



The Black Box Society: The Secret Algorithms That Control Money and Information

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Every day, corporations are connecting the dots about our personal behavior--silently scrutinizing clues left behind by our work habits and Internet use. The data compiled and portraits created are incredibly detailed, to the point of being invasive. But who connects the dots about what firms are doing with this information? *The Black Box Society* argues that we all need to be able to do so--and to set limits on how big data affects our lives.

Hidden algorithms can make (or ruin) reputations, decide the destiny of entrepreneurs, or even devastate an entire economy. Shrouded in secrecy and complexity, decisions at major Silicon Valley and Wall Street firms were long assumed to be neutral and technical. But leaks, whistleblowers, and legal disputes have shed new light on automated judgment. Self-serving and reckless behavior is surprisingly common, and easy to hide in code protected by legal and real secrecy. Even after billions of dollars of fines have been levied, underfunded regulators may have only scratched the surface of this troubling behavior.

Frank Pasquale exposes how powerful interests abuse secrecy for profit and explains ways to rein them in. Demanding transparency is only the first step. An intelligible society would assure that key decisions of its most important firms are fair, nondiscriminatory, and open to criticism. Silicon Valley and Wall Street need to accept as much accountability as they impose on others.

The Black Box Society: The Secret Algorithms That Control Money and Information Details

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From Reader Review The Black Box Society: The Secret Algorithms That Control Money and Information for online ebook

Hadrian says

In The Black Box Society, there are two meanings of "black box" - the first is the valuable and almost indestructible recording devices found on airplanes. The second is a system where you cannot identify its mechanisms - where you cannot tell how input becomes output.

Pasquale focuses on there areas of 'black box' algorithms: reputation, search, and finance. Reputation is how algorithms rate and describe individuals, inferred from their visiting and consumption patterns online. Search is closely related to this, describing our habits and beliefs based upon search patterns. Finance depends on both of these, where complex programs attempt to describe investor behavior and who would be allowed to access markets and credit. Algorithms have penetrated these fields to such an extent that human beings are classified and sorted out without any other human input at all, and the imperfect nature of the sorting methods leads to unintended risk - a malfunctioning program led to the 'flash crash' of 2010. But these market algorithms are not inherently an issue - it is when flawed algorithms are used as a rationalization of poor business decisions, and a means to feign ignorance of structural issues.

The point is that these algorithms are imperfect tools, and are too easily misapplied or manipulated. There is also a major lack of transparency, in both technical and legal terms, about the nature of these algorithms. If this book leads to a more informed public on the issue, so much the better.

Lars K Jensen says

This book gets it title from double-meaning of the term 'black box':

It can refer to a recording device, like the data-monitoring systems in planes, trains and cars. Or it can mean a system whose workings are mysterious; we can observe its inputs and outputs, but we cannot tell how one becomes the other.

Pasquale has his sights set on the worlds of technology and finance, since it's here we find the most rampant use of algorithms. Here in Europe I imagine we are most familiar with the tech algorithms, brought to us by especially Google and Apple. Certainly the level of 'scoring' on US citizens surprised me. You guys are rated *all of the time*.

If you are really into the issues of algorithms and privacy, you might not get a lot of new knowledge from this book, but I feel I did. For instance, I hadn't heard of 'fusion centers' (read about them on Wikipedia) before I opened this book. The close connections between the regulators and the regulated in the world of finance were also news to me. And did you know that you might be labeled a terrorist for doing undercover reporting from some of the factory farms in the US?

I enjoyed huge parts of this book, but I have to admit that the chapter on finance/Wall Street was quite a test to get through. There are so many acronyms, terms and so on - and I found my focus slightly drifting. If you're looking for a crash course on what went wrong in 2008 this ain't it. Fortunately I had read a bit about

CDOs (again, Wikipedia) so I wasn't *completely* blown away - but it *is* the weaker link in the chain of the book. I guess it's the way it has to be, since the world of finance is the way it is - and Pasquale does say so himself, that he won't go into a look at who did what, when the market crashed.

The finance chapter makes good sense, though, when we get to the two last chapters, where Pasquale comes up with suggestions instead of merely pointing the finger. Pasquale believes that much can be learned from the ways in which health care fraud is being fought and that the Human Genome Project can act as a kind of role model on how many and which resources an oversight might require.

