

MIKE DOVER LEADS YOU IN UNDERSTANDING THE DARK SIDE OF TODAY'S TECHNOLOGY. MY ADVICE: READ, UNDERSTAND, AND REACT.

B. Joseph Pine II, *Co-author of The Experience Economy*



DANTE'S INFINITE MONKEYS

TECHNOLOGY MEETS THE 7 DEADLY SINS

MIKE DOVER

Co-author of WIKIBRANDS

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Joe Weinman, *author of **Clouconomics** and **Digital Disciplines***

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Humber Press
205 Humber College Boulevard
Toronto, Ontario, Canada M9W 5L7

www.humberpress.com

Printed in Canada

Library and Archives Canada Cataloguing in Publication

Dover, Mike, 1968-, author

Dante's infinite monkeys / Mike Dover.

ISBN 978-1-928189-12-1 (paperback)

I. Deadly sins. I. Title. II. Title: Infinite monkeys.

BV4626.D69 2016

241'.3

C2016-905394-6

DANTE'S INFINITE MONKEYS

TECHNOLOGY MEETS THE **7** DEADLY SINS

MIKE DOVER

 **HUMBER
PRESS**

For the monkeys

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Introduction: Sin.com

The Internet has an incredible power to connect us in new and meaningful ways, to delight us and enlighten us, and to extend our capacity for good, compassion, and support. Indeed, many books have been written about the Internet as a force for good. This is not one of those books.

Instead, we will explore how the Seven Deadly Sins became manifested in the modern world and how they have been transformed by technology. The Internet allows us to access all of humanity's knowledge, but also to argue with strangers, stalk ex-partners, and find out how much our neighbour's house is worth. Personal privacy is disappearing; criminals, corporations, and governments easily evaluate our data. Social media simultaneously drives narcissism and jealousy.

We're not just talking about the Internet on computers and phones—there is a lot more. The Internet of Things (IoT) refers to the network of physical objects that contain embedded sensors and network connectivity enabling them to collect and exchange data. Researchers from Gartner and other organizations estimate that the IoT will consist of almost 50 billion objects by 2020, a number that will explode over subsequent decades. Your refrigerator will be able to conduct real-time negotiations with competing power concerns for the best electricity prices while coordinating with your physician about

diet changes (after consulting with your smart toilet) and communicating with online retailers—and eventually your 3-D bio-printer—to restock groceries. All good news on the surface, but also a fantastic opportunity for criminals. A connected device is a hackable device. Perhaps the smart toaster or the smart toothbrush is the weakest link in the house—once a bad actor compromises those, the more valuable targets will soon follow.

Of course, there are worse crimes than property theft. A quick search on YouTube turns up videos showing drones armed with automatic weapons. Recipes for explosives and difficult-to-detect poisons are easily found online as well. Technology can also abet more subtle murder methods. A pacemaker can be corrupted and reprogrammed to shut down or dangerously accelerate (spoiler alert: this happened to the Vice President in season two of *Homeland*). In the not-so-distant future, when medication will be delivered via 3-D printing, the instructions could be hacked and altered. Targets with allergies, high blood pressure, diabetes, or other ailments that require constant attention are at risk from even a minor alteration. In any case, stalking victims to plan the crime is much easier than it has ever been, either by hacking into a GPS phone or by placing a traceable device such as a Tile on their person.¹ Not to mention we can always find out a staggering amount of information about each other simply by checking social media.

Beneath the “surface web” the true depravity can be found in the less accessible areas of the Deep Web.² Confusingly, this term is often conflated with the DarkNet (also “the Dark Web”), which consists mostly of peer-to-peer connections and anonymity networks such as Tor.³ Journalist Jamie Bartlett built an anthology of the represented subcultures of the Deep Web, including social media racists, cam girls, self-harm groups, illegal drug sales, and crypto-anarchists.^{4,5} In addition to these categories, this economy also trades in stolen identities (including credit card information), traditional and cyber-weapons,⁶ all manner of pirated media files, counterfeit currency, and even nastier activities, including human trafficking, murder, and worse.⁷

Silk Road and the Young Libertarian Merchant

Silk Road, named after the ancient network of routes connecting China and other Eastern empires with Mediterranean communities, was an early, prominent DarkNet black market. Launched in 2011 by Ross Ulbricht (who operated under the pseudonym Dread Pirate Roberts), the site operated as an illicit eBay, with goods and services exchanged for Bitcoins (a digital currency—this and other technical terms are defined in the glossary). These

exchanges were conducted in an anonymous and difficult-to-track manner. By 2013, there were more than 10,000 products for sale, including illegal drugs (the majority of items available for sale), pornography, and fake driver's licenses.⁸ Like eBay, Silk Road acted as the trusted intermediary between buyer and seller, holding Bitcoins in escrow until delivery of goods was confirmed. Buyers rated sellers on aspects such as product quality and delivery speed. A detailed user's guide advised customers on practical issues such as how to properly vacuum seal envelopes so that drugs inside could not be detected by dogs or electronic sensors.⁹

After a complicated investigation and a carefully choreographed arrest at a San Francisco library (with cybercrime, it is essential that an active computer be confiscated quickly before the perpetrator can initiate a permanent encryption procedure), Ulbricht was convicted of money laundering, computer hacking, and conspiracy to traffic narcotics. He received a life sentence without the possibility of parole. Ulbricht still faces charges in the state of Maryland for trying to order an assassination—online, of course.

Bringing down the lead bad actor of course, does not mean that the good guys prevailed in the game of online criminal whack-a-mole. Several months after Ulbricht's arrest, Silk Road 2 opened for business. It, too, was quickly shut down by officials. But it seems that no matter how fast or how often these sites are taken down, others rise to take their place. Indeed, more seasoned and sophisticated criminals would run their operations without Ulbricht's careless coding mistakes, the hubris of adopting the Dread Roberts persona of roguish libertarianism, and the giant mistake of operating an incriminating laptop in a public library surrounded by undercover FBI agents.

What might Ulbricht have been like pre-Internet? Certainly, there have been many smart, privileged young men with a libertarian bent before him. Most of them were content to devour Ayn Rand books and maybe sell weed to other disaffected youth. It would not have been possible to become a master criminal—and certainly they could not have hired an assassin (complete with Yelp-like ratings) from their personal networks using a pay phone and rolodex.

Meaning of Sin in a Facebook World

Listing the Seven Deadly Sins has never led to their eradication, and today many would argue that the Internet, and technology in general, have provided new ways for Wrath, Lust, Gluttony, Sloth, Pride, Envy,

and Greed to insert themselves into our lives. The Internet's capacity for good is matched only by its capacity to empower evil—at least from a sociological perspective.

Graham Tomlin, a Principal of St. Paul's Theological Centre at Holy Trinity Brompton in London, breaks it down for us:

*There was a very simple reason why the word 'sin' had such a ghastly aura about it in the past. Sin was not harmless transgression of some random moral code designed by medieval clerics. For our ancestors, 'sin' described a pattern of life that was quite simply destructive. It destroyed families, friendships, happiness, peace of mind, innocence, love, security, nature and, most importantly our bond to our creator. It wrenched us out of our proper place in the world.*¹⁰

Today, many of the Sins seem curious, even harmless, and in most cases their personal and social impact has dramatically changed from when the list was conceived. Take Sloth, for example. Today, we might think of Sloth as a “no victim, no crime” situation. If you're lazy, you only harm yourself. But in earlier times, if a member of the community was too lazy to get their crops in by winter, or didn't secure the sheep pen properly, the rest of the community would also suffer the loss, having to support him or her with their own meagre supplies, possibly threatening the health or survival of the entire group. Deadly? You bet.

How serious a Sin is perceived by society varies by era. In Dante's *Divine Comedy*, the protagonist leaves fourteenth-century Europe to tour the Nine Circles of Hell. During the journey, he and his guide Virgil view The Tormented as they suffer for their Earthly sins in a transgression-appropriate manner. After we have abandoned all hope,¹¹ we encounter more grievous sinners the further we travel. At the Ninth Circle, we find Dante's most evil sinners. This rogues' gallery includes Marcus Junius Brutus and Gaius Cassius Longinus (better known to most of us as Brutus and Cassius, conspirators in the death of Julius Caesar). Dante casts them amongst the worst people who ever lived because, through their roles in the assassination of a head of state, they displayed disloyalty to both the State and the Church (leaders were seen as ordained by God). Did they betray their compatriot? Yes. Did they kill a guy? Sure. But are they the worst human beings ever to have lived? Certainly not by any reasonable standard. They had political reasons other than naked ambition for their actions, and many years of public service under their togas.

Similarly, our perception of “how evil” an individual is changes over time. Alexander the Great is remembered more for his accomplishments, including generalship, civic development, and greater trade and communication between the major civilizations of Asia Minor and the Far East. Less often discussed is the savagery committed during his campaigns, including grievous human rights abuses and what today we call war crimes. If we were going to make baseball cards for historical evil, Alexander’s stats would pale in comparison to Genghis Khan’s, whose rule was enforced by genocidal murder, mass rapes, and enforced slavery on conquered people—those he didn’t outright slaughter. Still, visit Mongolia today and you will hear stories about Khan as a great leader and hero.

It Was the Blurst of Times

I should probably explain the book’s title. The Infinite Monkey Theorem posits that if an infinite number of monkeys typed randomly (on typewriters) for an infinite amount of time, they would eventually reproduce the complete works of William Shakespeare.¹² The theorem has popularly (but inaccurately) been appropriated to describe the vast amounts of content generated by people hammering away at their keyboards.

The Theorem is meant to illustrate the concept of infinity—the actual numbers involved in the thought exercise are very hard to comprehend. For example, imagine you gathered a million monkeys and gave them a simplified keyboard with only the twenty-six English letters and a spacebar (navigating the mechanics of the shift key is probably too much to ask). If those monkeys typed at a rate of 100 words per minute, it should take them 221,118,476,701 years to produce all the permutations of eighteen-character fields such as the line “to be or not to be.” In case you weren’t fazed by that amount of time: it is about sixteen times longer than the current age of the Universe.¹³ American programmer Jesse Anderson used Amazon’s EC2 Cloud Computing system to simulate the monkeys and found that the project did, in fact, recreate the works of Shakespeare.¹⁴ It should be noted, however, that his methodology of generating nine-character sequences then comparing them to nine-character sequences in Shakespeare’s work is not the same as creating a single correct document. His virtual monkeys created a lot of flotsam in addition to the many fragments of *Two Gentlemen of Verona*. Of course, real monkeys aren’t naturally inclined to be typists. During a 2003 experiment, six Sulawesi crested macaques were provided with computers, but were

only able to produce five pages of text— mostly the letter S. In addition, the would-be Bards smashed the keyboard with a rock and used the computer as a lavatory.¹⁵

Spoiler Alert: Technology by Sin, a Sneak Preview

The Internet enables Greed whether it happens through legal or illegal means. Criminals certainly embrace new technology tools. The generous offers in your inbox from Nigerian princes appeal to the same sense of avarice and mystery as the letters from “Spanish prisoners” hundreds of years ago— only now, thanks to email, they can be sent hundreds of millions of times per day at almost no cost. When criminals monitor prospective victims’ keystrokes and web activity, they can assume their identities, use their passwords to access bank accounts, and customize fraudulent propositions to appeal to their motives, fears, and vulnerabilities. “Click farms” commit rampant fraud that threatens online advertising’s viability. Hackers attack corporations, steal information, and then demand payment to get it back. High-frequency stock trading uses algorithms to strip value away from legitimate trading, offering riches to perpetrators who add no value to the overall market. “Jerktech” is a loathsome practice in which Silicon Valley “disruptors” create apps to monetize a good or service that was previously available to the general public for free.

Wrath can be seen through the eyes of “Internet trolls,” people who deliberately harass or try to get a rise out of a target, often purely for sport. Organized online armies collectively attack targets, sometimes in the name of an overarching philosophy or viewpoint. “Name and shame” has become a bewilderingly acceptable practice. Technology makes it easy for people to monitor each other and social media provides an easy and effective platform to share outrage and disseminate mob justice. Speaking of mobs, we will explore online vigilantism—both its potential benefits and its many flaws. Another online phenomenon is tribalization of Internet communities that grow to demand close adherence to rules and social norms. Pro Tip: don’t sign up for an “Ask Me Anything” on Reddit unless you are truly prepared to answer any question.

Envy has come a long way thanks to democracy and capitalism. The lifestyle of the Rich Kids of Instagram could be yours, too—it’s only a successful app away. Even down below the rarified air of the super-rich, it is easy to be envious of others, since many aspects of our lives are quantified and easily discoverable online. Zillow tells anyone with your address how much your house is worth; Glassdoor.com provides a reasonable estimate of your

salary; and your tally of Facebook friends, Twitter followers, and Instagram admirers is openly available. And, if you feel inferior, it is easier than ever to launch an attack against your enemy. Visit any online comment section and you will find that successful people are just lucky or not as talented as their anonymous critics.

You want Lust? The Internet offers a wide range of easily accessible debauchery. When Marge Simpson hears her unwanted houseguest brag that he “invented a program that downloads porn off the Internet one million times faster,” she responds sensibly (as she does): “Does anybody need that much porno?”¹⁶ And we will explore “Rule 34,” which states that if something exists, there is also a porn version of it, suggests that, as a group, it seems we do. Technology fundamentally changes dating as well—accepting or rejecting a potential Tinder suitor with a swipe alters power dynamics and may even recast all romantic decision-making as a binary “yes/no” model. Futurists assure us that sex will become more infused and intertwined with technology. How will sex and romance be transformed by virtual reality, haptic sensors, and teledildonics?

Technology makes many tasks easier—a worthy goal. But when humans adapt technology or over-rely on it to exempt themselves from the necessary work involved in healthy development, it feeds the Sin of Sloth. Compared to its dead-tree predecessor, Google Maps are cheaper (virtually free), more accurate, easily updatable, and better for the environment. However, relying on Google Maps, especially when accompanied with voice commands, can significantly reduce a driver’s ability to navigate without technological help. Similarly, why learn to spell if the red squiggly line lets you know if you’ve gone astray? Why bother wasting neural pathways memorizing facts that can easily be Googled? You don’t need to know your friend’s phone number once it is entered into your phone, and Facebook will remind you of their birthday. We’ll explore the pros and cons of technical over-reliance as well as discussing “slacktivism”—a method of appearing to support a cause or issue while expending the absolute minimum effort.

When the word “selfie” was added to the Oxford English Dictionary, it could have been interpreted as the purist evidence of technology-enabled Pride. That is, until two years later, when “selfie stick” was added. If social media does not cause narcissism, it certainly enhances it. Millennials pay particular attention to the image they can craft on Instagram: using a professional headshot for your profile picture has become a legitimate phenomenon. In fact, Instagram filters were important inspirations for baby

names in 2015 (Lux, Valencia, Juno, Reyes, Ludwig, Amaro, and Willow were the favourites). We will explore the “humblebrag” and discuss how barriers for amateurs to compete as writers, publishers, singers, and filmmakers have been greatly diminished. Also, we’ll look under the Wikipedia hood. Overall, the online encyclopedia is a massively impressive accomplishment, yet egos, territoriality, and bullying hold it back from its true potential.

Of all the Sins, the meaning of Gluttony may have changed the most since the list was compiled, but technology has absolutely changed our relationship with food. Thomas Aquinas broke Gluttony down into six separate categories—only one, *Nimis*, described eating too much food. *Ardenter* (eating too eagerly) seems, to a layperson, synonymous with *Forente* (eating wildly), while *Studiose* (eating too daintily) indicates that it was very difficult for a medieval churchgoer to dine free of guilt.¹⁷ Dining manners have certainly changed. Old-school food critics had to use subterfuge to disguise their note-taking while seated in restaurants, since doing anything but dining at table was considered highly improper. Today, we are treated to artistic photos of other peoples’ meals with disturbing frequency, and many restaurants decry how smartphone use slows down meal service. For many, food has a sensual quality, so we see how Gluttony and Lust may overlap with the help of webcams. Finally, if we evaluate Gluttony from a meta level, we see that no matter what interest you have, the Internet provides you with as much content as you want and almost certainly more than you could ever hope to consume.

Buckle up, we’re about to dive deeply into the worst of humanity that technology can serve up.

Technology, Sin, and Dialectics

Technology has provided great benefits to society. We live healthier, longer lives than previous generations (although lifespans in the developed world may dip for the current generation before increasing again) and have access to far more information than ever before.¹⁸ But, for all this, technology's benefits come with a dark side. A dialectical battle between good and evil is inevitable as technology becomes more advanced and more ubiquitous. Once artificial intelligence exceeds human intelligence (by 2029, according to futurist Ray Kurzweil), will our ethics and morals still be relevant?¹⁹

Computers have already bested humans in brains as well as brawn. IBM's Watson deployed powerful and agile artificial intelligence to defeat two *Jeopardy!* champions: Ken Jennings (of the seventy-four-game winning streak) and Brad Rutter.²⁰ An obsessive trivia geek gadfly (cough) would point out that the 2011 version of Watson would not have bested Jennings and Rutter if the game played was Trivial Pursuit, as the human players knew many of the *Jeopardy!* answers that the computer answered correctly, but they were at an impossible technical disadvantage.²¹ As you probably know, *Jeopardy!* contestants "buzz in" in order to have the opportunity to answer the question. If they do so too early (before host Alex Trebek is finished reading the "answer"), not only does their buzz not count, they are

also penalized so that they are unable to try again for a quarter of a second. Watson, on the other hand, when confident in “his” response, takes only ten milliseconds to buzz in once Trebek has stopped talking. In any case, this human defence is only true for the current version of Watson. Recall that in 1996, human chess champion Gary Kasparov defeated Watson’s IBM cousin Deep Blue by a score of 4—2. The following year, Deep Blue won the rematch 3½—2½, becoming the first computer system to defeat a reigning world champion under standard chess tournament time controls. Since then, computers have regularly beaten human Grandmasters, including Deep Fritz taking down the undisputed world champion, Vladimir Kramnik, by a score of 4—2.²² Computing power continues to improve and soon Watson and his ilk will be unbeatable in memory and abstract thinking contests.²³ Jennings, with a wry smile, revealed his “Final Jeopardy!” response that contained the meme reference “I, for one, welcome our computer overlords.”²⁴ But should we?

