect of law, they must usually be subject to a process of notice, comment, and opportunity for revision in response to comments.

Commentary on voting machine controversies can also provide some guidance here. James Grimmelmann makes the case that governments can separate the need for secrecy in voting from the need for secrecy in software for voting.<sup>57</sup> Michael Carrier has done insightful work on the topic,

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<sup>54</sup> *Act on the Protection of Privacy in Working Life*, 759/2004 (2004), discussed in Frank Pasquale, *Toward a Fair Reputation Reporting Act*, forthcoming 2009 in *Privacy and Free Speech on the Internet* (Martha Nussbaum and Saul Levmore, eds., Harvard University Press).

<sup>55</sup> David Levine, *Trade Secrets in Our Public Infrastructure*, 59 *Florida L. Rev.* 135 (2007). Levine also describes how trade secrecy interfered with proper testing procedures for voting machines (“Diebold's response to being informed of four successful hacks of their machines, which one hacker likened to ‘prestuffed a ballot box,’ was to say that these tests were ‘invalid’ and ‘potential violations of licensing agreements and intellectual property rights.’”). See also Michael Carrier (“Software is critical to DREs, with the success of elections “hing[ing] on the correctness, robustness, and security of the software.” But flaws in software are not easily detectable, as malicious computer code may be disguised as useful code or may be difficult to locate. These dangers are heightened in programs as complex as those used by DREs and in software that the voting machine vendors have jealously guarded as proprietary trade secrets.”).

<sup>56</sup> Citron, *Technological Due Process*, 85 *WASH. U. L. REV.* 1249 (2008).

<sup>57</sup> Madisonian Comment (“the secrecy of the ballot booth creates some requirements for less than complete

proposing "voter-verified paper trail[s], random audits, [and] open source software."<sup>58</sup> Danielle Citron's important piece *Open Code Governance* is providing a new set of arguments for open software as a keystone of legitimacy for automated processes:

E-voting systems use proprietary software. As a result, election officials, candidates, technical experts, and interested citizens typically cannot inspect the source code to ensure the software works correctly. Courts provide trade secret protection to the source code, refusing access to it even in cases where programming errors allegedly caused election irregularities.

[But] open code e-voting systems would attract "the country's best independent technical experts to analyze the source code and publish their findings." Such projects generate interest due to the reputational advantages of participating in such projects.

Consider Australia's open code e-voting project. A private company designed Australia's e-voting system and posted its source code online for review and criticism. The vendor posted all of its drafts of the source code, including its final version. Interested programmers and independent auditors studied the source code and provided feedback. An Australian National University professor caught the most serious problem. The vendor, in turn, fixed the source code, shoring up the system's security. Australia's e-voting system has received broad praise for its reliability and security. Similarly, computer scientists working for the Open Voting Consortium have begun programming open source software for election systems in the United States.

Citron's commentary on the success of open code e-voting suggests another path for the resolution of disputes over credit scoring. Rather than trying to cabin scorers' discretion indirectly, policymakers could try to outflank them by supporting a wholly transparent system of assessing creditworthiness.

### *C. How Doctors Are Demanding Transparent Rating Systems*

Doctors have led the way in crusading for more accountable systems of reputation assessment. After certain insurance companies created "black box" evaluation systems for physicians, state medical associations began to demand accountability. For example, in 2006, the Washington State Medical Association ("WSMA") filed suit against Regence BlueShield, an insurance company which evaluated doctors using allegedly inaccurate and outdated information.<sup>59</sup> The association lodged

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transparency. Those requirements, however, don't translate into a similar requirement that the source code of the voting machines be secret. That's just ill-advised security by obscurity.")

<sup>58</sup> Carrier, 69 St. John's L. Rev., at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=792324](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=792324) ("I propose for electronic voting machines a voter-verified paper trail, random audits, open source software, and other recommendations. Only after these proposals are adopted can voters have confidence that the promise of vote counting technology will match its perils.")