I'm not sure if you can fully enjoy/understand these chapters without the Wall Street chapter - but read it and hang in there, you'll make it, I'm sure :-)

As will all books with footnotes it's a 'notes on same page' vs. 'notes in the back of the book' discussion. Here the notes (and there are a ton of them!) are at the back of the book which makes me...not read them. Since there are so many, I would have preferred to have them on the same page as they are being referenced. That way my take-aways from this book might have been even better.

Don't let that fool you, it's still an interesting read, and if you ever touch or affect an algorithm (and we all do) you should consider reading it.

Some other reviews/mentions of 'The Black Box Society' you should definitely read:

- * Steven Aftergood / Nature
 - * David Auerbach / Slate.com
 - * 'The Scoreboards Where You Can't See Your Score' (Natasha Singer / The New York Times)
 - * 'Insure People Against Genetic Data Breaches' (Frank Pasquale / The York Times (opinion piece))
-

Simon Crowe says

In cybernetics a black box is a potentially complex system that is inscrutable and opaque to us but for the information that is fed into it and that which emerges from it. The book contains a considerable array of information on opaque systems and practices within credit ratings, search engines and algorithmic trading and sets out the flaws in these practices. Instead of proposing radical solutions, it suggests a raft of sensible policy changes that may ameliorate some of the damage done by opacity within finance and big data. In this sense, is written in the vein of James H. Moor's influential 1980s theorising of computer ethics, in that it concerns itself with filling the policy vacuums that arise from the introduction of new technologies.

There is no doubt that there is good material here, and much needed critical thinking on the vast and powerful institutions of big data and finance. What costs Pasquale a four star rating is that in my view the introduction fails to see the wood for the trees and the body of the text fails to do the opposite. The introduction doesn't adequately set out an argument let alone posit a compelling one and the following chapters lose themselves in a litany of facts and accounts without much of an overarching structure.

N.D. Hendrix says

Disappointing. Proceeds as a series of anecdotes with commentary, rather than having any sort of

overarching story to it.

Wendy Liu says

[the very last book in my 2017 reading challenge!!!]

Covers similar ground to Jaron Lanier's *Who Owns The Future?* but has a much better take imo.

GS Arnold says

While I can't say that I agree with everything in the book, it is most definitely eye-opening and suspicion confirming at the same time. I feel that folks who want to be informed of things in our rapidly changing society ought to engage with the ideas presented in this book.

In particular, I think some focus on the issues here rather than some of the other circuses we've focused on in the past couple of years would be beneficial in many ways for our nation.

Jen says

I got rather tired of the google-bashing, but overall this is an important book to internalize. Here is a question. On page 114, Pasquale writes, "Just as an unduly high credit score could help a consumer get a loan he had no chance of paying back...". Don't credit scores determine your interest rate, not the amount of the loan you qualify for?

Sarang Shaikh says

"Facebook defines who we are, Amazon defines what we want, and Google defines what we think." - A complete book to understand how machine learning, big data, and artificial intelligence will be revolutionizing our lives in near future to cause data privacy, cybersecurity and bias issues.

Clare O'Beara says

"Corporate secrecy expands as the privacy of human beings contracts."

Looking at the amount of data being amassed about each of us, the transparency or lack of it around use of this data, and the fact that it can be sold again and again, including to governments, the author warns us about the black box - the data recorder, the unknown workings. He tells us that giant corporations, banks and dodgy dealers benefit.

Well, just the other day Western Union was fined mightily for enabling money laundering activities for many individuals and groups. They had a threshold in place above which money transfers abroad needed authorisation, so of course such transfers were split in two. It's not hard to think up, folks. Nobody in Western Union cared, because they were doing business. We're told that the money laundering activity went unchecked for years, but the fine equates to nine months of profits. Well, nobody will do that again then, will they. I believe it is time that individuals were held personally responsible, from top down.

I run serious ad blockers on my computer. Any time I use an unsecured computer or phone I am astonished by the absolute rubbish ads that proliferate, and if you accidentally hover a cursor over them, on some computers, that is enough to unleash a torrent of screens about get rich quick schemes, gambling, fast weight loss, millionaire homes; nothing I would ever want to see. The ads follow the computer around through the browser. The ads alone would be enough to drive anyone to use the net incognito. Then there's the creepy way that search engines follow your tracks. Marketers want to know what they can sell to whom. We're told here that joining the wrong facebook group can raise a red flag for employers checking applicants. Personally I stay away from facebook. They keep changing the privacy settings every few months, specifically so they can sell customers' data, and have sold everything, your kids' photos and all, to a Russian based search engine. You can't get it back. And they put zombie cookies on your computer, that reappear after you disinfect it.