Smart products and killer start-ups that tap into the “sharing economy” seem to offer amazing surface benefits to consumers, but these often come at a cost. The Nest thermostat was acquired by Google in 2014 for \$3.2 billion.²⁵ This innovative smart product pledges to lower utility costs while increasing home security by allowing customers to remotely manage settings. In some jurisdictions the device can negotiate with rival utility companies for the best current rate. Privacy concerns abound, however, as collected data reveals minute details about the household’s activities. If this data gets hacked by burglars, they would be able to optimize break-in times.

Technology makes it easier for citizens to become engaged in their communities, including helping law enforcement, but there can also be a dark side to these digital deputies. Technology also enables vigilantism. Just as in real life, online vigilante justice can be extremely problematic. Vigilantes do not require training and are not bound by police procedure and guidelines—there are far fewer checks and balances to guide the mob. And yet some would argue that there is a valid role for online vigilantes, especially where the “official” justice system is too corrupt or ineffective to serve the community. This situation is most relevant in communities where a crime has been ignored by the justice system and vigilantes insist that attention be paid.

The Keyboard Army Marches On

In 2009, Domino’s Pizza had to deal with a group of stellar employees violating customers’ food, including one worker sticking cheese up his nose

before placing it on a sandwich.²⁶ The mischief was captured on camera and uploaded to YouTube, where it quickly gained more than one million views (copies continued to appear online even after Domino's lobbied to have it removed). Unsurprisingly, thousands of amateur detectives took up the challenge of identifying the store, acting on clues from the videos such as views outside the window and the high school colours displayed on varsity jackets worn by customers.

WikiLeaks's mission—specifically, that information should be free and accessible—resonates strongly with the hacker philosophy.²⁷ So in 2010, when Amazon, Paypal, Visa, Mastercard, and Swiss bank PostFinance cut off access to WikiLeaks, effectively shutting down its funding, hacktivist group Anonymous sprang into action. The subgroup AnonOps mustered thousands of volunteers to work in harmony with two botnets to shut down those companies' websites via orchestrated DDoS attacks.^{28 29 30} When the target companies protested that they were only living up to their corporate mission by cutting off an organization that was violating their terms of use, Anonymous members quickly pointed out that one could still use these methods of payment to support unsavoury organizations such as the Ku Klux Klan. In response, Electronic Frontier Foundation co-founder John Perry Barlow described the campaign as “the shot heard round the world—this is Lexington.”³¹

The Dominos and WikiLeaks examples show the keyboard army in action. Made up of ordinary people with varying degrees of technological know-how, it is a vast, unregulated, and unpredictable element in the online world. As such, and as with all human endeavour, it has both a great capacity to do good and a profoundly dark side.

Let's explore Anonymous some more to find examples of both. Anonymous refers to a loosely associated group with no official organizational structure. It is a decentralized collection of individuals working towards similar goals, typically using the Internet as a communication tool. Due to its nature, anyone can claim membership and while there may be a general understanding of an overall mission, the points of view, motives, and ethics of each member vary dramatically. “Like animal-rights protesters who send anonymous ‘communiqués’ after releasing captive minks into the wild, Anonymous members may not even know each other,” said David Wagner, a computer-science professor at UC Berkeley, adding, “It's a very loose-knit group of troublemakers and hackers...There's no organization anyone can claim to be a part of.”³²

Since Anonymous claims that it has no hierarchical structure, it manifests as close to a pure democratic organization. Within the many subgroups, decisions are based on consensus without top-down leadership. The decision-making process differs widely within Anonymous. In fact, for each operation, decisions are made in a different manner, partially because the makeup of the group changes. Even so, a meritocracy rewarding hacker skills exists, and some groups are very selective about who can join (partially due to wariness of law enforcement). According to McGill professor and Anonymous expert Gabriella Coleman, “in many operations there was a secret group who did a lot of the technical heavy-lifting, others were in more public channels. They would operate by consensus, but if there is an opportunity for someone to overtake that consensus because of their influence in the back-channels, they would.”³³

Anonymous and other hacktivist groups use the Internet to protest (with varying degrees of intensity) various perceived societal wrongs and to attempt to give a voice to the voiceless. Barrett Brown is a former member (often erroneously referred to as a “spokesperson”) of Anonymous and was an early proponent for the group being used to advance social causes. He states, “Anonymous started out as a nihilist kind of organization. It’s a combination of smart alecks—who have an earnest side deep down—but also some of the more commendable activists from the old days. People who are doing a little less ‘sloganeering’ and have been scrambling for a way to make legitimate changes to a dangerous system.”³⁴ Chris Wysopal, cofounder and CTO of cloud-based software firm Veracode, states, “the principle [behind Anonymous] was freedom of expression. It was everyone should have access to the Internet, everyone should be able to communicate and get their message out on the Internet. Even more important in countries where there are oppressive regimes.”³⁵

Other campaign targets of Anonymous have included the Church of Scientology, North Korea on multiple occasions, and the Italian Court System, after four Anonymous members were arrested for allegedly hacking into the computers of the national government and the Vatican.^{36 37} In 2013, the group claimed responsibility for shutting down the Internet service for the Nauruan government after the South Pacific nation suppressed a riot in a refugee processing centre.³⁸ Similarly, African governments that pass anti-gay legislation have been countered by Anonymous members who shut down websites or hack news sites in order to falsely attribute pro-gay comments to leaders.^{39 40}

Government efforts to restrict access to technology are increasingly thwarted. On January 27 and 28, 2010, the Egyptian government shut down the Internet almost completely. While student protests raged in the streets, the government contacted the major service providers and suddenly 93% of the Internet traffic ground to a standstill. Similar to incidents with Tunisia in 2010 and Iran in 2009, supporters from outside the country came to the aid of the Egyptian people. ISPs in Europe, the United States, and other countries enabled Egyptians to access the Internet via mobile phones, Bluetooth, and laptops.

Anonymous has changed the nature of protest, in many ways making it more effective. It allows protesters to organize quickly, to override government controls, and allows many people from multiple locations to participate together in a meaningful manner. It was chiefly due to its influence within international protest movements that Anonymous earned a place on *Time*'s 2012 list of The 100 Most Influential People.⁴¹

In the words of Barrett Brown,

*Those of us who are keen on liberty—particularly those of us who choose to work with Anonymous rather than the various Western governments that have shown themselves to be comfortably complicit with tyranny—are the first to acknowledge that every private entity should be free to deny services to anyone they choose, and for whatever reason. But none of the DDoS [Distributed Denial of Service Attack] ‘victims’ are truly private entities. Each involves itself in the governance of the world’s states in general and that of the US in particular, by way of ‘donations’ to those politicians who regulate the financial industry with occasional success, as well as through such things as the MasterCard International Employees Political Action Committee.*⁴²

So far so good, right? Not all of Anonymous's "attacks" were political, or even principled—many were committed strictly for sport or "lulz."⁴³ Some targets were picked randomly or because they had committed some infraction in the eyes of the community—even something as innocuous as making a spurious comment or for being "too beautiful." Attacks typically consisted of taking over someone's social media accounts and then sending embarrassing messages on that person's behalf. Depending on the target, attacks migrated from cyberspace to the real world—hundreds of pizzas or other goods delivered to an address, or even false "tips" designed to summon a SWAT team (described by an Anonymous user as "a surprisingly easy prank to carry out").⁴⁴

There is debate within the community over whether attacks should only be directed at someone who has committed some sort of “infraction” or whether everyone is fair game. The fact that some Anonymous hackers flooded an epilepsy support forum with “JavaScript code and animated gifs designed to trigger seizures in pattern-sensitive and photo-sensitive epileptics” demonstrated that at least some members were interested solely in malice.⁴⁵

The Enemy of the State vs. Homeland Security

Devices such as the Xbox Kinect and smart Samsung TVs are “always listening” for commands regardless of whether they have been turned on.⁴⁶ Renate Samson, of the privacy campaign group Big Brother Watch, states: “It is a complete invasion of privacy... If every product has the capability of hearing what we say, that stops us being private within our own homes. I don’t think consumers know enough about it. Companies making these products need to think about privacy and security as a priority.”⁴⁷ Microsoft claims that the data is encrypted and will not be used for marketing purposes or shared with third parties, but should we really have blind trust in them?

Tech journalist Zack Whittaker measured how many times various apps accessed his personal data over a three-day period. Even though he expected the privacy invasion to be significant, he was surprised at its gravity. He reported that “over three days, Skype accessed my contacts list 3,484 times. WhatsApp wasn’t much better, accessing my contacts list a total of 2,449 times... Yelp, on the other hand, was far lower, yet still significantly higher than any other app, accessing my contacts list 165 times.”⁴⁸ He concedes that it makes sense for the Uber app to constantly check in during a ride because it needs to build a map of the journey, but it is less obvious why Yelp would need access to a user’s microphone or camera. Accessing a customer’s contact list is an extra degree of odiousness since “your contacts list isn’t just sensitive to you, but it’s also personal information for everyone else on that list. Uploading that data literally thousands of times in just a few days seems more than excessive.”⁴⁹

Many people (but certainly not all) are not overly concerned with corporations collecting their data if by doing so they can offer more relevant goods and services. Governments collecting information, however, present an entirely different problem. In response to government surveillance, two common arguments you might hear are: “if you have nothing to hide, you should have no objection” and “these powers would only be used in extreme criminal situations so law-abiding people need not worry.” These statements

operate on some big “ifs”—the integrity of the government not to abuse your data and the security of the data from unlawful access. Usually when you see a quote on the Internet attributed to Benjamin Franklin (or Winston Churchill, for that matter) it isn’t actually something that he said. In the case of “those who would give up essential liberty, to purchase a little temporary safety, deserve neither liberty nor safety,” the quote is legit Franklin. It refers to the balance between personal privacy and the ability of authorities to identify and punish criminals. Whether or not technology that enables people who want to hide or officials who want to probe is evil often depends on your point of view.

The fact that smartphones contain so much information impacts the balance between public safety and personal liberty. The court case *United States v. Lechuga* discussed whether a phone number written on a piece of paper (in this case a matchbook) found in the effects of someone arrested for drug possession was enough grounds to investigate the owner of that number as a possible co-conspirator. If that logic is extrapolated to a smartphone, the situation becomes radically different. The arrestee might have thousands of phone numbers, a detailed calendar, and many photos. Given network effects, almost everyone is connected with dubious characters—if not directly, then by two or three degrees of separation. Police agencies can use these “connections” to obtain search warrants or justify surveillance based on extremely loose claims of guilt by association. Would you want to be judged by the browsing history of the creepiest person in your contact list?

Simply having a mobile phone turned on while in proximity to a demonstration has the power to label someone as a suspect. Mobile phone users near a violent riot during January 2014 in Ukraine received a text stating “Dear subscriber, you are registered as a participant in a mass riot.” The geolocation ability of their phones was able to place them “at the scene of the crime.” As expected, Ukrainian authorities justified this overreach of their authority by preaching public safety. Ukraine’s president at the time, Viktor Yanukovich, said that he was forced by the dangerous protestors to use “all legal methods provided for by the laws of Ukraine to guarantee public safety.”⁵⁰ Hmm.

Hactivism clearly upsets the status quo for governments, especially when it comes to what information should be free. Governments naturally want some information kept secret (especially that which would embarrass them or threaten national security), while many hackers demand that all

information should be free and available. This conflict is evident in the disproportionate severity of hacktivist punishments, especially when compared to violent crimes.

Since governments and police officials dissuade vigilantism, Anonymous's whistleblowers often face greater punishment than the perpetrators of the crimes they attempt to force authorities to take seriously. A well-known case from Steubenville, Ohio, provides an illustration: a group of football players were initially not charged after a teenage girl was raped, a decision that seemed dubious, especially since there was compelling evidence. Deric Lostutter, a hacker who uses the handle KYAnonymous, posted screenshots of the perpetrators bragging about the crime—an "operation" that many believe forced the charges to be laid.⁵¹⁵² He was arrested by a heavily-armed SWAT team of FBI agents and was charged with crimes under the Computer Fraud and Abuse Act that could lead to a ten-year prison sentence.⁵³ The convicted rapists served less than one year.⁵⁴

This brings us back to Barrett Brown. He was active in many Anonymous campaigns, including exposing a software program used by Middle Eastern countries to spy on their citizens, and arranging the release of an Anonymous member held by a Mexican drug cartel. (Some people consider this story a hoax.) He was arrested in 2012 and charged with three counts: threatening an FBI agent, concealing evidence, and releasing information about stolen credit cards, for which he was threatened with a prison sentence of more than 100 years.⁵⁵ In January 2015, he was sentenced to sixty-three months in prison—a reduced level of punishment, but still absurd by any reasonable standard.⁵⁶ The first two charges are most likely spurious—Brown did not threaten the agent with violence and was (while obviously under the influence of opiates) upset about his "rule follower" mother being charged as an accessory to his crimes. Even so, others charged with similar offences typically are sentenced to less than two years. As for the final charge, Brown did not steal the numbers or even perform the original hacking—he simply made the information available by a posting a link. Certainly, that is a criminal action, but not one that warrants a threat of a century-long prison sentence, especially since it was a by-product of an investigation into a software company specifically working on products that monitored the activities of civilians.⁵⁷ In Brown's words, "much of the media has focused on the fact that some participants in the attack chose to use obtained customer credit card numbers to make donations to charitable causes. Although this aspect of the operation is indeed newsworthy, and, like all things, should be scrutinized and criticized

as necessary, the original purpose and ultimate consequence of the operation has been largely ignored.”⁵⁸

Aggressive prosecutions intensify the danger to organizations if they work with hacktivists, as some future zealous prosecutor or ambitious tort lawyer may add a large organization as a co-defendant just to bag a bigger trophy or access deeper pockets.

On the other hand, technology makes it far more difficult for governments to restrict information from citizens, particularly through the democratization of the media. During the early 1990s, the Ontario Crown Attorney made a plea bargain with Karla Homolka so that she would testify against her husband, Paul Bernardo, for the kidnap and murder of teenagers Leslie Mahaffy and Kristen French. The government honoured their agreement with Homolka even though she violated its conditions by withholding details about other victims (including her younger sister). Even after the government received videos from Bernardo’s lawyer that contained undisputable evidence of the crimes—making Homolka’s testimony unnecessary—the government continued to uphold their agreement with her. Understanding that the public would be outraged by the plea bargain, the court issued a publication ban on the details of the case. Newspapers outside Canada were not bound by this restriction, however, and the *Buffalo News* (Buffalo is the closest American city to Toronto) reported the details. The *Toronto Star* was sanctioned for publishing a photograph of the front page of the *Buffalo News* that was legible enough to revealsome of the banned content. While the salacious details eventually leaked, the publication ban was relatively successful. In 1993, the Internet was nascent—most people did not even have email accounts. Today, that publication ban would have been rendered useless by social media almost immediately. Certainly one could argue that more voices in the media serving up more information from more perspectives is better, but which of these voices are trustworthy? And what is their political agenda?

Does The Fifth Estate Need More than 140 Characters?

Like the justice system, traditional journalism operates within a code of ethics and editorial standards. There is a societal expectation that “professional journalists” adhere to higher standards than “amateur journalists,” including bloggers and news aggregators. A strong traditional press is clearly of value, but it does create risk—risk we’ll miss out on

alternative voices or stories that don't make it to press for a variety of economic, editorial, and political reasons.

The blogosphere army provides a great example of the democratization of the media; technology makes it easier for everyone to tell their stories. Simple economics ensure that proofreading and fact-checking departments cannot match resources with thousands of people with wide-ranging expertise perched at their computers. During the 2004 Presidential election campaign, CBS reported that they had obtained memos critical of George W. Bush's military record ostensibly authored by his commanding officer, Lt. Colonel Jerry B. Killian. The blogosphere immediately called the veracity of the documents into question, noting the presence of modern word processing features such as proportional printing and superscript fonts that were non-existent on Vietnam-era military typewriters.⁵⁹ Many people credit the impact of the bloggers' work (on *The Daily Show*, Jon Stewart called them font experts, or "helveticologists") as a factor that accelerated CBS news anchor Dan Rather's retirement.^{60 61}

The Drudge Report is a remarkably low-tech news aggregation website. It receives more than 170 million visits per month⁶² and is regularly listed as one of the most influential media outlets for politicians. While various commentators have described Matt Drudge's political leanings as right-wing, populist, and even left-of-centre, the most active members of his audience lean conservative and often overwhelm comment boards on linked websites.