<sup>59</sup> See <http://www.surgicenteronline.com/hotnews/insurance-commission-physician-tiering.html>. Compare Bob Tedeschi, *Faulting Credit Firms on Fixing Errors*, at <http://www.nytimes.com/2009/02/08/realestate/08mort.html?sq=chi%20chi%20wu%20national%20consumer>

the complaint on behalf of six doctors who were rated poorly in the “quality and efficiency of their practices” by the insurance company, and subsequently dropped from the Regence “Select” coverage network as a result.<sup>60</sup> The plaintiffs provided multiple examples of the flaws in the methodology and data used by Regence to evaluate physicians. For example, the company used four-year-old data, small sample sizes, and focused on cost of claims rather than quality of care.<sup>61</sup> Doctors complained that the plan “puts costs ahead of better health care” and “interferes” with the doctor-patient relationship.<sup>62</sup>

Initially, both patients and doctors expressed “outrage” over the “Select” network evaluation program without taking legal action.<sup>63</sup> Regence delayed implementation of the program, but did not assuage doctors’ concerns.<sup>64</sup> After initial negotiations failed, the WSMA filed suit in September, 2006 in an effort to stop the Select evaluation program, and to request money damages for doctors who suffered damage to their reputation as a result of the inaccurate evaluations.<sup>65</sup> The complaint alleged defamation and violation of the Consumer Protection Act, among other things.<sup>66</sup>

After ten months of litigation, Regence agreed to settle with the WSMA “in an effort to better understand physician concerns.”<sup>67</sup> The company voluntarily withdrew the Select Network program and even apologized to doctors and patients “for any misunderstanding that may have been caused by its” evaluation program.<sup>68</sup> The settlement agreement, effective for at least two years, promises transparency in evaluations, as well as fair methodology.<sup>69</sup> In addition to these terms, Regence

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%20law%20center&st=cse&scp=1&pagewanted=print (“Many consumers are unaware what their credit score is until it’s time to apply for a home mortgage, but by then it is often too late to fix any mistakes that they might uncover in their credit reports. A new report by the National Consumer Law Center, a consumer advocacy organization based in Boston, has concluded that the three major credit-reporting agencies — Equifax, Experian and TransUnion — have not done enough to improve the process by which consumers may correct these errors.”)

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*

<sup>67</sup> *Physicians and Regence BlueShield Settle Lawsuit*, August 8, 2007, Press Release.

<sup>68</sup> *Id.*

<sup>69</sup> The terms from the published settlement include:

1. Prior to implementation of any new or revised performance measurement

agreed to donate to the WSMA to support programs that educate healthcare providers about evaluation programs.<sup>70</sup>

Doctors have engaged in similar efforts to reform Connecticut insurers' rating systems. In 2007, the Fairfield County Medical Association ("FCMA") filed a class action suit against Cigna and UnitedHealth Group for damages related to defamation resulting from the companies' evaluation and ranking programs that bestowed the title of "elite" on certain doctors but not others.<sup>71</sup> The FCMA alleged that this program is "based on the insurers' financial interests," rather than quality.<sup>72</sup> Therefore, the plaintiffs argue, the "elite" status "giv[es] the false impression that certain doctors are better than others" when the only data used is related to the cost of claims.<sup>73</sup> The FCMA president claimed that "This practice is like ranking the quality of a restaurant by examining the check at the end of the meal."<sup>74</sup> The plaintiffs allege that "elite" status is reserved for "the physicians who provide care at the lowest cost to the...insurance companies...[and] are touted to the public as providing better care than" more expensive doctors.<sup>75</sup>

In May of 2008 the Massachusetts Medical Society filed the most recent lawsuit to challenge insurance ranking systems.<sup>76</sup> In that case, the Group Insurance Commission, which purchases

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program, Regence will provide WSMA with the opportunity to provide meaningful input [on it]. Regence will explain the...program and the intended methodology...

2. At least ten days prior to the release of new physician performance scores...Regence will advise WSMA that scores will be forthcoming...

3. Physician reports and scores will be posted on Regency's...website...and will include:

(i) an explanation of the methodology [and]

(ii) an explanation of the data relied on to calculate the score. . .

4. Physicians will have an opportunity to appeal their scores...

5. ...Physicians who disagree with Regence's internal review decision [on their appeal] will be provided an opportunity to have the disputed score reviewed by an independent external reviewer...

<sup>70</sup> *Id.*

<sup>71</sup> *Cigna Sued in Connecticut Superior Court by the FCMA and Nine Doctors for Defamation Resulting From "Elite" Physician Designation*, July 2007, Press Release.

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> *Massachusetts Medical Society v. Group Insurance Commission.*

health insurance for state workers, initiated a program which requires insurance companies to rank doctors into three “tiers,” and varies the patient’s co-payment depending on the tier of doctor.<sup>77</sup> Tier 1 is purported to be the best in terms of quality and cost efficiency, and therefore has the lowest co-payment, while tier 3 is the worst and requires the most expensive co-payment.<sup>78</sup> To determine the tier is a two step process. First, the doctor’s quality of care is compared with a minimum threshold. If the doctor meets this minimal standard, the physician is placed into a tier in step two by a cost-efficiency calculation. If the doctor does not meet the minimum quality threshold, he is shunted into the bottom tier.