The author warns that even searching on health apps can ruin your chance of getting health insurance. Because the firms don't want to insure sick people, do they? The author says one percent of patients account for a fifth of health care costs. My recommendation is to use a search engine just to go to Wikipedia. You may find an article on your health issue by in-site searches and links underneath to actual medical research papers. All Google knows, we hope, is that you went to Wikipedia. There's a search engine that does not record your searches. Duckduckgo.

Target, a US retailer, went after tracking pregnant customers. They compared purchases made by those who had signed up for a baby club with the general run of customers, and where correlations existed they sent pregnancy and baby related ads. Some customers found this creepy. I would. The author says the process was revealed by a journalist, Charles Duhigg, in 2012. Target stopped talking to Duhigg. A couple of years later, hackers stole the stored details of 110 million customers. Other firms just sell all your data and someone else can easily combine two lists, the author points out, say of cancer patients or marriage counselling sessions and credit ratings.

To help us keep terms clear, we're given a useful table early on: first party tracking is a person using a fitness app, home finance software. Second party tracking is Amazon noticing you buy a diet book, or a supermarket logging your purchases in a database. Third party is when an intermediary logs data about what you have done, like a search engine or a credit card company. Fourth party is a broker buying up lists of data about someone else's customers, and typically combining lists.

The unknown data being stored and used can, we are told, lead to one luxury purchase adding to the prices of the next goods we search for online. My thought; shop with cash in a real shop and don't use a store card. We don't even have RFIDs mentioned. Media scholar Joseph Turow says firms decide on data whether we are targets to them, or 'waste'. Nice. Reminds me of the 'dead peasants' life assurance stealthily taken out by a retailer on its workers and revealed by Michael Moore in the film 'Bowling For Columbine'.

Workers are routinely under surveillance and sign away all rights in this matter. And the most-watched jobs can then be done by automation. Hiring is a hugely automated process to weed out applicants; I like that Barbara Ehrenreich is referred to when she went undercover at Walmart in 'Nickel And Dimed'. Algorithms are not explained to users and may just be tracking information from past users, not programmed to discriminate in any way.

I note that so far there is not a mention of terrorism. Isn't that what surveillance is supposed to be about? We next get government (US) involvement in surveillance, but on its own citizens at protest marches and Occupy Wall Street movements. "\$150 million of taxpayer money going to equip a government facility in lower Manhattan where Wall Street firms, serially charged with corruption, get to sit alongside the NYPD and spy on law abiding citizens." To this end, the government may have limits upon its own data gathering powers, so it just buys extra data from data brokers to build complete portraits.

Then we get a look at anti-terrorism. Odd that the men involved in the largest terrorist attacks on USA came from and were funded by countries like Saudi Arabia and Pakistan, none of which were among the seven countries just blocked from travel to USA by President Trump. Nor was Afghanistan. Wouldn't you think his computers would tell him which countries to block?

For crime investigation, we're told Reuters discovered in 2013 that tips were being passed from the NSA - which could have got them anywhere, facebook or Google - to the DEA which gave them to the IRS. The Special Operations Division of the DEA retrospectively fabricated reasons for investigating their targets. This is real black box work. Police and security are increasingly sharing information. And "many security officials go on to lucrative private sector employment." Edward Snowden leaked extensive files in 2013 proving that the security services worked with or otherwise used, telecoms services and big internet sites like facebook and Google.

For those concerned with privacy, we are warned that hackers can steal files from big stores, while your careful privacy settings can be changed by the companies you use; and going to the extreme of using Tor as a browser may flag you up as someone to watch. My thought; not to mention you may be revealing something of yourself to bad company on the dark net. While the very rich routinely hide their money in places like Panama, even the Panama Files breach recently proved that nothing is safe. "James Henry, a senior adviser to the Tax Justice Network, calculated the total amount of money hidden away from tax authorities as between \$21 and 32 trillion."

All this before Chapter Three. The author tells us that he's in favour of terrorist plots and super-rich tax evasion being uncovered, he just dislikes all the marketing. Read on and decide what you agree or disagree with; what scares or delights you or creeps you out about the issues.