Despite its nineties look and feel, the Drudge Report has become one of the most powerful media websites in the world. Left-leaning columnist and political wonk Brent Budowsky (a former aide to important Democratic politicians such as Senator Lloyd Bentsen) shares his perhaps reluctant admiration. In May 2015, he wrote: "One of the great mysteries of modern life is that the highest Democrats in the land complain about Drudge, read Drudge like Talmudic scholars poring over biblical texts—as Republicans do—but have never even tried to compete with Drudge in the marketplace of media and ideas... More than any single person in American politics besides the president, he [Drudge] determines the content of debate in our national discourse on an hourly basis."⁶³

The site's big breakthrough came in 1998, when Drudge doggedly reported on Bill Clinton's affair with Monica Lewinsky—a story known to but ignored by the mainstream media.⁶⁴ This story demonstrates, amongst other things, the difference between new and traditional media. Back in the sixties, national

media knew about John F. Kennedy's affairs—not just with famous actresses, but also with interns about the same age as Lewinsky. These stories—considered undignified by mainstream media—were simply not written. Now that the barriers to journalism have been effectively demolished, everyone is a journalist and people like Matt Drudge can, based solely on his own judgement decide what content is shared. With so many voices and so many channels, we find ourselves operating under a new set of rules. That means everything is fair game in the fight for eyeballs.

Does “Sharing Economy” Mean What Billionaire Oligarchs Think It Means?

Many commentators note that the rise of Instagram coincided with the bankruptcy of Kodak—a representative of old-school photography. Founded in 1880, Kodak directly employed 145,300 people at its peak, plus many more in supporting industries (including the iconic Fotomat huts). At the time of its acquisition by Facebook, Instagram had fourteen employees.⁶⁵ With the purchase of their company for approximately \$1 billion in cash and stock (there will be more about this acquisition in the Pride chapter), these people became instantly wealthy. In fact, some received more money than they could spend in their lifetimes, but that wealth would not have nearly the economic effect as the vast number of purchases of cars, homes, groceries, etc. made by a still-employed Kodak crew.⁶⁶ Success stories like Instagram have had a transformative—and not altogether societally positive—impact on how money moves within our economy.

The previous analogy also tells us something about the “sharing economy.” The principle of the sharing economy is that fewer assets are required by a community if they are made available for all members to use. We need fewer cars if we can share ownership, fewer hotels if people can sleep in what would otherwise be an empty apartment. The big “success stories” within the field, however, are not tool libraries, but Silicon Valley entrepreneurs who have built billion dollar valuations by taking a piece of revenue from asset holders while transferring most of the risk back to them.

Uber—the taxi-killing start-up—is a darling of the sharing economy. Uber CEO Travis Kalanick would tell you that drivers should be happy to participate in the precarious “sharing economy,” but some of his other statements suggest that they should not get used to his benevolence. Kalanick has suggested that the future of Uber is driverless cars. If Tesla can produce self-driving cars by 2020, Kalanick says his company would want to purchase half a million of them, promising that this super-fleet will

reduce the taxi congestion on New York streets while still fulfilling customer orders within five minutes.⁶⁷ “Sharing economy” is being used here as shorthand for the most efficient *current* model for companies to make money, rather than a democratizing revolution of commerce.

Uber and many other companies who claim to be part of the “sharing economy” strategically decide which laws and regulations do or do not apply to them. Uber’s executive team would tell you that they are not violating any laws because they aren’t running a taxi service, they’re simply using technology to match drivers and passengers. When the company was challenged by municipalities (like Broward County, Florida) they were forced to close because “[Broward] officials implemented one of the most onerous regulatory frameworks for ridesharing in the nation.”⁶⁸ They will also tell you that they are creating jobs, as their drivers (especially UberX drivers) can earn plenty of extra income by using excess capacity of an asset (their car) in their spare time. This premise is questionable on its own. A study by a Princeton economist showed that drivers earned less than \$20 per hour before accounting for gas and upkeep (UberX requires that drivers operate a late model car). Moreover, drivers complain that their revenue share keeps shrinking as Uber squeezes them with additional charges and reduced fares (including a January 2016 decrease of 20% in some American cities).⁶⁹

Don’t Ask a Question Unless You Really Want the Answer

Given the open nature of social media, it is sometimes baffling that controversial organizations embrace it, and in doing so provide a targeted, publicized, and open arena for critics to communicate, often abusively. By participating in social media discussions, these organizations level the playing field with their comparatively low-power critics. The ensuing backlashes are predictable and raise the question of how an earnest “social media expert” was able to convince the corporate powers-that-be that it was a good idea. Presumably, companies were overly optimistic, thinking that they were simply misunderstood and an open dialogue could turn the critics around.

Some of the most egregious examples of this phenomenon come from critics hijacking open Twitter chats meant for fans. Consider these three cautionary tales of spectacularly ill-advised corporate Twitter chats.

McDonald’s certainly has a healthy list of detractors, including vegetarians, environmentalists, and anti-poverty activists. They all had an opportunity

to vent in response to the #McDStories hashtag that McDonald's set up in 2012.⁷⁰ Presumably the hashtag was for people to share stories about the positive impact Grimace had on their childhood. Instead, people piled on with tweets such as:

- @MuzzaFuzza "I haven't been to McDonald's in years, because I'd rather eat my own diarrhea."
- @johngarrettX "So PETA and McDonald's got into it today on Twitter. I was surprised—I didn't know that there was actual meat at McDonald's."
- @Alice_2112 "Hospitalized for food poisoning after eating at McDonald's in 1989. Never ate there again and became a Vegetarian. Should have sued."⁷¹

SeaWorld and its PR agency thought it would be a good idea to respond to criticism from the documentary *Blackfish* and other sources that it mistreated its marine mammals, preventing them from enjoying a more natural, fulfilling life in the ocean. The company's naïve offer—"Have questions about killer whale care? Tweet Us! See your answer and others here: AskSeaWorld.com." Some of the responses:

- @mikedtucker "If you were a killer whale, would you rather live in the ocean with your family or in one of your tanks alone?"
- @flavia_giovanna "Are your tanks filled with orca tears?"
- @markhawthorne "How does it feel to have your business collapse like the dorsal fin of an orca in one your tiny tanks?"⁷²

Investment bank JPMorgan Chase & Co. made a similar misjudgement. Who would have thought that after the 2008 stock meltdown, a government bailout opposed by the vast majority of American taxpayers, and the overwhelming hubris of the surviving bankers, opening up a targeted line for critics could possibly go south?⁷³ The presumably unironic offer—"What career advice would you ask a leading exec at a global firm?" You can probably guess where this went:

- @ReformedBroker "I have Mortgage Fraud, Market Manipulation, Credit Card Abuse, Libor Rigging and Predatory Lending. AM I DIVERSIFIED?"⁷⁴
- @KCM74 "Did you always want to be part of a vast corrupt criminal enterprise or did you break bad?"
- @Talking_Monkeys "When [CEO] Jamie Dimon eats babies are they served rare? I understand anything above medium-rare is considered gauche."⁷⁵

The McDonald's social media director at the time, Rick Wion, reported "within an hour, we saw that it wasn't going as planned, it was negative enough that we set about a change of course."⁷⁶ JPMorgan responded with minimal contrition: "Tomorrow's Q&A is cancelled. Bad idea. Back to the drawing board."⁷⁷ SeaWorld blamed its failure on digital harassment from trolls, animal rights groups and bots, plaintively reporting "For us it is simply a matter of separating legitimate questions from ones that were clearly intended to overwhelm the process and intimidate those who genuinely were curious about something... it's unfortunate that these people would try to drown out thoughtful and honest answers by flooding social media with repeated questions and troll accounts."⁷⁸

Vice and Virtue of Our Robot Overlords

When we use technology to make our lives easier, how much of its impact is beneficial and how much makes us dumber and lazier? Software algorithms can quickly sort through a pile of resumes to make a shortlist—this saves time, but does it provide optimal results? Does it reduce or increase the bias of a human pair of eyes? Google Maps and the like make navigation easier, but does it make us worse navigators in its absence? Does the fact that you can always look up a word reduce your vocabulary? How do you look up a word's definition if you don't know the word in the first place?⁷⁹

Later, we will talk about 3-D printers, medical nanobots, and self-driving cars. All of these innovations offer great benefits to humanity, but do not come without societal cost. The *Star Trek* replicator or the machines in *Battlestar Galactica* that turn algae into "normal human food" seem like wonderful advancements, but how long before equipment that can alter organic material via downloaded recipes will be used to manufacture recreational drugs? Rapid recipe development challenges law enforcement officials to categorize the new formulas as illegal controlled substances. Designer drugs are already a cause for concern; people under the influence of the street drug called "bath salts" committed several gruesome murders before governments caught up to declare it illegal.⁸⁰

There are many benefits to smart self-driving cars. For one, safety—more than 1.2 million people die every year from traffic accidents.⁸¹ Since cars are programmed to sense current and upcoming conditions, know and avoid the blind spots of other vehicles, and operate without fatigue or distraction, they are much safer than human-operated cars. In fact, during the first 12 million miles driven by the Google car, the twelve minor recorded accidents were the fault of the other (human) drivers involved in the

incidents.⁸² After the fourteenth collision, Google self-driving car project director Chris Urmson wrote in his blog, “Our self-driving cars can pay attention to hundreds of objects at once, 360 degrees in all directions, and they never get tired, irritable or distracted. People, on the other hand, ‘drive as if the world is a television show viewed on TiVo that can be paused in real time—one can duck out for a moment, grab a beer from the fridge, and come back to right where they left off without missing a beat,’ to quote Sheila Klauer of the Virginia Tech Transportation Institute in *Traffic: Why We Drive the Way We Do*. That’s certainly consistent with what we’re seeing.”⁸³ Reid Hoffman elaborates in a LinkedIn editorial, “Autonomous vehicles equipped with lasers, infrared sensors, cameras, detailed 3-D road-maps, and other technologies are able to assess their surroundings in ways that human eyes can’t. They can detect objects behind walls. They can accurately estimate distance at speed. They can brake and accelerate faster than humans can and change direction with more precision. They don’t drink and drive, text and drive, nod off six hours into a long trip, or experience road rage.”⁸⁴ In fact, when futurists are asked what current behavior will be considered unthinkable in 100 years, humans operating two tons of glass and metal at high speeds surrounded by other humans doing the same is always high on the list (see text box for some counter-arguments).

To be fair, self-driving cars are not yet perfect. In March 2016, a Google self-driving car committed its first at-cause collision, side-swiping a bus after the algorithm incorrectly determined that the bus would yield to it.⁸⁵ In a much more serious incident, a Tesla car operating in “semi-autonomous mode” crashed, killing the driver. According to the Tesla blog, “Neither Autopilot nor the driver noticed the white side of the tractor trailer against a brightly lit sky, so the brake was not applied.”⁸⁶

Once self-driven cars become ubiquitous, they will be able to communicate with each other, lowering the accident rate—which will lead to better gas mileage as cars become lighter when less metal is required to protect passengers in the event of a collision. Further, self-driving cars will self-organize into virtual trains, travelling as a phalanx that requires less highway space and increases mileage even more as all the trailing cars draft behind the leaders; (self-driving trucks are also more likely to travel at speeds that provide optimum gas mileage than human drivers who are financially incentivized to drive faster). Since everyone in the self-driving car is a

passenger, people can spend that time reading, working, or sleeping rather than paying attention to the road. Parking lots would more efficient as

well, as the cars could communicate with each other and “Tetris” into a much denser pattern. Indeed, the parking lots would not need to be directly adjacent to venues, as cars could be summoned shortly before they are needed with minimal delay to passengers.

Everything described above sounds like a positive impact on society—fewer deaths, lower environmental impact, and greater use of time. There will be some technical and moral questions to consider. First, the self-driving cars operate based on map data created by people and operate by algorithms that cannot possibly take into account every situation—currently, the sensors have trouble accounting for snow and may not recognize when a police officer or other human temporarily takes over directing traffic from signal lights. Complicated AI is required to recognize the sound of a siren from an approaching but out of sight ambulance and remain stopped at a green light.⁸⁷

In the event that, despite all the sensors, a collision becomes inevitable, how does the robot brain make a decision what to hit? Does it swerve away from a child on a bike to hit a dog? Does it hit an SUV to avoid a school bus? If the algorithm is based on minimizing the loss of human life, would the car elect to swerve over a cliff, killing its owner, to avoid striking a group of cyclists who suddenly appear around a blind corner?

In the event of such a death, who is responsible? Should the owner of the vehicle be charged? What if she was not in the car at the time? What about a third party whose irresponsible actions caused the atypical situation that overrode the safety measures? If Tesla made the car, would CEO Elon Musk be held liable? If the navigation engine was based on a faulty or out-of-date Google Map, would Larry or Sergey or Sundar be criminally charged? The lawyers of the Silicon Valley billionaires would likely argue that self-driving cars saved millions of lives, so their clients should be lauded, not prosecuted—but even the spectre of a criminal trial would send the .000001% to their barge fortresses in international waters (we’ll discuss “seasteading” in the Pride chapter).

Technology obviously offers both positive and negative impacts on humanity. In the next seven chapters we will talk about the latter—broken down Sin by deadly Sin.

Greed

Greed, as a psychological concept, is an extreme craving to acquire or possess more than one needs. Like most of the Sins, it has transformed since it was first decreed by the medieval church. Certainly, modern society—at least within the developed world—encourages capitalism and wealth accumulation. While this does not seem to be sinful on its own, most people would agree that the growing income disparity both within, and between, countries remains an enormous problem. For our purposes, this discussion of technologically intensified greed will focus on pure crime, grey area pseudo-crime, businesses based on unethical activity, and corporate avarice.

Smooth (Cyber) Criminal

The Internet generates great opportunities for many people, but just like any human invention, the boon has a shadow. For as many people as it helps, it provides equal opportunity for criminals, giving rise to a whole new genre of crime: cybercrime.

Email Scams: If you have an email address, you've received email messages from Nigerian princes and corrupt Bahamian bankers eager to share millions with you if you would just divulge your banking information. The

staggering generosity of sub-Saharan royalty who are so eager to share their “largesse” with you for a small handling fee is an updated version of a ploy that existed long before the Internet. This scam was prevalent as early as the sixteenth century (typically involving the estate of a wealthy person imprisoned in Spain or Portugal).

For centuries, these messages were delivered by snail mail with letters bearing exotic, and official-looking, seals on embossed letterhead. The introduction of e-mail changed the game for scam artists, offering the ability to send billions of these same messages, virtually for free. One might wonder why (although there are many variations), some scammers still use “Nigerian Prince” as the supposed benefactor. I mean—hasn’t everyone heard of the scam by now? No, it turns out. If a mark is not turned off by such a stereotypical figure, they are even more likely to fall for the come-on.

Like many get-rich-quick schemes, email scams appeal to the greed of the marks, with a little help from Greed’s friends, Fear and Shame. Since marks are told that their help is needed in order to avoid taxes or the interference of government agencies, they might be afraid to ask for help once they realize they’ve been defrauded. In many other cases, the marks are embarrassed that they fell for it at all.

If, as is estimated, approximately 50% of all email is spam, the raw mathematics dictate that only a small percentage “hit-rate” is required to make this kind of operation feasible.⁸⁸ It is unclear how much the “419 scammers” (named after the relevant section of the Nigerian criminal code) are extracting from their victims. However, the US Secret Service estimated in 2005 that such schemes net hundreds of millions of dollars annually, worldwide; this figure is probably low due to under-reporting by victims for the reasons we’ve mentioned as well as the fact that a great many more people have come online in the years since.⁸⁹ Interestingly, there are vibrant vigilante operations known as scam-baiters. These people lead scammers on, pretending to be interested in the “offer,” then deliberately antagonize and string along the scammer, by asking them to provide bizarre “proofs” that they are real. In some cases, the scammers are asked to send photos of themselves holding signs (or even a fish on their heads) to prove that “they are legit.” Scam baiting sites such as 419eater.com display information about successful tormenting campaigns of fraudulent “Nigerian princes.” While some baiters disagree on whether it is ethical to try to procure money from the scammers (e.g., “I have the cashier’s cheque for you for \$18,000, but can you wire me \$30 for cab fare?”),

they do agree that by tying up the scammers' time, they are preventing other innocent people from becoming victims.⁹⁰

Keylogging attacks capture all data typed into a computer. Criminals avoid having to trick marks into divulging passwords, because data is captured automatically. According to a report from Russian cybersecurity firm Kaspersky Lab, organized crime members have used keylogging attacks to rob banks of more than \$1 billion. Once the criminals gained access to the system, they pulled off a number of scams including: commanding ATMs to dispense cash for an accomplice to scoop up; temporarily inflating the balance of a user's account from \$1000 to \$10,000, then withdrawing the extra money before the bank could verify that the balance was false; or simply transferring money to fraudulent accounts overseas. The scope of the attack was more sophisticated than ever seen before, but it still relied on tracking the careless behaviour of bank employees as the original mark carelessly divulged password information to a criminal.⁹¹

Link-baiting Scams: Many attacks come through security weaknesses in online advertising or inept Internet users clicking on dodgy links. Since many people are using ad blockers, the former weakness can be mostly contained, and as more people become sophisticated Internet users, fewer and fewer will click links to supposed get-rich schemes or nude photos of actresses. This is not to say we can relax our defences. On the contrary, Tom Kellerman, VP of Cyber Security at Trend Micro, warns that "hackers evolve all the time in order to adapt their attacks to their surroundings. As online awareness grows, the extortion activity also grows...Despite growth of cyber defense budgets and various legislation activities, these changes will bring about new, more sophisticated attacks."⁹² For example, keyloggers can collect information from online chats and use that data to reach out to a mark with information that "only a specific friend would know."