The exact thresholds are determined by the individual insurance companies, but regardless it is evident that reduction of costs is favored by this program more than quality of care. For example, the only quality measure is whether a doctor meets a minimum threshold of care, which many doctors will pass. Any physicians who pass this baseline test are then “tiered” exclusively based on cost efficiency in the second step. Only doctors who fail to meet the minimum standard of care receive a ranking based on quality of care. Arguably, the inclusion of the quality assessment is nothing but a ruse or sham, to disguise the fact that the rankings are primarily a cost-benefit analysis. To its credit, this evaluation program’s basic structure is more transparent to consumers than the private ones mentioned above.<sup>79</sup>

However, more detailed assessments of the methodology of the private plans are not yet possible. Despite the availability of information about the two step evaluation process, exact information about the threshold values and methodologies used by the individual insurance companies are unknown. Acknowledging this, the plaintiffs requested a court order which would:

...order[] the Health Plans to disclose to its physicians precisely how its tier rankings are designed, including a complete description of all measures, criteria, detailed algorithms, methodologies, and patient-identified data sources used in such rankings...

At this point, it is unknown what information, if any, the defendants will provide. However, the Group Insurance Commission guidelines and information in the complaint alone are enough to illuminate some features of the rating system vital to consumers using it.

In New York, state Attorney General Andrew Cuomo launched a successful investigation of doctor

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<sup>77</sup> Surgicenter.com, *Lawsuit: Insurance Commission Physician Tiering Program Flawed*. For more on the unique obligations of public authorities to rank and rate physicians fairly, see Lawrence Casalino & Timothy Jost, *Value Purchasing in Traditional Medicare: Getting Beyond Silos*, forthcoming in *FRAGMENTATION IN HEALTH CARE PROVISION AND DELIVERY*, Einer Elhauge, ed. (Oxford, expected in 2009).

<sup>78</sup> Complaint, *Massachusetts Medical Society v. Group Insurance Commission* at 6-8.

<sup>79</sup> As the defendant is a state agency, the plaintiffs included due process violations, as well as the usual defamation claims for damage to reputation in their complaint. Since the doctors have contracts with the insurance providers, there are contractual claims as well. Lastly, like the Avvo.com plaintiffs, these doctors also brought a state Consumer Protection Act claim in response to the allegedly deceptive ranking system.

rating which culminated with settlement agreements in 2007.<sup>80</sup> Cuomo sent letters to insurers threatening legal action over their evaluation programs.<sup>81</sup> After this threat, five insurance companies eventually agreed to follow the ranking guidelines in a national model provided by the New York Office of the Attorney General (“OAG”) through cooperation and consultation with the AMA and other organizations.<sup>82</sup> According to an OAG press release, CIGNA, Aetna, Empire Blue Cross Blue Shield/WellPoint, United Healthcare and GHI/HIP had signed the settlement agreement as of November 20, 2007.<sup>83</sup> , CIGNA has agreed to make its methodologies public.<sup>84</sup>

The model agreements require “insurers to fully disclose to consumers and physicians all aspects of their ranking system.”<sup>85</sup> To ensure enforcement, “the insurer must retain an oversight monitor, known as a Ratings Examiner...who will oversee compliance with all aspects of the agreement and

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<sup>80</sup> Walter Eisner, [www.orthopedics.com](http://www.orthopedics.com), *Doctor Ranking Agreement Reached*.

<sup>81</sup> *Id.*

<sup>82</sup> *Attorney General Cuomo Announces Doctor Ranking Agreement with GHI and HIP: Five Insurers in Three Weeks Adopt Model Created Together with National Medical and Consumer Groups*, Press Release, November 20, 2007.

<sup>83</sup> See Health Care Industry Task Force, *Doctor Ranking Programs*, available at [http://www.oag.state.ny.us/bureaus/health\\_care/HIT/doctor\\_ranking.html](http://www.oag.state.ny.us/bureaus/health_care/HIT/doctor_ranking.html) (“In 2007, the Attorney General commenced an industry-wide investigation into insurers’ doctor-ranking programs. Doctor ranking programs are a rapidly growing practice within the Healthcare industry. Major insurers nationwide either operate or are in the process of developing these programs. While these programs are often marketed to consumers as providing guidance on quality care, insurers have a financial incentive to steer consumers to the cheapest, and not necessarily the best, doctors. The Attorney General investigated deceptive patient steering that was conducted under the guise of these ranking programs. The OAG has settled with eight health insurance companies so far, instituting model reforms to ensure that any ranking programs are based on accurate and transparent measure—and monitored for compliance.”).