Apple and apps, Google and SEO rankings, Twitter trends, customised web searches (which means you get different results if the search engine knows who you are, rather than in an internet cafe), the sheer scale of enterprises like Google or Amazon. And don't forget facial recognition, barely mentioned. All this and more. Like content providers charging more in future if you access someone else's content, or making the access slower. But we read that like old pirate radio, the originally illegal download sites such as Youtube have been cleaning up their acts and protecting copyright. Legislation is trying to keep up with tech. Financial dealings and failures are looked at in another chapter, ever more murky. Including derivatives; bets on whether a share price will rise or fall, without investing in the shares. Gambling. "In 1994 Orange County, California.... (went) bankrupt after its treasurer lost \$1.7 billion of its \$7.4 billion investment portfolio in derivative bets." You what?

To be fair, the author doesn't just complain. He suggests ways of regulating, watching and fining the watchers. Of forcing them to share with you what they know about you and where they have sold it. Of checking how much influence any giant company has on the marketplace and the government.

Some issues don't seem to apply to me in Ireland, concerning the First Amendment and so on. But where are these companies headquartered? Nowhere in the world, if you ask Apple, which was recently judged by the EU to have fraudulently claimed a non-existent head office in order not to pay tax. Most tech giants though, seem to live in America. American health care fraud, which included patients being given treatment they didn't need, inflated time charges and imaginary patients, could really apply anywhere. Computer systems are flagging inconsistencies. We are told that the US "fell to 47th in Reporters Without Borders' Press

Freedom Index," largely due to harassment of investigations of factory farming and the Wall Street protests. This matters to the world. High finance companies siphoning off money from every transaction you make, or fund you invest in, and interest as well, mean that "the New Economics Foundation calculated that leading London bankers 'destroy £7 worth of value for every pound in value they generate.'" I'm sure it's not just in London.

The author proposes that surveillance should be used, not against the law abiding, but against corporate greed and waste. I support that view. This is a fascinating book which will reward a read. You can find some of the same content elsewhere but this is comparatively easy to read and doesn't get bogged down on any one topic for too long. I noticed no mention of ANNs or artificial neural networks, also called AI or artificial intelligence (which is mentioned in a later note). I don't think they are outside the scope of a book on black boxes and indeed are the next step.

Notes occupy pages 211 - 306, index to 311. I saw 14 names I could be sure were female in the index. I counted 127 names I could be sure were female in the body of the detailed notes and references. Pasquale cites many journalists but is himself a Professor of Law at the University of Maryland and a member of the Council for Big Data, Ethics and Society.

Morgan says

This book, particularly the first three chapters, really made me think critically about society, technology, information, and freedom. The idea behind a "black box" didn't originate with Pasquale, but he is referring to it in two ways: first, the keeper of information (e.g. a flight's coordinates), and second, a mysterious box with inputs and outputs--computers, the human brain, cars, and so on. The problem is that increasingly these boxes, in the latter definition, are increasingly opaque and obscure what's really happening. These technological differences are also scary because, unlike mechanical objects, which can be stripped to their barest parts, newer technologies have no obvious parts. We are also largely unaware that we live in a black box society.

Pasquale points out the many ways our data is stored, shared, and cataloged without our knowledge or consent. Even when we do agree to certain practices, there is literally nothing preventing Big Data (as he calls it) from breaking those agreements. Facebook doesn't actually honor its privacy policies, which was demonstrated by court cases he cites. Employers buy data to determine if job candidates have higher inclinations towards diabetes or other diseases, which will cost the employer more in health care costs (and reject the applicant). Credit cards use internet searches to determine a couple's marital status--a couple in counseling (determined by internet search algorithms) to raise a couple's interest rates. And so on. Nearly everything we do is tracked. **AND WE HAVE NO WAY OF KNOWING THIS.**

There are 86 pages of notes. Pasquale uses numerous lawsuits, court cases (at many levels), peer reviewed articles, interviews, government hearings, and a variety of other sources to support his claims, so this is far from a Fox Mulder-like conspiracy theory.

This isn't all terrible--he isn't a Luddite arguing for the end of technologies. In fact, he highlights many positive aspects of improved technology in our lives. Yet there is this entire sector of the business world that is dedicated to buying, selling, collecting, harvesting, and controlling our data. Our social media usage, who we like, and what we say. Our health and medical records. Our phone calls. Our credit rating. Our shopping preferences. Target even figured out when shoppers were pregnant and began targeting (haha) their ads with pregnancy-related items.

The government is in many ways helpless, because they lack the power to do real damage or enact any serious sanctions on Google, Facebook (primarily those), and others. Google was fined \$25 million in a case, which is an astronomical fine, but when they make more than that in a day, what does it matter? Facebook might change its policies, but that doesn't mean those policies won't change again. And how are we as consumers to know?