Social Media Scams: Online scams are getting more sophisticated and social media is providing a new arena. A common Facebook swindle is hijacking someone's account (or setting up a shadow account with the same profile picture) and sending messages of distress: for example, claiming to be stranded on holiday in need of money, or claiming to have just struck it rich with a business opportunity they are eager to share. A savvy person can detect and defend against these scams, since the people stealing the data and selling it are usually quite poor facsimiles of their actual friends. But as the faker uses more and more specific information to "prove" they are legitimate or customizes the pitch, detection becomes harder. For example,

if someone posts on Facebook that they were heading to Rome for a holiday, a phishing attack from the “Italian Passport Agency” would be more likely to deceive a victim.

A different kind of Facebook fraud targets businesses. “Farms,” typically located in low-wage jurisdictions such as Indonesia and Malaysia, sell social media “participation” at a reasonably low price—as of 2015, 1000 Facebook likes for \$29.99, 1000 Twitter followers for \$12.⁹³ Perpetrators set up demographically plausible fake accounts designed to appeal to specific companies, organizations, or even political candidates (during the 2012 US presidential campaign, Mitt Romney added more than 100,000 Twitter followers in a single weekend, a 2500% increase from his typical pace—mere coincidence, according to his team).⁹⁴ Not only does this type of underground economy devalue social media currency, but in most cases, buying followers actually makes the impact of your posts worse. For example, since Facebook’s algorithm displays content to a small portion of the possible audience, then expands the exposure based on how many people comment, like, or share it, fake fans decrease the power of the post, since a fake fan will never interact with content.

Phishing is a scam that targets victims with emails disguised as legitimate messages from organizations such as banks containing a link that activates a virus or a worm when clicked on.⁹⁵ Typically, a mark will be led to believe that there is a discrepancy with their information with the faked bank, or sometimes even a security flaw, and are asked to input financial or password information that the scammer can then use to empty an account or steal an identity. Since this type of scam has been around for a long time, users are becoming more sophisticated and should be able to identify it and avoid clicking on suspicious links. However, the scammers are getting more sophisticated as well. Sophisticated versions include authentic-looking logos and contact information, and even mimic the faked company’s colour schemes. Messages that include personal information, especially information gained via a keylogger or through social media reconnaissance, will seem more plausible to a victim.

Ransomware is another particularly nasty ploy. This type of malware encrypts files on the mark’s computer until he or she pays the ransom money to release it (in 2016, the University of Calgary paid \$20,000 to a criminal who remotely shut down its computer system).⁹⁶ Alternatively, an embarrassing (usually pornographic) image appears as the front window on a laptop and a frantic employee needs to pay to have it removed before the

next work day. By June 2015, the FBI estimated that \$18 million had been paid to these criminals, but the true number is no doubt much larger as most victims would be too embarrassed to report it.⁹⁷ The targets are not limited to financial data or personal files, either. Hacks into Xbox and PlayStation consoles rob gamers of saved mission and character files—to the dedicated player, this is a truly devastating loss well worth the ransom to retrieve.

Cyber Shoplifting: Technology can also enable a curious type of shoplifting—one where the perpetrator actually pays for goods, albeit at a fraudulent “discount.” Thomas Langenbach thought that he came up with a particularly clever method to defraud Target stores. He scanned and printed barcodes of Lego sets then affixed them to much more expensive sets. Targeting who he perceived to be the most inexperienced cashier, he would purchase the price-modified sets and then resell them on eBay under his seller name, “Tomsbrickyard.” He pled guilty to one felony count of commercial burglary and was sentenced to one month in jail, five months of house arrest, and three years of probation, and was terminated from his job.⁹⁸ The curious thing about this story is that Mr. Langenbach held an executive position at a *Fortune* 500 company, SAP. He presumably did not need the money gained by his criminal activity. This type of crime, called ticket switching, is increasing in frequency and, like most things, is enabled by “how-to” videos on YouTube. Offenders usually get busted due to Greed and implausibility. Brand new, popular products that are still factory-sealed and sold in quantity, at well below what chain stores pay, are almost certainly acquired via dubious means.

The Sony Email Hack: In November 2014, Sony was famously attacked by cybercriminals who accessed corporate emails and obtained digital copies of unreleased movies. After demanding monthly ransom payments, the unknown cybercriminals released thousands of the stolen emails through Wikileaks. Some of these were embarrassing to the senders, and shocked—SHOCKED—everyone with the fact that studio executives were petty, territorial gossips with a nasty streak. An iconic photo showed former Sony co-chairman Amy Pascal looking up to the statuesque, nonplussed Angelina Jolie. The photo showed Pascal apologizing for a leaked conversation during which she dismissed the mega-star as a “minimally talented spoiled brat.”⁹⁹

A rumour quickly spread that the attackers were North Korean agents, intent on avenging their dear leader who was roundly mocked in the Seth Rogan/James Franco movie *The Interview*. This narrative made the story even more

exotic and compelling, and the media eagerly ran with it. Unfortunately, it did not seem to be true. The hackers did not mention North Korea at all until the first media speculation on the subject. Further discovery showed that the hackers had a much deeper inside knowledge of Sony's network than a North Korean agent would be expected to have. Even though there were some Korean markers in the code, it could have been added to throw pursuers off the trail. In addition, linguistic analysis known as "stylometry" determined that the sentence structure was far more likely to be authored by a Russian native-speaker than a Korean speaker.¹⁰⁰ The keyboard monkey detectives played a role here as well. The poor English in the messages seemed deliberately bad, and therefore likely a ruse.

A commenter to a related *Gawker* article who taught English in Korea elaborated: "the use of contractions (we've and we'll) is characteristic of someone near-fluent, too sophisticated to be dropping articles. [Another clue relates to...]ordinal date—my students always hated ordinals because they're irregular (e.g., 24th). The repeated pronouns ("we" and "you" and "us") doesn't seem like how a Korean person would phrase it, because Korean pronouns are freighted with [tense/verb] distinction and honorifics that English doesn't capture. For that reason, my students circumlocuted (sic) those words when they could because they felt imprecise."¹⁰¹

The less compelling, but Occam's Razor—consistent theory is that the attack was undertaken by insiders (six months prior, Sony had a round of layoffs).

Pseudo-Crime: Does Your Mother Know You Do That?

While all the activities in the previous section are clearly criminal, there are many other Greed-inspired, Internet-enabled endeavors that operate in legal gray areas—in some cases, extremely dark grey.

The "Microsoft" Scam: For example, consider the well-known scam of the unsolicited phone call from "Microsoft" advising of a dangerous virus on the mark's computer that can be cured with a subscription to their service. Of course there is no virus, and this "service" is in no way associated with the Redmond-based software company; rather, it festers from a telemarketing sweatshop in South Asia. This scam has received a lot of media coverage (plus some amusing videos on YouTube showing people trolling the scammers), but it is still working. Senior citizens who are less familiar with technology or generally more trusting are particularly at risk. In this case, since a service is being provided (albeit an overpriced one, probably

unneded and sold under dubious pretence) it is not likely to be prosecuted in the country where the scam originates. A reasonable solution would be to make credit card companies liable for their role in the scam if the purported service is deemed fraudulent in the mark's jurisdiction, or if enough complaints and/or chargebacks have been accumulated.

Stock manipulation is now a science. Mathematicians who could be contributing to society in a meaningful way are instead developing algorithms to shave money off of legitimate trades and sending millions of phantom buy-and-sell requests that expire more quickly than a human could respond to them. These activities manipulate prices and pollute the free market. And yet, this manipulation is not considered fraud. In fact, it's celebrated as an innovation. Computer-based trading has some serious downsides. Consider how a stop-loss program reacted to a false 2013 rumour that appeared in the Associated Press's Twitter account after it had been hacked.¹⁰² The Twitter post indicated that explosions had been reported in the White House, which, in turn, caused algorithms to immediately start selling stocks; within three minutes, all the major indexes lost about \$136 billion of value before quickly recovering from the hoax. Jonathan Corpina, senior managing partner with Meridian Equity Partners Inc., received a call from a panicked client who wanted to liquidate stocks based on the false news, something that no human trader believed without verification. He told Bloomberg Radio "Algorithmic trading programs that read news headlines may have started the selling...And then other algos jump in to play the snowball effect, and little by little you have the computer trading systems that have canceled all their orders on the buy side and the sell algos hit all these bids, and that's the big dip we saw."¹⁰³ Even though the market recovered quickly, real losses occurred for those who owned stocks that were sold at artificially low levels.

False Rumours: Fraudsters can cause similar events by posting false rumours in the social media. After all, market economies are theoretically based on the proposition that all parties have a realistic chance of accessing "perfect information." A good example is a tweet that declared "AUDIENCE noise-suppression company being investigated by DOJ on rumoured fraud charges." It was completely untrue, but Audience's shares briefly dropped more than 20%.¹⁰⁴ It quickly recovered, but the dip lasted long enough for a bad actor to make a quick profit. The interesting aspect of this story was that the tweet did not come from any authority—the poster, "Conrad Block," had only ever posted eight times—all repeats of the same message, all on the same day. Similarly, Apple stock briefly fell 5% when a prankster posing as a

“citizen journalist” posted a false rumour that “Steve Jobs was rushed to the ER just a few hours ago after suffering a major heart attack. I have an insider who tells me that paramedics were called after Steve claimed to be suffering from severe chest pains and shortness of breath.”¹⁰⁵ An SEC investigation determined that the teen who posted it was motivated by mischief rather than intended fraud, but even so, the market was briefly out of balance and a bad actor could have taken advantage.¹⁰⁶

Spoof trading entails sending tens of thousands of “bluff” buy and sell orders into a stock exchange and then cancelling them milliseconds later. Although the trade never happens, the activity artificially raises and lowers the market price. According to Benjamin Blander, a managing member of Radix Trading LLC in Chicago, “Spoofing is extremely toxic for the markets. Anything that distorts the accuracy of prices is stealing money away from the correct allocation of resources.”¹⁰⁷

High-frequency trading, especially when combined with spoofing, allows traders to skim profits from stock exchanges by posting thousands of trades just above or below the market price, then retracting them before they can be executed. By doing so, these traders can artificially raise or lower market prices and extract tiny profits from each transaction. Of course, tiny profits per transactions add up quickly when they occur thousands of times per day. Michael Coscia, a New Jersey trader currently under indictment for violating anti-spoofing measures of the 2010 Dodd-Frank Act, generated more than \$1.6 million in just three months.¹⁰⁸ Navinder Sarao, the high speed trader who is believed to have caused the 2010 “flash crash” that temporarily erased \$1 trillion of market value, has allegedly netted \$40 million from this practice.¹⁰⁹

Some observers (including, not surprisingly, those who are generating massive wealth from the practice) believe that there is nothing wrong with it; high-frequency traders are simply rewarded for designing a better algorithm. Eric Scott Hunsader, a vocal critic of the practice, disagrees and believes that data analysis can quickly identify the perpetrators. He told the *Chicago Tribune*, “Technology and the Internet has opened up and democratized so many areas of society, but this is one area where it has had the opposite effect... The laws needed to tackle this are already on the books, but they are not being enforced.”¹¹⁰

Karl Denninger, author of the book *Leveraged* and *The Market Ticker* blog, believes that high-speed trading is out of control and the cancel-to-execute ratio has increased from 10:1 to 30:1 since 2010.¹¹¹ In essence, this means that

more than 90% of buy and sell requests are cancelled before they can be consummated, strongly suggesting that most of them were made solely to manipulate the market. Since the skimming must be detracting from the legitimate purpose of the stock market—providing capital to companies—it is a slam-dunk social ill. Although prosecution in cases like this is difficult and expensive, since its existence is widely known, it could be eliminated or at least dramatically reduced. Denninger thinks that it can easily be solved by enforcing two solutions. He describes these in a blog post:

1. *Force all orders to be valid for one second. That is, once you place an order, you cannot cancel or modify it for one second. It must remain “exposed” for at least that period of time, during which it may be executed against. This makes placing tens or hundreds of orders in the book beyond what you truly wish to transact extremely dangerous, in that a sudden price move can leave you owning (or short) all of those shares you represented as “available” to buy or sell.*
2. *Impose an exponentially-increasing cancellation fee as the number of cancels rises against the number of executions for a given market participant in a reasonably short period of time (e.g. 10 minutes). Permit one or two cancels per filled order for a given number of shares in an issue over a reasonably short period of time without penalty. From that point forward, impose a fee that begins at 1/100th of value of the order and doubles for each successive cancel without an execution, up to the entire value of the order. This makes the tactic of placing 10, 20, or 30 orders for each one you intend to execute extraordinarily unprofitable and stops that practice immediately.¹¹²*

When You Were a Child Did You Dream of Becoming a Patent Troll?

Some activity, while not technically illegal (or at least difficult to defend or prosecute) still appears greedy to a reasonable observer, usually because it exploits or ignores regulations instead of making money honestly. A steady stream of Internet services search to find a loophole in local laws, simply ignore them, or declare that their services are not subject to them. A good example is Haystack—a mobile app that allowed people to sell their occupied parking spots to the next driver. The stated benefits of the service ranged from reduced waiting times for parking on congested streets to a reduced environmental impact, as drivers would no longer need to circle the block looking for a vacant spot. However, this slick argument was not enough to win over detractors who pointed out that the app was elitist, as it appealed to time-poor individuals with data-enriched smart phones; inflationary,

as users were required to pay for parking as well as to access the spot; and finally, for privatizing a public service. The hashtag for this phenomenon is #jerktech (see text box).¹¹³ CEO Eric Meyer and his lawyers argued that the app did not violate any municipal laws, but officials disagreed and stated that if current laws were not violated, new legislation would be enacted. Haystack ceased operations after one year.¹¹⁴

Patent trolls are particularly loathsome entities. The term refers to organizations who acquire or write patents solely for the purpose of suing other organizations using technology that is even remotely related. Patent trolls are despised in the technology community as they perversely deter innovation. Most observers believe that patents are given out too easily; clerks do not have the technical knowledge to determine novelty and, in any case, judges and juries reward patent troll lawyers' specious claims via bizarrely loose legal interpretations. A 2011 study by Boston University professors James Bessen and Michael Meurer estimated that patent troll lawsuits have a yearly direct cost to the economy of \$29 billion. This amount does not include the indirect costs to the defendants' businesses, such as "diversion of resources, delays in new products, and loss of market share."¹¹⁶ The Patent Litigation Integrity Act tabled in the US Congress in 2014 intended to deter patent trolls by forcing them to post a bond in advance so that they could pay if they lost a case. According to the Electronic Frontier Foundation, "trolls use shell companies with very few assets to sue, the bond requirement is an important one that would require patent trolls to put their money where their mouth is."¹¹⁷ Even if a technology company's product does match an existing patent, there is a huge

Jerktech is a term coined by Josh Constine of *TechCrunch* that was expounded upon under the eponymous hashtag. It refers to a "disruptive" technology that sells something that is not the seller's property or has been appropriated from its owners. In Constine's words, "[a]... compassionless new wave of self-serving start-ups that exploit small businesses and public infrastructure to make a buck and aid the wealthy... It's one thing to outcompete a big, stagnant company with new technology. It's another to screw over the little guys just because you can sell what's usually free."¹¹⁵ A good example is ReservationHop, an app that makes dinner reservations at popular restaurants that do not require credit card holds, and then sells them to potential diners. ReservationHop charges diners for the service, sharing none of their cut with the restaurant, yet the app does not incur any penalties if their "customers" do not honour the reservation.

difference between having an idea and developing a product based on that idea that is successfully brought to market. The patent holder can wait until all of the commercialization takes place, then come looking for a payout.

Patent trolling is especially dangerous (or lucrative, depending on your point of view) in the United States because there is no automatic requirement for the loser of a lawsuit to compensate the winner for court costs. For this reason, as well as notoriously generous juries in East Texas (where patent trials are a cottage industry), the cost of defending a lawsuit against a patent troll usually exceeds \$1 million.

In 2015, a family networking service called Life360 won a patent trial versus a Florida company called Advanced Ground Information Systems (AGIS) who sued for patent infringement. Life360 followed that victory with another that awarded the company \$684,190 towards its legal costs. AGIS denied that it was a patent troll; founder Cap Beyer stated: “I personally am the inventor of AGIS’s patents, and AGIS is a real company with real products and real sales. [Life360 CEO Chris] Hulls has stated that AGIS, Inc. is a failing firm, which it is not. If this fee award is allowed to stand after appeal, it will have a chilling effect on real inventors and start-up companies that try to enforce their legitimate patent rights.”¹¹⁸ Still, most commentators supported Life360, perhaps impressed by the original response to AGIS’s demand letter which began “Dear Piece of Shit” and contained the phrase “I will pray tonight that karma is real, and that you are its worthy recipient.”¹¹⁹

Apple is a huge supporter of anti-troll legislation, pointing out that the company’s deep pockets made it the most frequent target of patent trolls. Apple is currently appealing a ruling that ordered it to pay more than half a billion dollars to an outfit called Smartflash LLC for willful infringement of three US patents (in January 2016, two of the three patent infringements were invalidated).¹²⁰ Included in the appeal is the following statement: “Smartflash makes no products, has no employees, creates no jobs, has no US presence, and is exploiting our patent system to seek royalties for technology Apple invented. We refused to pay off this company for the ideas our employees spent years innovating and unfortunately we have been left with no choice but to take this fight up through the court system. We rely on the patent system to protect real innovation and this case is one more example of why we feel so strongly Congress should enact meaningful patent reform.”¹²¹ For its part, Smartflash believes that it is owed money from Apple not only for the iTunes Store but also for

products that can access the store, including iPhones and iPads. Not satisfied with the half-billion dollar award from Apple, Smartflash continues to buy up more patents and has active lawsuits against Samsung, Google, and Amazon.¹²²

Is Your Profile Pic a Gordon Gecko Headshot?