<sup>84</sup> Email from Linda Lacewell, Chair of the New York Attorney General’s Health Care Task Force, to Frank Pasquale, Oct. 27, 2008 (“The reference in the CIGNA agreement to CIGNA having provided documents and information to the AG’s office was meant to signify that CIGNA had cooperated in our investigation by responding to our questions and requests for documents. CIGNA did so in the context of explaining their program to us so that we could determine whether the program needed to be modified or supervised. They did so voluntarily (i.e., without subpoena, although we had the authority to subpoena them) in order to cooperate with our investigation. This is not uncommon. The same is true of other plans with which we signed agreements. So CIGNA, and other plans, explained to the AG’s office its methodologies, etc., but it did so in the context of our investigation so that we could conduct our investigation appropriately. Now . . . CIGNA and other plans have agreed to disclose their methodologies to the public.”).

<sup>85</sup> *Attorney General Cuomo Announces Doctor Ranking Agreement with GHI and HIP: Five Insurers in Three Weeks Adopt Model Created Together with National Medical and Consumer Groups*, Press Release, November 20, 2007

report to the Attorney General every six months.”<sup>86</sup> Since there is mandatory disclosure of all data and methodologies, the problem of the “black box” evaluation system is eliminated under the model agreements.<sup>87</sup> Moreover, doctors must also have the right to appeal disputed rankings. If it succeeds, the model agreement would remedy many of the problems mentioned in the complaints in the Massachusetts, Connecticut, and Washington cases.

Attorney General Cuomo has advocated the codification of the model based on his written agreements with insurance companies, and several prominent members of the New York legislature have agreed to support the bill.<sup>88</sup> The charter also calls for the involvement of doctors in designing the methodology for evaluation, and in the ability of doctors to appeal incorrect or unfair information.<sup>89</sup> In order to best serve doctors and patients, the “measures and methodology should be transparent and valid.”<sup>90</sup> All data and methods used to evaluate should be thoroughly and clearly explained, including any limitations of the data.<sup>91</sup> Lastly, quality care assessment programs should be based on national standards and evaluated for efficacy.<sup>92</sup> The CPDP summarized the terms by suggesting that “the leading health plans that adopt the Patient Charter are agreeing to a standard set of principles for performance measurement and reporting and to have their consumer reports assessed by an independent review organization.”<sup>93</sup> The agreements, the proposed bill, and the national charter suggest a national trend towards transparent, quality-based rankings with the right for doctors to appeal inaccuracies.

#### *D. Lessons for Critics of Credit Scoring*

*[In this section I will discuss how federal regulators could use their current leverage over the banking system to encourage use of an open alternative to extant closed models of credit scoring. Such an open model would permit consumers to better understand the consequences of debt management decisions. I also hope to discuss the types of issues relating to the balance of “open” and “closed” innovation systems that were the subject of the “Worlds Colliding” conference at Fordham Law School.]*

## **V. Conclusion**

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<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> Molly McDonough, *Cuomo’s Doctor-Ranking Model Gains Political Traction*, November 26, 2007.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> Consumer-Purchaser Disclosure Project, *Consumers, Health Care Purchasers, Physicians, and Health Insurers Announce Agreement on Principles to Guide Physician Performance Reporting*, Press Release, April 1, 2008.

The archetypal idea of a trade secret is a nondisclosed business practice that results in a more efficient or effective manufacture of product. As the economy grew more service-oriented, intangible advantages over competitors (such as client lists) rose in importance. Trade secrecy also moved from the commercial to the nonprofit realm, as even churches have argued that certain scriptures and genealogical information are to be protected from prying eyes of skeptics and competitors.<sup>94</sup> This chapter has focused on one particularly troubling rise in the popularity of trade secrets—their use as undisclosed “rules of the game” in competitions for prominence and credit.

In an era of information overload, consumers clamor for reliable guides to quality goods and services. Google, Amazon, and eBay have risen to the top of the internet ecosystem by providing them with filtering services. We tend to think of entities like Google as elevating the salience of certain sites, but like Robert Cover's jurisprudential judges, they also exist to reduce attention to the entities behind the first few pages of search results. Would-be debtors swamp credit card companies and banks with requests for loans, and automated programs assess the creditworthiness of each.