Pasquale's writing style is highly accessible, free of theory and academic jargon (though there are plenty of tech jargon and government acronyms) and so therefore it's easy to follow his points. This book offers some solutions, but overall, this book highlights many, many issues that we are unaware of, no matter how closely we watch our credit reports, pay attention to the news, or attempt to keep information secure. Our lives are impacted in ways we are completely unaware of, and it's frightening to realize that. But, as the saying goes, the first step towards fixing a problem is admitting there's a problem, and in many ways this book is that first step.

Leif says

I wasn't thrilled.

Let's get this out of the way first: Pasquale's got his head squared on his shoulders the right way. The topics are engaging and genuinely pressing areas of public policy, and he uses examples from history that are illustrative and helpful. Issues like algorithmic prejudice, speculative data financialization, and shadowy technocratic governance are super important and super complex, and I value any intelligent confrontation with them. So that's all here, and it's all good.

For some reason, however, I found Pasquale's writing both accessible and impenetrable. Walls of text would slip past me and I wouldn't be able to piece together a coherent narrative or story; after reading entire chapters on a good unified topic – "search", for instance – I couldn't tell you Pasquale's key contention. I highlighted, took notes, and thought about the text, but organizationally and stylistically it couldn't hold me and I couldn't hold onto it.

So that wasn't too great.

At the end of the day, read about this, yes, please. There are other introductions to the subject, however, and you might be better off looking up those.

Jacob Naur says

Gives a great overview of the problems in tech and finance.

The book could have been a bit longer with more in depth explanations, but as a starting point if you are interested in the effects of digital black boxes on politics, the economy and society I do not think anyone has done a better job.

The book basically asks questions and we fail to respond adequately at our peril. In the EU we hope the GDPR will cure some of the diseases in tech. We will see about that.

Anandh Sundar says

Have you ever why your credit limit differs from your friend who earns around the same? Why do creepy ads follow your social media and email(Facebook/Gmail)? What are the drawbacks of taking your activity online whether it is medicines purchase or online shopping? Why do technology companies insist on full data/rights/cookies from you but protect their own trade secrets?Why is your resume getting no interview calls(hint-this could be a simple tweak). In this book covering multiple domains, Frank makes a passionate case about why we should bother about the impersonalization of decisions and the need for more human judgement and regulation for areas to avoid bias. While we may not be able to presently 'code for neutrality', this is where we may need to increase human intervention or localization, and perhaps reduce the jobless growth. A book which led me thinking way after putting it down

Andy Oram says

This book is both a litany of problems caused by the unethical use of data and a call for reform; both are useful. The first 140 pages of the book boil down published news and technical reports about credit ratings, privacy violations, biased search engine results, rogue spies, and similar issues in data mining. These chapters will furnish a review for people who have kept up with such trends for legal, policy, or technical reasons, but will probably provide all readers with new information as well. The book really unveils its unique value in Chapter 5, which suggests practical ways to fix (or at least ameliorate) the problems. As a lawyer, Pasquale concentrates on social and policy issues, so he doesn't explore the technical aspects of deploying algorithms, such as the use of genetic algorithms that take them even further from human values. Among Pasquale's ideas worth discussion are Institutional Review Boards for data brokers (on the model of IRBs for academic research), a requirement that reputation brokers reveal some of their criteria (which will rule out crude and biased criteria), making immutable logs of the database queries scoured by government spies in search of terror suspects, and requiring a regulator to approve new financial instruments. I like one of his fundamental principles: if an algorithm is too complex to be understood by reasonably intelligent people, it's too complex to use. More fundamentally, he persuasively challenges the notion that the processes used by online firms and brokers to rate and classify people should be opaque and protected from scrutiny by trade secrets or other intellectual property rights. I also like his calls for directing our resources away from tracking citizens and toward tracking financial and Internet firms, and his suggestion that computing power could help direct society's resources toward beneficial use.

Ian Vance says

"...when powerful actors are profiting from failure, we can probably expect a good deal more of it in the future." (p. 191)

"...The grand illusion of contemporary finance is that endlessly processing claims to future wealth will somehow lead to a more productive economy... there is a good reason that these entities strive so hard to keep their methods secret: pull the curtain, and the economy's wizards look like little more than organizers of contests they'd never be able to compete in." (201)