The unabashed capitalist reader might want to dismiss this section—after all, aren't companies supposed to generate more profits for shareholders by manipulating customers or exploiting their data? Similarly, Facebook users get access to many wonderful free services and are not asked to contribute to Mark Zuckerberg's fortune—does that not warrant giving up some private information? These are the trade-offs that we will explore. Progressive and other car insurance firms offer customers a deal if they agree to attach a fob or activate an app that measures factors such as how fast, how far, what time of day, and how erratically they drive. Based on this information, as well as whether they avoid dangerous neighbourhoods, they could qualify for lower premiums. Now this may seem fair on the surface—shouldn't safe drivers be able to benefit from their good behaviour? However, from a societal point of view, this privacy invasion simulates a "poverty tax," as most people who live in dangerous areas do so because they have no viable alternative.

User Data Exploitation: Marc Goodman points out in his excellent book *Future Crimes* that users are not the customer of "free services" like Google and Facebook, but are, in fact, the product. The goal of these companies is to extract as much value as possible from user data in order to monetize it by sharing it with advertisers. Do you always (or ever?) read the Terms of Service (ToS) for online services you use? Not likely—they're usually printed in a tiny font, loaded with legalese, overly long (Facebook's version has a higher word count than *Hamlet*), and are constantly changing. But guess what else? Goodman warns they are also massively biased against the consumer. He considers the Google Drive ToS particularly flagrant.¹²³ Consider this passage: "when you upload or otherwise submit content to our services, you give Google (and those we work with) a worldwide license to use, host, store, reproduce, modify, and create derivative works, such as those resulting from translations, adaptations, or other changes and license to communicate, publish, publically perform, publically displace and distribute such content." Goodman comments:

Think about that. If J.K. Rowling had written Harry Potter in Google Docs instead of Microsoft Word, she would have granted Google the worldwide

*rights to her work, the right to adapt or dramatize all the Muggles as Google saw fit, to say nothing of the Hogwarts School of Witchcraft and Wizardry. Google would have retained the rights to sell her stories to Hollywood studios and to have them performed on stages around the world, as well as own all the translation rights. Had Rowling written her epic novel in Google Docs, she would have granted Google the rights to her \$15 billion—all because the ToS say so.*¹²⁴

Presumably, that ToS would not hold up in court—in most jurisdictions, anyway. But Google’s are by no means the only egregious ones. These are just some of the conditions that one needs to accept to access Facebook Messenger (and there are many more—some equally obnoxious). The user:

1. Allows the app to change the state of network connectivity.
2. Allows the app to call phone numbers without your intervention. This may result in unexpected charges or calls. Malicious apps may cost you money by making calls without your confirmation.
3. Allows the app to send SMS messages. This may result in unexpected charges. Malicious apps may cost you money by sending messages without your confirmation.
4. Allows the app to record audio with microphone. This permission allows the app to record audio at any time without your confirmation.
5. Allows the app to take pictures and videos with the camera. This permission allows the app to use the camera at any time without your confirmation.
6. Allows the app to read your phone’s call log, including data about incoming and outgoing calls. This permission allows apps to save your call log data, and malicious apps may share call log data without your knowledge.

Wow. Let’s review what you just agreed to. At any time, Zuckerberg and his crew can: turn on the data of your phone (1), call people or send SMS to people without your permission (2), and access who you call as well as all the information about the conversation (6). They can also record audio (4) or video (5) of you at any time. Since the majority of North Americans carry their devices constantly, including on occasions when they would probably enjoy some privacy, these conditions have enormous impact. And yet. As of June 2015, more than 1 billion people have downloaded the Android version of Messenger either because they did not read the

ToS or trusted that Facebook, its partners, and the “malicious apps”—an interesting use of passive language—would not do them any harm.¹²⁵ A third option is that users felt that the conditions were a reasonable trade-off for the app. FOMO, yo.¹²⁶

Crowdsourcing is another phenomenon enabled by the Internet. Solving a problem by posting a contest can save a company a lot of money—for example, running a design contest for a new company logo. Also, the winner gets paid for his or her work (the loathsome practice where people do work for free hoping to “win” the opportunity to be paid is called a “spec contest”). Seems good, right? Not really. All the “non-winners” in the contest basically worked for free and in many cases, the terms and conditions of the contest dictate that the company owns all the work product that was submitted. Individual companies don’t even have to run their own contests, as firms have popped up to fill this new niche market. 99designs is one of these firms; as of July 2015 the San Francisco company claimed to have successfully run more than 420,000 contests with an average client rating of 4.66 out of 5. They also claimed to have distributed more than \$106,000,000 to contest entrants, but I could not determine the statistics on the average hourly rate earned by the aggregate group.

Concerned about this crowdsourcing trend, an organization called SpecWatch began investigating spec contests in 2009. Their findings included a high abandon rate, where a contest was not actually completed; contests with no winner identified (at least not publicly); and widespread fraud, where contest winners submitted stock art or copyrighted material as if it was their own original work. Quality suffers as well. Dan Ibarra, co-founder of Minneapolis design studio Aesthetic Apparatus, reports, “99designs is something akin to a Walmart; it’s not necessarily dedicated to bringing you good work, but to bring you a lot of it. That’s not necessarily better.”¹²⁷

Moleskine, the creators of upmarket, hipster-friendly leather notebooks, learned about the “No Spec!” movement the hard way. Their client base included many of the artistic and creative people who were most offended by spec contests. One designer responded, “1 designer wins. 3,499 designers lose. Moleskine is the real winner here. If Moleskine redeem themselves by dropping this dreadful spec work competition I will continue to buy their products. Otherwise I’ll boycott. It’s that simple.”¹²⁸ The company Facebook page was bombarded with thousands of similar posts including, “There is a reason why Prada does not open a competition for bags and Apple does not open a competition for the next iPhone.”¹²⁹

Dynamic pricing refers to setting prices based on changing market conditions, typically to maximize profits. For example, a smart soft-drink vending machine can adjust prices based on ambient temperature and humidity, foot traffic, and remaining inventory. Smart business practice or exploitative behaviour? It depends on your point of view—in this case, vended Coke is always more expensive per unit than buying cases from Costco. The good people at Coca-Cola can charge more for the refrigeration, storage, and distribution services it provides.

In the above case, the price is displayed openly and it remains consistent for all consumers. Compare that with online purchases, especially for expensive, price-opaque products like airline seats. Ever since deregulation, airline prices have demonstrated wild swings based on factors such as time of day, how long in advance the ticket is purchased, and whether the itinerary includes a Saturday stay-over. Your online history makes the algorithm even more complicated. Although airlines deny that this is still the case, airline ticket prices appear to increase for users who check for prices multiple times—information that the site can collect via cookies. Pro tip: before shopping for airline tickets, erase your browser history, or if you are using Chrome, use incognito mode.

Certain companies use A/B testing¹³⁰ to determine which promotions will be attractive to individual consumers. Harrah's entertainment was an early pioneer in this area. Their former CEO, Gary Loveman, holder of a PhD from MIT and former economics professor at Harvard, insisted that all new business proposals be backed with quantitative data.¹³¹ While this practice can make good economic sense, taken to an extreme level (Harrah's cocktail waitresses wore name tags embedded with RFID chips so their movements could be optimized) it violates employee privacy.

When data scientists at Orbitz, an online travel-booking agency, noticed that customers using Apple products spent as much as 30% more on travel than Windows customers, it started presenting pricier hotel options more prominently in search results to the Apple-using customers.¹³² Is that savvy use of predictive analysis no different than a shopkeeper making suggestions based on observing a customer's clothing, demeanour, or the car they parked outside? Or is it something more sinister? Jonathan Zittrain writing in *The Future of the Internet and How to Stop It* poses this hypothetical: "is it fair, for example, for an online retailer like Amazon to record the average number of nanoseconds each user spends contemplating an item before clicking to buy it? Such data could be used by Amazon to charge impulse buyers more,

capitalizing on the likelihood that this group does not pause long enough to absorb the listed price of the item that they just bought.”¹³³ Does that discriminate against slower readers? Distracted readers? Where do we draw the line?

Bad Beat Story? That Will Cost You Two Bitcoin

Online poker is a huge industry with more than \$10 billion wagered annually. With so much money involved, the industry is attractive to all manner of bad actors. The most famous scandal occurred at the poker site Ultimate Bet, where insiders could access a “God mode” that allowed players to see the “hole cards” of other players.¹³⁴ For non-poker players, this means that the cheaters knew what cards all their opponents were holding, giving them an indomitable advantage. The scam generated at least \$22 million for these insiders before it was discovered.¹³⁵ Like most scammers who get caught, these scoundrels were undone because they got too greedy. Serge Ravitch, another (honest) player, noticed something awry. Certain players were using terrible poker strategy but always winning. He dug deeper into it. Using a software program called “Poker Tracker,” he reviewed thousands of old hands. Ravitch reported: “what I saw did not make any sense. This account was simply winning too much money for the type of game that he was playing. And he was doing it by never having the worst hand. When the other person was bluffing, he would always go all-in [bet all of his chips]. When the other person had some kind of made hand, he would always fold.”¹³⁶ Based on Ravitch’s and others’ data, authorities investigated and found that the winnings were mathematically impossible without cheating. Even so, and given that insiders were audiotaped talking about the scheme, the punishment meted out was ridiculously benign: Ultimate Bet remains in business. They only had to pay a \$2 million fine and refund the losses to the players who recognized the scam and bothered to complain.¹³⁷

There are other, less obvious ways of cheating at online poker. If two or more colluding players can sit at the same tournament and share their hole cards with each other via instant messaging channels, they gain a huge advantage. Alternatively, collaborators can join forces by deliberately losing to an alpha player whose inflated chip stack allows him to bully the other players. Although poker companies use software to try to identify and prevent this behaviour, players with multiple identities who use the inside information judiciously can profitably grind out tournament wins.

Players can also use high stakes online poker for money laundering and transfers of illicit funds. An easy way to accomplish the latter is for two

accomplices to sit at the same table and wait for a hand where they are the sole players. Then the payer makes a huge bet and folds when the payee calls the bet. Transfer complete.

Fantasy sports leagues are not new, but have exploded in recent years, especially daily fantasy sports. The Internet provides greater and faster access to statistics.¹³⁸ In fact, more than 30 million Americans currently participate in the multi-billion-dollar industry.¹³⁹ Most daily fantasy contests require players to compile teams of actual players and earn points based on those players' real-life statistics. The vast majority of wagers are based on the performance of National Football League teams and players. Despite the risk that so much gambling could negatively impact the games' integrity, league officials and team owners support it—after all, the two largest fantasy sports companies are amongst the largest advertisers (spending more than \$206 million on national television ads during 2015 alone).¹⁴⁰

Fantasy sports betting operates within a legal grey area; it is typically counted as a “game of skill” rather than a “game of chance,” which means that in most jurisdictions it is exempt from anti-gambling laws. There certainly is credence to the idea that some skill is involved: *Sports Business Journal* reports that the top 1.3% of the players account for 77% of the winnings, with the top eleven players sharing the vast majority of the profits with the host sites.¹⁴¹ Former pro poker player Assani Fisher claims to have turned \$600 into \$800,000 playing fantasy sports bets between February and September of 2015.¹⁴² Despite his success, Fisher nibbles on the hand that feeds him by stating “it’s somewhat ridiculous to call sports betting gambling and not daily fantasy sports gambling. It’s a silly debate.”¹⁴³

Top daily fantasy sports players run complicated analytics to determine optimal combinations of athletes. Athletes who are inconsistent but have a high upside can be more valuable than better players with steady stats, since fewer fantasy players will select them. The biggest payouts come from winner-take-all contests where an optimal team will be composed of less-popular athletes with breakout games. Also, individual players whose performances were related to each other were more valuable when chosen together; for example, a quarterback with a breakout performance should be chosen with his go-to receiver, and baseball players who are adjacent in the batting order should be taken together because if the first player gets a hit, the next is more likely to earn a run batted in.

Okay, so the best players who were the smartest and did the most work made the most money—what’s wrong with that? Nothing, except that it’s not the

case. It turns out that the biggest winners were industry insiders. DraftKings employee Ethan Haskell was able to simulate “God mode” by looking at all of the data that came through his site. Haskell, like all of his colleagues, was banned from betting on the DraftKings platform, but he used inside information on rival site FanDuel to parlay a \$25 buy-in into a \$350,000 victory.¹⁴⁴ After the scandal broke and people realized that they were merely marks in a sophisticated con, they stopped playing en masse—or so you would think. In fact, the opposite occurred. The first weekend after the scandal broke, players wagered \$43.6 million at DraftKings and FanDuel, an all-time record at that point.¹⁴⁵

Greed has always contributed to crime, so can we really blame technology? Certainly tech plays a role as an accelerator, introducing new ways to commit crimes and indeed entirely new categories of crimes. Within the innovation sphere, we can blame Greed for some misappropriation of priorities at least from a societal point of view. During the Internet age, so much brainpower going into methods of extracting money from financial services without adding value, collecting and selling personal information and developing banal apps. Where are our flying cars?

Wrath

From casual trolling to wide-scale distributed attacks against unsuspecting companies and individuals orchestrated by groups such as Anonymous, Internet users consistently choose fight over flight. Simply put, anonymity disconnects actions from consequences and people can be at their most vicious when the stakes are low. YouTube videos featuring happy cats need only exist for a short time before commenters degenerate into firing death threats at one another over the most petty of disagreements. Dissatisfaction about customer service snowball into scathing Yelp reviews that go viral and cripple livelihoods.

As the Internet grows more intertwined with the physical world, the stakes rise. Cyberbullying gets nastier and hate groups and terrorist organizations use modern technology to advance medieval-era agendas. As the world fragments into communities of every possible perspective, anyone can be cast as a villain, and any retribution can be justified (however misguided). Offline, tempers might lead to raised voices and the occasional black eye. Online they lead to a torrent of abuse, the destruction of careers and personal lives, or the leaking of intimate material. The Internet has changed how we get mad and get even. Spoiler alert: it stuffed our better angels into the trunk and drove the car into the river.

Trolling for Evil

Lindy West is a writer for sites like *Jezebel* as well as publications such as *GQ* and *The Guardian*. Her work regularly appears online and is often targeted by trolls. One incident in particular illustrates the extent of troll behaviour. According to West, “in the summer of 2013, in certain circles of the Internet, comedians and feminists were at war over rape jokes. Being both a comedy writer and a committed feminist killjoy, I weighed in with an article in which I said that I think a lot of male comedians are careless with the subject of rape.”¹⁴⁶ Trolls responded with disgusting comments, attacking her beliefs, demeaning her worth, and making specific physical threats. Unfortunately, many female writers are regularly subjected to this type of abuse from anonymous miscreants and it became routine for West. She said, “I was eating 30 rape threats for breakfast at that point, or more accurately, ‘you’re fatter than the girls I usually rape’ threats. And I thought I was coping. But if you get a blade sharp enough, it’ll cut through anything.”¹⁴⁷

What happened next was especially egregious, even within the realm of anonymous hateful trolls; West received a message from the Twitter account of “PawWestDonezo”. Paul West is the name of Lindy’s father and Donezo refers irreverently to the fact that he is deceased (“done”). The troll went to the trouble of researching Mr. West and used a beloved family photo as the account’s profile picture. The Twitter profile read “embarrassed father of an idiot—other two kids are fine, though.” In the location field, the troll posted “dirt hole in Seattle.” In the face of this emotionally devastating attack, West went against the common wisdom of ignoring the troll and instead wrote a heartfelt article on *Jezebel* explaining how much it hurt.

As it turns out, this case had a relatively happy ending in that the harassment stopped and the attacker sincerely apologized. The troll responded to the *Jezebel* article in a private email:

Hey Lindy, I don't know why or even when I started trolling you. It wasn't because of your stance on rape jokes. I don't find them funny either. I think my anger towards you stems from your happiness with your own being. It offended me because it served to highlight my unhappiness with my own self. I have emailed you through two other Gmail accounts just to send you idiotic insults. I apologize for that. I created the [email] account and Twitter account. I have deleted both. I can't say sorry enough. It was the lowest thing I had ever done. When you included it in your latest Jezebel article, it finally hit me. There is a living, breathing human being who's reading this shit. I'm attacking someone who never harmed me in any way and for no reason whatsoever. I'm done

*being a troll. Again, I apologize. I made a donation in memory to your dad. I wish you the best.*¹⁴⁸

West verified that the donation was indeed made to the cancer center where her father had been treated. She had the troll's personal information and could have retaliated for the pain he caused by making it public, but instead chose to forgive him. She went on to interview him about why he trolled people for an episode of the *This American Life* podcast. West summarized her experience with meeting her troll:

*People say it doesn't matter what happens on the Internet, that it's not real life. But thanks to Internet trolls, I'm perpetually reminded that the boundary between the civilized world and our worst selves is just an illusion. Trolls still waste my time and tax my mental health on a daily basis, but honestly, I don't wish them any pain. Their pain is what got us here in the first place. That's what I learned from my troll. If what he said is true, that he just needed to find some meaning in his life, then what a heartbreaking diagnosis for all of the people who are still at it. I can't give purpose and fulfillment to millions of anonymous strangers, but I can remember not to lose sight of their humanity the way that they lost sight of mine.*¹⁴⁹

While West's troll may have found salvation in retirement, all across the electronic universe the toxic activity continues unabated, sometimes blurring the lines between fictional characters and the real-life actors who portray them. For those who have not seen AMC's hit TV series *Breaking Bad*, bear in mind that some spoilers follow. (Also, I recommend binge watching the entire series—it is awesome.) Protagonist Walter White is an overqualified high school chemistry teacher who finds out that he has lung cancer. Worried about his family's finances, he teams up with underachieving former student Jessie Pinkman to make and sell crystal meth as a way to pay for his treatment and support his family after his death. Brilliantly portrayed by Bryan Cranston, White transforms over the course of the series from, in the words of series creator Vince Gilligan, "Mr. Chips to Scarface." Charismatic anti-heroes are common in popular culture. We root for sociopathic Tony Soprano and have a grudging admiration for Hannibal Lecter. Walter White is different than these two as he is not a mob boss or a cannibal when we meet him; he is a soft-spoken milquetoast. Over the course of the series, there are many points where his dark side erupts and we *should* stop cheering for him, although most viewers don't—perhaps because each season features a villain who is worse by comparison.