According to the dominant social scientific storyline of our age, economic incentives redound to the benefit of all here, as the guardians of the web and banking pick off the bad actors which disrupt fair competition. Yet many feel wronged or unduly slighted by their ultimate place in the pecking order that search engines and credit scorers create. McKenzie Wark's *Gamer Theory* begins to articulate the feeling that one is trapped, unable to escape an all-pervasive “gamespace” whose opaque rules vitiate players' autonomy:

Ever get the feeling you are playing some vast and useless game to which you don't know the goal, and can't remember the rules? Ever get the fierce desire to quit, to resign, to forfeit, only to discover there's no umpire, no referee, no regulator, to whom to announce your capitulation? Ever get the vague dread that while you have no choice but to play the game, you can't win it, can't even know the score, or who keeps it? Ever suspect that you don't even know who your real opponent might be? Ever get mad over the obvious fact that the dice are loaded, the deck stacked, the table rigged, and the fix — in? Welcome to gamespace. It's everywhere, this atopian arena, this speculation sport. . . . You are a gamer whether you like it or not, now that we all live in a gamespace that is everywhere and nowhere.<sup>95</sup>

Wark's gestures to Kafka points up the troubling asymmetry at the heart of present search engine rankings and credit scoring. Quotidian decisions have consequences determined by entities which pair ever-more-pervasive surveillance of us with aggressive deflection of inquiries about them.

In a more egalitarian society, such unknown unfairnesses might be dismissed as marginal concerns.

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<sup>94</sup> The Church of Scientology is one example, and its “auditing system” might also be considered a method of “ranking and rating” members by assessing their worthiness to be privy to the most protected secrets of the Church.

<sup>95</sup> WARK, *GAMER THEORY* (Harvard Univ. Press, 2007).

But we live in an age of competition and stratification. A power law distribution of attention on the web, like ever-more-extreme polarization of wealth and poverty, has to be legitimated by markets, democracy, or some combination of the two.<sup>96</sup> Such forms of spontaneous coordination are perceived as fair because they are governed by knowable rules: a majority or plurality of votes wins, as does the highest bidder. Yet our markets, elections, and life online are increasingly mediated by institutions that suffer a serious transparency deficit.

Search engines have some good reasons for keeping their algorithms confidential--if they were public, manipulators of results could quickly swamp Google users with irrelevant results. However, just as Comcast cannot circumvent net neutrality regulation by saying all its traffic management and spam-fighting methods are trade secrets (or unregulable opinions), search engines should not be able to use such arguments to escape regulation altogether. Moreover, there are ways of developing a qualified transparency that would let a trusted third party examine a search engine's conduct without exposing its business methods for all the world to see.

Such qualified transparency could also enable fairer investigations of disputed credit scoring. However, the scope and seriousness of complaints against extant scoring systems warrant investigation of a more radical alternative. As government subvention for the finance system grows, lenders need to become more accountable to the public. By developing a transparent method of credit scoring that explicitly articulated the values at stake in financial decisionmaking, a government agency could begin mooring consumer credit practices in the types of virtuous habits flung to the wind during the subprime frenzy. Rather than permitting financiers the arbitrary privilege of using unaccountable data to make unchallengeable lending decisions, a wary public should demand a credit system that better reflects its values. Trade secrecy may have little or no place in a financial world wrecked on the shoals of black box derivatives trades and an opaque "shadow banking system."<sup>97</sup>

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<sup>96</sup> Clay Shirky describes the power law distribution; Yochai Benkler attempts to justify it on the basis of the openness of the web.

<sup>97</sup> Opaque "SIV"s and conduits have brought the global financial system to the brink of collapse, and many experts despair at the prospects of ever understanding precisely who owns the mortgages sliced and diced into various tranches of CDOs. Stephen Mihm, *The Black Box Economy*, BOSTON GLOBE, at [http://www.boston.com/bostonglobe/ideas/articles/2008/01/27/the\\_black\\_box\\_economy/](http://www.boston.com/bostonglobe/ideas/articles/2008/01/27/the_black_box_economy/) ("The drumbeat of bad news over the past year, they say, is only a symptom of something new and unsettling - a deeper change in the financial system that may leave regulators, and even Congress, powerless when they try to wield their usual tools. That something is the immense shadow economy of novel and poorly understood financial instruments created by hedge funds and investment banks over the past decade - a web of extraordinarily complex securities and wagers that has made the world's financial system so opaque and entangled that even many experts confess that they no longer understand how it works.").