All of the characters are complex and conflicted. Walter's brother-in-law and Drug Enforcement Agency agent Hank regularly breaches protocol to help friends and family; his wife Marie is a judgmental kleptomaniac. Pinkman, who is generally regarded as the embodiment of humanity in the show, struggles mightily with his own addiction, murders a gentle scientist (albeit one who, with a libertarian bent, cooks methamphetamine) and contributes directly or indirectly to the deaths of dozens of people.

However, it is only Skyler White, portrayed by Anna Gunn, who was attacked by the Internet fanbois. Skyler is Walter's wife and is no more conflicted than any of the other characters, but is perceived by some fans as an enemy for standing up to Walt and being "unappreciative for all he is doing for the family." In an op-ed for the *New York Times* describing how the biggest role of her career also involved terrifying threats, Gunn wrote:

My character, to judge from the popularity of Web sites and Facebook pages devoted to hating her, has become a flash point for many people's feelings about strong, non-submissive, ill-treated women. As the hatred of Skyler blurred into loathing for me as a person, I saw glimpses of an anger that, at first, simply bewildered me... But I was unprepared for the vitriolic response she inspired. Thousands of people have "liked" the Facebook page "I Hate Skyler White." Tens of thousands have "liked" a similar Facebook page with a name that cannot be printed here... At some point on the message boards, the character of Skyler seemed to drop out of the conversation, and people transferred their negative feelings directly to me. The already harsh online comments became outright personal attacks. One such post read: "Could somebody tell me where I can find Anna Gunn so I can kill her?" Besides being frightened (and taking steps to ensure my safety), I was also astonished: how had disliking a character spiraled into homicidal rage at the actress playing her?¹⁵⁰

This escalation of rage and its transference from fictional character to the actor who portrayed her is certainly frightening, and a strong example of Internet-enabled Wrath.

Trolling can also extend beyond online harassment into real-life situations. For example, Anonymous wanted to punish Aaron Barr, the former CEO of HBGary Federal, for posting negative information about the group. Hackers gained control of HBGary's website, deleted corporate information, hijacked Barr's email and Twitter account, and remotely wiped his iPad.¹⁵¹ That's pretty real. "Doxxing" (the term derives from doc as in document) is an activity where trolls bully their targets by posting private information

such as full identity, contact information, and workplace details. Technology commentator Kathy Sierra fell victim to a particularly heinous attack. Her personal information including home address and social security number were widely posted along with obscene, doctored photos of herself and her children.¹⁵² Doxxing attacks sometimes target online activity that was meant to be anonymous, or people who are in no way public figures. In the case of a dox attack, targets often need to shut down social media accounts to try to turn off the harassment, or at least prevent it from extending to their friends, family, and business contacts. In extreme situations, some people need to quit jobs, drop out of schools, and change locales or even names. Not only does doxxing deprive private citizens of reasonable privacy, it also extends the harassment episode by making the victim's personal information available to other bullies, who then pick up the baton and run with it.

Another nasty—and dangerous—online bullying activity, that we touched on in chapter two is “swatting.” This attack, typically targeting online video game players, involves making a fake emergency call to 9-1-1. The goal of the attack is to convince police (using false information) to send a SWAT team to burst into the target's house to make an arrest. These attacks waste emergency personnel time, potentially endangering actual victims of other incidents, and place armed police and the targets in undue danger. Victims also suffer the psychological effects of their experience of a terrifying armed home invasion.

There's No Justice Like Mob Justice

As we discussed in chapter two, there are occasions where it seems that only vigilantes can deliver justice—mostly when the official governing body is too inept, impotent, overwhelmed, or corrupt to properly perform its duty. In these cases, people feel forced to take justice into their own hands under the theory that otherwise, perpetrators will go unpunished. There are, of course, serious downsides—vigilantes are not bound by rules, procedures, or rights of the accused, and there are usually fewer consequences if they make mistakes. The anonymity of the Internet emboldens vigilantes and often the mob mentality truly lives up to the torch-and-pitchforks motif.

Explicit public shaming, such as locking people in pillories for public display, was phased out in England and the United States in the 1840s. It does have its appeal—you have probably seen people post “name and shame!” in response to their friends' complaints about perceived or real slights. Personally, my standard response to this type of post is “after all, there is no justice like mob

justice,” but I use it sparingly because I have a rule about not arguing with strangers on the Internet.¹⁵³

Online vigilante justice is well entrenched in China; the term *renrou sousuo yinqing* means “human flesh search engines.” Online vigilantes track down people who commit bad acts; targets include a woman who abused a cat and a man whose infidelity drove his wife to suicide. Justice is meted out through official channels as well as via *Scarlet Letter*—type actions including vandalizing the property of offenders in ways that often describe details of their crimes.¹⁵⁴

Public shaming goes beyond deeds—even opinions spur outrage. For example: Proposition 8 was a contentious ballot initiative in California to eliminate the rights of same-sex couples to marry. The initiative passed in 2008 by a small majority, although it was later ruled unconstitutional. Even though it represented a majority at the time (public sentiment has since dramatically changed to support same sex marital rights), individual supporters—especially donors—were targeted for public shaming. The most famous case was Brendan Eich, the inventor of JavaScript, who briefly (eleven days) served as CEO of Mozilla. His \$1000 donation in support of Proposition 8 was met with massive derision on social media. A representative Twitter post reads, “Apparently @brendaneich, father of #JavaScript, isn’t as versatile as his language. He donated \$1000 in support of a gay marriage ban.”¹⁵⁵ Eich resigned from Mozilla, stating in his blog, “Our mission is bigger than any one of us, and under the present circumstances, I cannot be an effective leader.”¹⁵⁶

A website called Eightmaps created a mashup that took publically available information about donors to the pro-Proposition 8 advocacy group and posted names, addresses, and locations on a Google Map. Evgeny Morozov writes in *To Save Everything Click Here: The Folly of Technological Solutionism*:

The obvious problem with sites like Eightmaps.com is that, in exploiting our rarely examined admiration of transparency, they can be used to suppress virtually any kind of political cause, regardless of where it falls on the liberal-conservative spectrum. It’s naïve to think that this is just a conservative problem, as some pundits have maintained; now that sites like Eightmaps.com can be set up in a matter of minutes—both the data and the technological infrastructure are available for free—many other important social debates can be greatly affected. As one commentator put it, ‘Would you give to the Council on American-Islamic Relations, La Raza,

*or Planned Parenthood if you thought right-wing goons would Eightmap you, as the left-wing goons have Eightmapped social conservatives?*¹⁵⁷

Even if you believe that someone should be shamed because they have a different political opinion than you, this method is troubling for many reasons. First, legislation is complicated and the person in question could object to any part of it. For example, a politician may have added a rider to an otherwise acceptable law that the person adamantly opposes. Another possibility is that someone objects to a proposition because they think that it is ineffectual and doesn't go far enough—in essence, they are telling legislators to start over and create a more comprehensive law. Eightmaps would shame this person for the wrong reasons.

BinCam is an idea that makes sense in principle, but in practice leads to public shaming and intense invasion of privacy. From the organization's website:

*BinCam is a two-part system designed to increase individuals' awareness of their food waste and recycling behaviour. It uses a standard kitchen bin augmented with a mobile phone to automatically capture and log an individual's waste management activity. Photos are tagged using a crowd sourcing service and uploaded to the BinCam application on a social network site, which encourages playful engagement and reflection upon a user's personal bin data. People can review and share communications about the bin-related behaviour of themselves and others.*¹⁵⁸

Anja Thieme, a postgraduate student leading the project, claims "There is a naming and shaming element to the experiment although it's fun rather than humiliating. It's a bit like having your conscience sit on your shoulder niggling away at you. And on top of that you know that other people are also judging you. Normally when you throw something away and the lid goes down you forget about it— out of sight, out of mind—and that's the end of it. But the reality could not be further from the truth. Waste has a massive environmental impact."¹⁵⁹

Of course, the same privacy challenges arise. If your garbage is posted to Facebook, everybody has access to the data. How do you explain that the drug residue came from a neighbour's contribution to a dinner party? The receipt that lists birth control devices that you do not personally use? Letterhead from an out-of-town hotel? Should you even have to make these explanations?

But I Don't Want To Be a Celebrity

The Internet never forgives and never forgets. Scott Bartosiewicz knows this well. He was a social media contractor for New Media Strategies and was managing the Chrysler account. He thought that he was logged into his personal Twitter account when he posted, “I find it ironic that Detroit is known as the #motorcity and yet no one here knows how to [expletive] drive” to the Chrysler brand feed. Panicking, he immediately tried to delete the post but it had already been retweeted and was out of his control. After he lost his job he lamented that all of his good work was “being overshadowed by 140 characters.”¹⁶⁰

Shawn Simoes also learned this lesson the hard way. He was an engineer for Ontario Hydro who engaged with Shauna Hunt, a female reporter trying to do a live report at a Toronto FC soccer game. The reporter thought Simoes and his friends were about to yell an obscene phrase that was part of an immature, sexist, and offensive meme.¹⁶¹ Hunt was tired of interruptions (she said that she received these taunts almost every time she did live shots). She called the group out on it and Simoes justified the meme, adding that she was lucky that she wasn't subject to further abuse like that which British reporters are often subjected. He was immediately identified via social media and his employer fired him for violating the public utility's code of conduct. (He was reinstated six months later after an arbitration process during which he and his union presented letters of recommendation from thirty-four colleagues, more than half of whom were female.^{162 163}) Hunt reported that Simoes sent her a thoughtful, penitent apology, but Google will ensure that the drunken, immature comment will stay with him for life. Simoes did not cast a sympathetic shadow to most people; his salary was high enough to qualify for the Sunshine List—an annual tabulation of Ontario public sector workers earning more than \$100,000. His case garnered much attention in the Canadian media, with most of the hundreds of online commenters strongly condemning his behaviour and congratulating Ontario Hydro for temporarily firing him. There was also, however, a significant cadre of people who thought that the punishment was too severe, arguing that he was off-duty at the time, did not actually speak the offending phrase, and was invited to speak on camera by Hunt. Toronto employment lawyer Howard Levitt commented: “what's riveting about this case is that the guy's an ordinary schlub. A lot of people will be looking at him and thinking, 'My God, that could be me.'”¹⁶⁴

Simoës's story is not unique. In December 2013, Justine Sacco tweeted right before boarding a plane from London to South Africa: "Going to Africa. Hope I don't get AIDS. Just kidding. I'm white." She spent fourteen hours electronically disconnected as her flight travelled over the Atlantic. Meanwhile, the Internet roiled over the comment. One of her meagre 170 followers forwarded the message to Sam Biddle of Gawker, who in turn retweeted it to his 15,000 followers. The message exploded from there. The Internet demanded that her employer fire her. #HasJustineLanded was a trending topic on Twitter. There was even a self-styled paparazzo lurking in the airport to try and capture the moment that she was able to check her phone.

Jon Ronson included Sacco's story in his excellent book *So You've Been Publically Shamed*. He interviewed her, sharing with his readers that she was devastated by what happened (she was indeed fired from her job, and many people, including the family members that were to host her in South Africa, were furious with her) and was truly remorseful for the comment. Ronson felt that her tweet, while failing as a joke, was really meant to be an observation on white privilege—similar to comments Ronson himself had made. She told him:

It was a joke about a situation that exists. It was a joke about a dire situation that does exist in post-apartheid South Africa that we don't pay attention to. It was a completely outrageous commentary on the disproportionate AIDS statistics. Unfortunately, I am not a character on South Park or a comedian, so I had no business commenting on the epidemic in such a politically incorrect manner on a public platform. To put it simply, I wasn't trying to raise awareness of AIDS, or piss off the world, or ruin my life. Living in America puts us in a bit of a bubble when it comes to what is going on in the third world. I was making fun of that bubble.¹⁶⁵

Sacco had only 170 followers—an amount so tiny that she probably she thought she was sending her acerbic comments (directly before the tweet in question, she was mocking a fellow traveller's body odour) to a tight group of friends and a smattering of corporate accounts that had given her automatic follow-backs. She had no expectation that her comment would reach such a huge audience. This story is a cautionary tale to us all to remember that once something is said on the Internet, it can potentially be seen by anyone, and that includes your mom, your boss, your kids, your spouse or partner, and future potential employers.

Ronson also shared the Adria Richards story in his book. While at a conference in San Diego, Richards was offended by a joke told by two attendees sitting behind her (they made a double entendre using “forking” and “dongle”—words that have both a technology meaning as well as an ignoble immature one). She took their picture and tweeted it, along with the comment: “Not cool. Jokes about forking repo’s in a sexual way and big dongles. Right behind me.” Conference security investigated and spoke to the two coders, who apologized. One of them (he identified himself as “Hank” to Ronson) was summoned to his boss’s office and fired.

The Internet exploded, but not on the two men. It exploded on Richards. Immediately, all of her social media was analyzed—critics delighted in pointing out that the previous day, Richards tweeted a penis joke as least as inappropriate as Hank’s comment.¹⁶⁶ A conference organizer posted a detailed blog that described Richards as difficult to work with and prone to belittling unpaid volunteers.¹⁶⁷ As in most of these cases, the wrath of the Internet generated a monstrous, misogynist response. Comment boards and all of Richards’s social media accounts were overwhelmed with ugly criticism—much of it hateful, violent, racist, and sexist. SendGrid, her employer, received hundreds of messages demanding that she be fired and their corporate website fought off distributed denial of services (DDoS) attacks.¹⁶⁸ Richards lost her job as an ambassador, as SendGrid determined that she had outraged their customer base so much that she would be ineffective in that role.

As part of his analysis, Ronson also interviewed Mercedes Haefer, a very vocal member of the 4Chan community (an Internet community that *The Guardian* once described as “lunatic, juvenile... brilliant, ridiculous and alarming”)—Gabriella Coleman describes her as “a linguistic force of nature—her mouth can run circles around a drunken sailor looking for a fight.”¹⁶⁹ Haefer’s assessment of why Richards was targeted with such violent, sexist language is: “Yeah, it’s a bit extreme, 4Chan takes the worst thing it can imagine that person going through and shouts for that to happen. I don’t think it was a threat to carry through. And I think a lot of its use really did mean ‘destroy’ rather than ‘sexually assault’...4Chan aims to degrade the target, right? And one of the highest degradations for women in our culture is rape. We don’t talk about rape of men, so I think it doesn’t occur to most people as a male degradation. With men, they talk about getting them fired. In our society, men are supposed to be employed. If they’re fired, they lose masculinity points.”¹⁷⁰

In the galley version of the book, Ronson included the line, “I don’t know if Mercedes is right, but I can’t think of many worse things than being fired,” which sparked its own outrage. Writer and Editor Meredith Haggerty tweeted her disapproval that Ronson was seemingly equating rape with job loss, and many other jumped on via retweets. Ronson’s reply was that the sentence in question was removed in the final copy of the book. This defence did not convince @Charles_vBrooks, who responded, “Jon Ronson sure is mad about people reading things he fully intended to publish until someone told him he sounded like an asshole.”¹⁷¹ Another commenter, @Moranfox, came to his defense with, “Nice to see people publicly shaming Jon Ronson for an out-of-context quote that was actually cut from his book. Good job, Twitter moralists.”

For those outside the publishing industry, perhaps an explanation of a galley is in order. It is an uncorrected proof, typically softcover, with minimal formatting and often without “extras,” including forewords, acknowledgements, or an index. Typically, the galley is sent to a limited audience for feedback, quote approval, and review by potential blurb-writers. It is likely that someone pointed out it could be interpreted that he is agreeing with Mercedes’s provocative statement, even though his statement clearly says that he is unsure. Context is important as well—and nuance does not play well within the character restriction of Twitter. In contrast, when the reader arrives at the place the sentence appeared in the galley, they have just spent eight pages getting to know Mercedes as an unrepentant Internet freedom advocate who thoughtfully speaks in often coarse language about troll community anthropology with the insight of an insider.¹⁷²

It was likely at the galley stage that Ronson was advised to remove the line (often the people who are asked to provide blurbs are authors themselves, and the line probably elicited at least one “yikes”). In any case, the line did not appear in later versions. For the critics who thought it never should have been in the galley, would they be just as upset if it was in a rough draft in Microsoft Word? Jotted notes on a yellow pad? Or was the fact that Ronson even considered including his own apparently non-critical comment about Mercedes’s observation damning enough?

Whether the individuals described in the examples above deserve their public shaming by the Internet mob depends on your point of view. Many people will at least concede that their punishment in some of the situations was out of proportion. Some people think that “mob” is the wrong word—

in the current climate, all people are now empowered to speak out against injustice and microaggressions. Others believe that “mob” is the perfect term: that there is no “freedom from being offended” and that mob leaders are “crybullies” (a portmanteau of crybaby and bully) that demand all speech that goes against their worldview be outlawed.

Effective search engines and loquacious social media use mean that there is a great deal of content that can quickly be checked for offensiveness—especially by the easily offended. Shortly (and I mean very shortly) after Trevor Noah was announced as Jon Stewart’s *Daily Show* replacement, web detectives discovered that his Twitter oeuvre contained non-politically correct entries. For example, in July 2012, he tweeted, “I’m watching Olympic women’s hockey. It’s like lesbian porn. Without the porn.”¹⁷³ Cringe-worthy, for sure, but many fellow comedians came to his defence, including new *Daily Show*¹⁷⁴ colleague Aasif Mandvi, who stated, “The guy made some off-colour, irresponsible tweets. He was trying to be funny... How much are we responsible for the things we said on Twitter five or ten years ago? I don’t know.”¹⁷⁵

Others pointed out that many comedians test out material with fans online; the target audience will understand the comedian’s tone and material and is less likely to be offended. But the open nature of Twitter accounts mean that people without context will still read—and judge.

Bill Burr, a stand-up comic who is considered a “comedian’s comedian”, absolutely does not care about people who are offended by his tweets. He has told Conan O’Brien, “When people go into your Twitter account from ten years ago and say—‘you said this about whatever...*Saved by The Bell* in 1988. I want an apology.’ Okay, get in a time machine and talk to me back then.”¹⁷⁶ Fellow comedian Tina Fey recently pushed back on Internet criticism in a more nuanced and strategic manner—she simply wasn’t going to play anymore. In an interview with Net-a-Porter, she commented: “steer clear of the Internet and you’ll live forever. We did an episode [of *Unbreakable Kimmy Schmidt*] and the Internet was in a whirlwind, calling it ‘racist,’ but my new goal is not to explain jokes. I feel like we put so much effort into writing and crafting everything, they need to speak for themselves. There’s a real culture of demanding apologies, and I’m opting out of that.”¹⁷⁷

AMA Means Ask Me ANYTHING

In the cases of these shamed individuals, the targets of Wrath generally did not seek out publicity, and to a person appear to regret that their words

and deeds went viral. There is another type of Wrath reserved for people who go into a curated community and do not abide by its standards and expectations. Reddit, the so called “front page of the Internet,” could appear in just about every chapter of this book. Its best known feature is probably the AMA or “ask me anything” sessions. These are set up just how it sounds—the guest (celebrities such as President Obama, Jerry Seinfeld, and Arnold Schwarzenegger, as well as regular people speaking about their areas of expertise) are asked questions and are expected to directly respond. The interface is austere nested text, and if the guest tries to pivot from or avoid questions, the community will respond with hostility. Directly before Reddit’s CEO Ellen Pao departed and new behavioral standards were introduced, a particularly inelegant AMA featuring the Rev. Jesse Jackson occurred.

During an AMA, participants enter questions that other members of the community vote on; the most popular rise to the top of the queue. Often, questions that are provocative or offensive (depending on your point of view) rise to the top. That certainly happened here. Jackson faced the following post:

Mr. Jackson, You are an immoral, hate-filled race baiter that has figured out how to manipulate the political system for your own gain. You’ve personally set back race relations year after year and continue to do more harm than good. Extorting money from companies to line your pockets and threatening to bus in protestors and create a fake racial controversy if they don’t agree to pay you off is NOT civil rights activism. My question is simple: how is your relationship with the illegitimate child you fathered in 1998 while cheating on your wife? Bonus question: How much money have you extorted from various people and companies over the years of practicing your shakedown scheme? Do you think Al Capone would be jealous of your business model if he were still alive?

The response, which started with a quizzical “I do”—it is unclear whether that was a direct response to the Al Capone question—quickly meandered into platitudes unrelated to the question.

I do. But I was jailed in 1960. For trying to use a public library. And that caused more good than harm. I marched to end segregation. The day Dr. King spoke on Washington, in 1963, I was there for that speech. That day, from Texas to Florida, you couldn’t use a single public toilet. We could not buy ice cream at Howard Johnson’s, or stay in Holiday Inns. We fought to bring those barriers down. And because those walls are down,

all the new interstate construction across the South— the new bridges and ports, and seaports—that’s progress. You couldn’t have teams behind the Cotton Curtain. You couldn’t have had Olympics in Atlanta behind the Cotton Curtain. You couldn’t have Toyota, and Michelin, behind the Cotton Curtain, so we pulled those walls down.

So our work has been beneficial. And it seems to me that people who benefit from that work ascribe it to the wrong reasons.

When the laws change to make the South more civil, that brought in more investment. So we’ve made America better.

All these changes have come from our work. Our work has bene (sic) good for the South, and good for America.

My goal is to expand our consciousness, to create as big a tent as possible, as we fight for justice and world peace. I was able to bring Americans home from jail, from prison, and gaining those freedom of those Americans was the highest and best use of my talents and time.

This particular AMA was more complicated than many; for one thing, it was one of the first episodes that incorporated video. In addition, the moderator (who was fired shortly after the session) asked questions of Jackson, and his verbal responses were transcribed by a typist into the Reddit chat. Many thoughtful and illuminating responses that appeared later in the session received relatively minuscule attention.¹⁷⁸ In this particular post, the asker was impolite, clearly had an agenda, and presented the loaded query in such a manner that it would be difficult to respond to all aspects of it without accepting the premise of the question.

Regardless, Redditors did not think that Jackson had followed house rules—he avoided answering the questions asked. The harsh comments came fast and furious and included:

- You do realize the questions were pertaining to the present and not forty years ago?
- I think you missed the part where [the original poster] asked you questions.
- Wow. That was some fancy dancing around a few direct questions. Lol.

Of course, Jackson is far from being the only guest who has raised the ire of Redditors.

Actor Woody Harrelson regularly engages in provocative discussions. He is an advocate of marijuana legalization, an environmental activist, and

a staunch vegan who insisted that the Twinkies his character obsessively consumed in *Zombieland* were made with cornmeal mix and included no dairy or animal by-products.¹⁷⁹ So his AMA probably went well, right? Not really. Like most of the AMA train wrecks, the Harrelson session did not work because the subject did not understand the format or would not deliver what the audience wanted. At the time, Harrelson was promoting the movie *Rampart* and treated the AMA like any other fluff interview—he would show a clip from the film that prominently featured him, answer the same questions he’s heard a dozen times before on the tour, and generally be charming.

Redditors had something else planned. The first question asked about a tryst with a high school student after Harrelson allegedly crashed a Los Angeles prom. Harrelson dismissed the allegation, then asked that questions “focus on the film.” This request was met with “You said AMA. That means ‘Ask Me Anything.’ Not ‘Ask Me Anything with regards to this movie I’m pushing.’” It went downhill from there as even thoughtful questions from fans were met with platitudes about the film.

Interestingly, at about the same time, Robert Downey Jr. walked out of an interview with British journalist Krishnan Guru-Murthy when the questions departed from *Avengers: The Age of Ultron* to focus on Downey’s history with drugs and his stint in prison. Downey and his camp insisted that they laid out ground rules in advance with respect to what topics he would address. He reflected later during an interview with Howard Stern, “I’m one of those guys where I’m always kind of assuming the social decorum is in play and that we’re promoting a superhero movie, a lot of kids are going to see it. This has nothing to do with your creepy, dark agenda that I’m feeling like all of a sudden ashamed and obligated to accommodate your weirdo shit.”¹⁸⁰ For his part, Guru-Murthy maintained, “We don’t do promotional interviews on Channel 4 News. We agree with PR people that as well as talking about a new movie for a while, we want to ask wider ranging questions on relatively serious topics, and we don’t guarantee to run [‘British’ for ask] any answers in particular.”¹⁸¹

The video of the interview, including shots of Downey’s off-screen handlers, went viral. In this case, Internet commenters were overwhelmingly on Downey’s side. Similar to the Jackson and Harrelson stories, Downey went to an interview to promote a movie and resisted talking about other matters, especially personal subjects. The fact that the exchange was experienced by most observers in video form where they could see the discomfort in

Downey's face and hear the anguish in his voice certainly made him sympathetic. At the same time, Guru-Murthy came across as smirky and confrontational, especially to American viewers who may have never seen his work before. Downey's comeback story resonates with a lot of people. Here was an acclaimed actor (he was nominated for Best Actor for his phenomenal performance in *Chaplin* at the age of twenty-eight) who hit rock bottom before a massive comeback—he has earned more than \$100 million for portraying Iron Man in six movies and has established himself as an A-List actor. The main difference between the reaction to Jackson's and Harrelson's evasion to that of Downey Jr.'s, though, is the AMA clubhouse—an arena with its own rules that are fervently enforced by its denizens.

Riots and 3-D Printed Weaponry

Just as social media can help peaceful protesters organize action, it can accelerate mobs when demonstrations turn violent. In 2011, Mark Duggan, a twenty-nine-year-old, black British man was shot and killed by Tottenham police. Tottenham at the time was suffering from serious racial and classist pressure and the ad hoc demonstrations surrounding Duggan's death devolved into a riot. Similar events occurred all over England. Rioters used BlackBerry messenger (BBM) to organize. BBM became the choice of the rioters because it was free, instant, and easy to quickly spread messages within a network.¹⁸² Many people believed it was better than Twitter or Facebook because the messages are untraceable, although the BlackBerry company eventually worked with British companies to help track down offenders.

3-D printing offers significant challenges to security and law-enforcement officials. Even an innocuous-looking toy can be developed with sharp enough corners to make it an effective stabbing weapon. In 2012, a group called Defense Distributed raised the stakes by posting instructions on how anyone with a 3-D printer could build a working gun. American libertarian Cody Wilson widely shared instructions for "the Liberator," a 3-D printed single-shot weapon. He compares his work to that of libertarians Julian Assange and Kim Dotcom. "I number myself among them, at least in spirit," he says. "I think the future is openness to the point of the eradication of government. The state shouldn't have a monopoly on violence; governments should live in fear of their citizenry."¹⁸³

Not surprisingly, government officials disagree with Wilson. In response to the Liberator's success (the plans were downloaded more than 100,000 times before access to them was removed), the Department of Homeland

Security posted a bulletin stating “Significant advances in three-dimensional printing capabilities, availability of free digital 3-D printer files for firearms components, and difficulty regulating file sharing may present public safety risks from unqualified gun seekers who obtain or manufacture 3-D printed guns.”¹⁸⁴ Legislators are struggling to keep up with innovations as guns from 3-D printers obviously bypass laws regulating gun sales. Also, the fact that the components, made of plastic resins, do not show up on an airport metal detectors compromises passenger security.

The original reviews of the Liberator were decidedly lukewarm—the bullets did not spin like they would when fired from a metal gun and the unit quickly broke down, in some cases, after only a single use. Lewis Page, a journalist who covers military matters, opines:

*The only way to be at all confident of a disabling result using a Liberator would be to press it into your enemy’s body before firing. This is also true of a kitchen knife, and a vigorously thrown kitchen knife (or half-brick) would be at least as effective at a distance as the “Liberator.” It’s not a gun. It’s not even a 1950s style “zip gun”: the pipe used for zip guns is a lot better than you can make in a 3-D printer, and is correspondingly more effective—and safer. In a real gun which you would actually carry into a fight, there will also be various ancillary equipment which will mean you can shoot it again without having to manually insert another cartridge. Nobody serious has used single-shot firearms in combat for well over a century.*¹⁸⁵

However, typical to other open source projects, once a plan is uploaded into the commons, engineers will debug a faulty design and develop better versions. Already, designs for an AR-15-styled gun (one of the guns that Adam Lanza used when he killed twenty-six people in Sandy Hook Elementary School in Newtown, Connecticut) that can fire hundreds of rounds are available online. Improved multi-material 3-D printers that include metallic components also remove the plastic-only limitations.¹⁸⁶

Asymmetrical Warfare and YouTube

Asymmetrical warfare usually benefits the smaller party. Even a superpower will have difficulty tracking down a small guerilla force and standard rules of engagement are difficult to adhere to when combatting a non-state entity. This is the situation faced by the United States, Russia, and other powers with respect to entities like ISIS.¹⁸⁷ There is no one with whom to officially negotiate and no country to occupy; in addition, any attacks are almost certainly going to cause collateral damage against civilians. Terrorist groups

do not have state-run media for official broadcasts that can be influenced or shut down. From the insurgents' point of view, social media makes this a non-issue as it provides a viable alternative to traditional broadcasts and in some cases is more effective. By the end of 2015, ISIS controlled as many as 70,000 Twitter handles (although Anonymous began to actively shut these down after it declared war against the jihadists following terrorist attacks in Paris in November 2015).¹⁸⁸ The core group contributes up to 2000 tweets per day.¹⁸⁹ About four out of five of these tweets are in Arabic, the others divided amongst languages native to countries targeted for recruitment and support.

Ten years ago it would have taken very expensive equipment to capture and edit video equal to the quality now available using today's ubiquitous smartphones. As a result, insurgent groups can economically make powerful, compelling videos to boost their recruiting and intimidation campaigns. For example, ISIS produces videos aimed at disaffected youths in Western countries; one video aimed at Canadian youth features images of forests and lakes, references hockey, and is narrated by a recruit with an authentic Canuck accent. The videos, complete with snappy graphics and an inspirational soundtrack, promise recruits a higher purpose, excitement, and a sense of camaraderie. Messages are customized for each target group; the protagonist in the Canadian themed video is "Abu Muslim," a Caucasian recruit from Northern Ontario who was later killed in battle in Syria. He pitches for others to join him in jihad, introducing himself by saying, "Before Islam I was like any other regular Canadian. I watched hockey. I went to the cottage in the summertime. I loved to fish...I was an everyday, regular Canadian before Islam." He then speaks about working for a greater mission before footage of him marching towards his final firefight.¹⁹⁰ Second generation immigrants in North America and especially Europe find it difficult to achieve as much as their peers and as a result can be easier targets for radicalization. According to anthropologist Scott Atran, the reason youth are inspired to join ISIS "is not so much the Qur'an or religious teachings... It's a thrilling cause that promises glory and esteem. Jihad is an egalitarian, equal-opportunity employer: fraternal, fast-breaking, glorious, cool—and persuasive." The videos aim to reinforce this message.¹⁹¹

Digital technology also makes terrorism easier. For example, a mobile phone duct-taped to an IED and carried by a drone can be remotely landed in any location.¹⁹² By simply setting the phone to vibrate, the IED can be detonated. These tactics use common technology and cost very little. A self-driving car, while a more expensive proposition, can be filled with explosives and

detonated in a position strategically chosen for maximum damage without requiring a suicide driver.

ISIS, as well as criminal groups such as the Mexican drug cartel, broadcast videos that demonstrate the graphic violence awaiting those who cross them. The videos (or at least the YouTube versions) depicting prisoners being beheaded carefully cut away before the final act, keeping the propaganda within the user guidelines prohibiting the dissemination of acts of extreme violence. Sites like Liveleak display the full gruesomeness.

Social media also enables communication between members of terrorist groups. Since there are so many platforms that allow messaging, it is incredibly difficult, even with the draconian surveillance powers that CIA whistleblower Edward Snowden lamented, to monitor and detect attack planning. Keyword searching can reasonably be conducted within emails, direct tweets, and Facebook messages (although terrorists can use codes and encryption to make detection more difficult), but there are many other options for communicating, including WhatsApp (now a Facebook property), that are more difficult for authorities to monitor. Some jihadists, including the perpetrators of the Paris attacks mentioned above, reportedly use the PlayStation 4 messaging service (or voice chats during actual gameplay) to plan attacks. Not only are such platforms more opaque to authorities, *regular* communication for those playing war games such as *Call of Action* include detailed discussions of weapons and battle plans. Not that authorities are not up to the challenge; the documents leaked by Snowden revealed that American and British spy agencies actively monitored games such as *World of Warcraft* looking for this very type of activity.¹⁹³

State and Corporate Surveillance and Punishment

The data collected pertaining to household activity and private conversations of gamers is also of great interest to law enforcement agencies. Even though Google is generally reticent to provide customer data to law enforcement, it does so when ordered by the court.¹⁹⁴ People will find themselves explaining why they were discussing drug use in front of their video game console, or why they used being at home as their alibi when Nest thermostat data on electricity use and motion sensor triggering clearly shows otherwise.

The stakes of technology-enhanced State surveillance are even higher when engaged by oppressive governments. In 2012, Saudi journalist

Hamza Kashgari tweeted an imaginary conversation with the prophet Mohammed. Even though he deleted the tweets after six hours, devout Muslims considered the posts blasphemous and quickly launched the Facebook group “The Saudi People Demand Hamza Kashgari’s Execution.” Kashgari fled to Malaysia but was quickly deported back to Saudi Arabia. He was imprisoned without trial for two years until pleas from international organizations and the support of some influential imams led to his release.¹⁹⁵ In another infamous Saudi case, Raif Badawi was arrested for running a liberal blog calling for free speech; the conservative Kingdom’s leaders found the site insulting to Islam.¹⁹⁶ Despite massive international outrage (bolstered by the “*Je suis Charlie*” campaign touting freedom of speech after French journalists were gunned down by offended jihadists), the Saudi Supreme Court upheld the sentence of 1000 lashes and ten years in prison.¹⁹⁷ Similarly, journalist Ali Lmrabet was fined and imprisoned for writing articles that offended the Moroccan King, including a satirical post that suggested the royal palace of Skhirat might be for sale. After serving a prison sentence, Lmrabet received a pardon from the King, but found himself in trouble again three years later for comments he made in an interview. For this offense, he was fined and banned from publishing his blog and magazine for ten years.

Some companies and public sector organizations demand that employees provide passwords to their social media accounts so that their activities can be monitored. Defenders of this practice claim it is often done for “background check” purposes. The McLean County, Illinois sheriff’s office asks applicants to sign into their social media accounts so that officials can screen for material that would disqualify potential employees, such as “inappropriate pictures or relationships with people who are underage, [or] illegal behaviour.”¹⁹⁸ Orin Kerr, a George Washington University law professor, calls the practice “an egregious privacy violation [that is] akin to requiring someone’s house keys.”¹⁹⁹ Some State governments—California, Michigan, New Jersey, Maryland, and Delaware—have enacted legislation that restricts or prohibits employers from demanding access to social media accounts.²⁰⁰

Andrea Hernandez, a student at John Jay High in San Antonio, Texas, sued after school officials insisted that she carry an ID card that monitored all of her movements.²⁰¹ In an even more egregious example, a boy was suspended from school for drug use. While that sounds reasonable, the investigation methods were not. The school-issued laptops were equipped with a feature that could turn on the camera at any time,

ostensibly for security. During these “security checks,” school officials collected photos and videos of teenagers in the bedrooms and bathrooms of their homes, including times when they had absolute expectations of privacy. Oh, and in this case, the boy in question did not appear to be using drugs.

State surveillance is also empowered by cameras affixed to drones, leading to new challenges for privacy advocates. One clever way of defending against invasive drones is to jam the airspace by blasting out signals on the frequencies drones most often use. Since jamming technologies are against the law in many jurisdictions, other means of defence become necessary. A British company called Selex ES produces Falcon Shield, which locates drones via radar, infrared cameras, and electronic radiation. The Falcon Shield allows a user to take control of the intrusive drone to safely land it or cause it to crash. Selex ES officials state that under most circumstances, such as harmless mischief, simply taking command of the video camera and communicating with the pilot solves the problem.²⁰² Dutch law enforcement is partnering with a “raptor training company” called Guard From Above to train eagles to identify and capture drones and fly them to a safe place to be disabled.²⁰³ William H. Meredith, a Kentucky man, took a more direct route after being told by his daughter that a drone was continuously flying over his property—he fired a shotgun at it. He was acquitted of the charge of first-degree criminal mischief; Bullitt County, Kentucky, Judge Rebecca Ward dismissed the charges, stating “I think it’s credible testimony that [the] drone was hovering from anywhere, for two or three times over these people’s property, that it was an invasion of their privacy and that they had the right to shoot this drone.”²⁰⁴

Portrait of the Terminator as a Young Android

There are some clear advantages in replacing human soldiers with robots. Cyborg warriors can be stronger and faster, can withstand hostile conditions, and they do not require sleep, food, or other sustenance. They are not yet sentient beings, so a “wounded” or “killed” soldier is merely a repair job or a capital loss. Of course, there are downsides as well, especially from a moral standpoint. First, a wealthy country, or one willing to assume potentially significant debt, automatically is engaging in asymmetrical warfare if it uses robots to fight against people. More importantly, philosophers from Asimov on have debated the difficulties of teaching robots to be moral.

Google executives Eric Schmidt and Jared Cohen interview military scholar Peter Singer, the author of *Wired for War: The Robotics Revolution and Conflict in the 21st Century*, as part of their book *The New Digital Age*. The discussion included the provocative passage:

*Can a robot be brave? Can it selflessly sacrifice? Can a robot, trained to identify and engage targets, have some sense of ethics or restraint? Will a robot ever be able to distinguish between a child and a small man? If a robot kills an innocent civilian, who is to be blamed? Imagine a standoff between an armed ground robot and a six-year-old child with a spray-paint canister, perhaps sent out by an insurgent group. Whether acting autonomously or with human direction, the robot can either shoot the unarmed child, or be disabled, as the six-year-old spray paints over its high-tech cameras and sensory components, blinding it.*²⁰⁵

In this scenario, the robot warrior can commit evil acts, but without consciousness is merely executing on behalf of humans. The fog of war is opaque enough without decisions being made by artificial intelligence.²⁰⁶ In the case of a war crime committed by a robot, who is liable—the commander or the programmer?

The Israeli Defense Forces (IDF) uses technology to reduce civilian casualties, but also to hack into enemy computers. For example, the IDF uses social media to reduce civilian casualties by tweeting targets and autodialling residents directly before bombing raids. In 2012, Iranian centrifuges in an Iranian nuclear plant were attacked via Stuxnet, a computer worm that was able to damage not only the computers but the equipment that they controlled by stealthily making small but destructive adjustments. While no government officially claimed responsibility for the attack, it was featured as an accomplishment during a showreel at a retirement dinner for Gabi Ashkenazi, a general in the IDF.²⁰⁷

We've seen how technology impacts Wrath from bullying to warfare. Obviously there is a difference between the Internet turning on its "villain of the day" to the fury of a cyborg army, but that is a shallow recourse to the person under attack. In all aspects of Wrath, technology makes the job easier, communication more terrifying, and weaponry more intense.

Envy

Envy may be the most beguiling of the Sins. After all, Envy is the fuel that keeps capitalism running. Without the desire to have more things, nicer things, or better things than our friends and neighbours, our materialist-based economy might collapse around us, mighten it? A little Envy must be a good thing then, right? How deadly could it be? Take some Envy, add the Internet, and stir.

The ability to passively keep intimate tabs on every person we've ever met via social media leads to new opportunities for jealousy and misplaced longing. Like everyone else, we curate digital fantasy versions of ourselves (see the Pride chapter). But just because we suspect the Joneses are frauds doesn't mean we don't still try to best them. Our neighbours' salaries are easily inferred from sites like Glassdoor, while their property values can be looked up on Zillow—giving us an imperfect but sufficient scorecard to measure our Envy against. Entire industries are built on exploiting Envy—and they're profitable. FarmVille, for example, is designed to appeal to people's competitive natures; players will be so motivated to outperform their friends that they will pay for virtual goods to enhance the appearance of success. People choose vacation destinations in order to improve their TripAdvisor “where have I been” maps so they can brag on Facebook.

Other companies have extracted these core exploitations of Envy and transplanted them into even the most mundane activities, cunningly calling the practice “gamification.”

Facebook is, at its heart, an Envy engine, with people posting their accomplishments rather than their struggles. (Interestingly, while an occasional request for support is generally rewarded with empathy, a Facebook user who complains constantly is likely to be unfriended.) Mai-Ly Steers, a doctoral student at the University of Houston, conducted a study that showed Facebook use can lead to depression and other mental health issues. According to Steers, “although other studies have established links between depressive symptoms and Facebook... our study is the first of its kind to determine that the underlying mechanism between this association is social comparison. In other words, heavy Facebook users might be comparing themselves to their friends, which in turn, can make them feel more depressed.”²⁰⁸ While most people might react to this Envy in a docile manner, there is always a portion of people who will lash out, and can try to take down the people who intimidate them. And the online tools for that job are right in front of them.

Reality TV, which skyrocketed to popularity beginning in 1998, spurred on by the need for cheap programming during a Hollywood writer’s strike, generates a lot of Envy. Millions of fans, including the best alto in their church choir, watch *American Idol* thinking that they could be the next Jennifer Hudson and revel with *schadenfreude* when contestants fail (especially the egregiously bad hopefuls featured during the first weeks of the season). Corey Taylor, a prolific author and Grammy-winning musician (he is the lead singer of Slipknot and Stone Sour), describes this voyeuristic sadism in the Envy chapter of his memoir *Seven Deadly Sins*:²⁰⁹

American Idol does huge numbers in the first few weeks and the last two weeks, which means two things: We all want to see the winners in the end but we also want to scoff at and enjoy the losers who get ripped to shreds in the beginning...It is sadism at its greatest: the pointing and laughing as, one by one, these brave and cocksure hopefuls make and snake their way around a line that might as well get them into Disneyland, waiting hours and hours for a thirty-second chance to maybe make it onto the next half of the show. What they show you is a condensed version with lots of highlights you can chuckle and feel good about, because if you think about it too long, you will realize you are a [I’ll substitute jerk] for doing so. What they do not show you are the hours these people spent waiting and

*how they got more and more nervous and probably threw up a couple different times.*²¹⁰

Maybe Andy Warhol Meant Fifteen Thousand Likes

The Internet is really good at making someone famous, both deservedly and dubiously. In any case, celebrity status—even that which is fleeting—will generate Envy from those who do not think it is deserved. To make matters worse, the Internet is also really good at giving these envious celebrity-critics a powerful medium to unleash their vitriol, often with damaging results.

Rebecca Black was an Internet sensation. At the age of thirteen, she recorded a music video of the song “Friday.” It described a typical Friday for an American high schooler, written by two Los Angeles producers, and it became a major hit. Its first release on YouTube generated more 160 million views before it was taken down to be replaced by a pay-to-watch version. Since then, it was reposted on Black’s “official” site where it has garnered more than 85 million more views.

Beyond YouTube views (enough that Black and the songwriters actually generated significant royalty revenue), “Friday” enjoyed other successes.²¹¹ On April 1, 2011, it was performed on *Late Night with Jimmy Fallon* by the host along with Stephen Colbert, Taylor Hicks, and The Roots. The song was also performed on the television show *Glee* and in concert by many A-List performers, including Nick Jonas, Justin Bieber, and Katy Perry (in fact, Ms. Black appeared with Perry at the Los Angeles stop of her *California Dreams* tour for a duet version of the song).²¹² The technical description for “Friday” —according to the song’s Wikipedia site, “uses the 50s progression, a- I-IV-V chord progression that many popular songs have used, such as “Heart and Soul” and “Unchained Melody.” It is performed in the key of B major at a tempo of 112 beats per minute.”²¹³ I have no idea what that means, but it sounds like whoever wrote it knows what they are talking about.

Fame, success, and a six-figure payday—sounds like a dream for a teenaged girl, right? Unfortunately, such triumph by someone without conventional talent or experience generates great jealousy from people who do not think that success is warranted. Black, who was bullied even before she became an Internet celebrity, even switching schools and briefly becoming homeschooled to avoid her tormenters, was walloped by criticism and abuse. *Billboard* music critic Kevin Sutherland commented:

*Black's video for 'Friday' is one of those rare occurrences where even the most seasoned critics of Internet culture don't know where to begin. From the singing straight out of Auto-Tuned hell to lyrics such as 'Tomorrow is Saturday / And Sunday comes afterwards / I don't want this weekend to end' and a hilariously bad rap about passing school buses, 'Friday' is something that simply must be seen and heard to be fully appreciated... Black is just one of a number of wannabe pop stars coming from a production company called Ark Music Factory. The 'factory' holds casting calls for young teen girls, and if you're what they're looking for, you're flown to Los Angeles, where you're written a 'hit' single, record it, and make a music video.*²¹⁴

During the singer's appearance on *Good Morning America*, correspondent Andrea Canning, who, even if she forgot about journalistic ethics, should have at least remembered what it was like to be a thirteen-year-old girl, read nasty comments to Black and asked her to respond, before following up with "what's the meanest thing that you've read that maybe hurt you the most?"²¹⁵ Wow, Andrea, that's cold.

While professional music critics and mean-girl television interviewers slamming an eighth grader is dubious and probably unethical, online commenters, fueled by anonymity and keyboard courage, were far worse. Black was dubbed "The Most Hated Person on the Internet" and "Friday" was "officially the most despised video on the Internet."²¹⁶ More than three million people gave negative ratings to the video on YouTube (more accurately, there were three million negative votes; trolls like to downvote many times), and the comment field was filled with nasty, offensive, and deeply personal insults. A comment on 90sWomen.com, a blog that is meant to celebrate women, is ugly and typical: "When I first watched this it was with the volume off and I thought to myself, she's pretty. Then I turned the volume on and suddenly it was like she morphed into some sort of troll hag that needs to be killed with fire."²¹⁷ Many comments were much worse and included death and rape threats, speculation on when she would become a porn actress, and suggestions that she should have been aborted.

Georgina Marquez Kelly, Black's mother, told Paula Dodd, author of *Extreme Mean: Trolls, Bullies and Predators Online*, that her daughter's public bravery with respect to the abuse hid her emotional devastation and the legitimate terror the whole family experienced. According to Marquez, "The truth is we had horrible, horrible times, and I had to quit my job to stay with Becca around the clock in the beginning... It would be very wrong for anyone to

think that you can attack a thirteen-year-old, relentlessly insult and degrade her with little effect.”²¹⁸ Still think Envy is harmless?

Your LinkedIn Profile Seems Kind of One-Sided

Naturally, we all want to put our best faces forward, but what would happen if we let others build our online profiles? The nasty takedowns that might result stem from what we call “frenemy Envy.” While a true friend celebrates your accomplishments, a “frenemy” envies your success and seeks to undermine you for their own advancement. Word of advice: keep your friends close and your frenemies closer.

Since a LinkedIn profile is essentially an online resume, it makes sense that it presents a glowing image of oneself; after all, the subject is also the curator. This process seems too biased and artificially inflated to some, who have dreamed up ways to provide a more “balanced view” of regular people by publishing their negative traits and limitations. Early adopters of this colossally bad idea included iKarma.com and Jerk.com. In 2010, Unvarnished launched with the specific goal to provide a “realistic view of the candidate” where the subject could not remove neutral or negative comments. Founder Peter Kazanjy pointed out that safeguards were in place—even though reviews were anonymous, a registration process requiring an active email or a Facebook account was required. (An obviously fake Facebook account, such as one that was recently created or had no or very few connections, was not permitted to contribute content.) Even though an account could be “claimed” and the subject could respond to posts, he or she could not “opt out” by removing the profile. According to Kazanjy, “No [there is no delete option], because if we did that, everyone would take their profile down.”²¹⁹

The idea is terrible for a number of reasons. First, a site like LinkedIn requires a lot of upkeep to be compelling and to stay relevant—and the subject (or their paid assistant, in the case of some executive profiles) is the only person motivated to make that effort. Only a truly obsessed person would bother to actively maintain someone else’s profile, and the more content they add to it, the more likely it is their anonymity would be compromised. Since anyone with a long or successful career might reasonably have generated some ill will with someone—a disgruntled former employee or someone they passed on the career ladder—a reasonable person would probably dismiss an outlying negative, anonymous rant. Sociopaths aside, people generally want to be positive. While they might guiltily enjoy gossip, they are, for the most part, happy to recognize the accomplishments of their peers. Predictably, Unvarnished did not last long. It changed its name (to

Honestly) and tweaked the business model, but was eventually sold for parts to Monster.com.

Just because an idea is a bad one does not mean that other people won't give it another try. In 2015, Canadian entrepreneur Julia Cordray introduced Peeples, a rating system for the "people in your lives," including colleagues and former love interests. The idea was that people can set up an account for you as long as they have a valid Facebook account (or at least a non-obvious fake one) and your phone number. The Internet responded as expected and the "Yelp for people" was immediately and roundly mocked via the usual methods, including comments on the corporate social media accounts and a parody Twitter account. Cordray responded that her idea was misunderstood and mischaracterized by the media, stating on a LinkedIn post, "Peeples will not be a tool to tell other humans how horrible they are. Actually, it's the exact opposite...Peeples is a POSITIVE ONLY APP. We want to bring positivity and kindness to the world. And now I'm going to use myself as an example for what can happen when negative comments can be made about you without your approval."²²⁰ She continued to complain, presumably with no sense of self-awareness or irony, that people were anonymously posting negative content about her site without verifying the veracity of that information.

Brian Solis, a well-respected Internet commenter, wrote a critical (although reasonably so) review of the site and the subsequent reaction. Solis noticed that a list of shareholders had been removed from the site. In his words, "a curious move considering that each of the twenty individuals put money into a business that forces people (mostly involuntarily) onto a digital stage for peer-to-peer evaluation." He mentioned that he discovered a cached page where that information was still visible although he did not provide a link. He subsequently received the following note from the actual Peeples Twitter account: "@briansolis the police have your name and private info and will come knocking. You have committed cybercrimes." To which Solis responded, "@peeplesforpeople threatening someone is a crime. FYI every page you delete is still cached on the net. #peeples."²²¹ Peeples's defensiveness and knee-jerk appeal to authorities to protect them from meanies is amusing, but does not support the thesis of their business model that all commentary, both positive and negative, needs to be considered.

Online Comments: Envy without Spell Check

Envy extends beyond those we know, and the gossip tabloids that made fortunes knocking the rich, famous, and gorgeous down to size have mutated

into something even more vicious and mean-spirited online. From blogs like *Gawker* and *The Superficial* to the comment section of any website discussing people of even modest accomplishment, the envious are legion and they've brought their pitchforks.

Publications that allow anonymous comments find that “keyboard courage” leads to nasty and unpleasant discourse (these comments, although often driven by Envy, certainly can invoke Wrath as well). Many publications, such as the *Wall Street Journal*, require users to register with a “real name,” others require a Facebook login (a middle-ground tactic, since fake accounts are easy to set up), and still others have removed commenting altogether. University of Houston professor Arthur Santana studied the negative impact of anonymous comments on online news sites, stating that newspapers “have expressed frustration with rampant incivility and *ad hominem* attacks in their commenting forums,” but may also risk their own reputations by hosting and therefore tacitly endorsing the commentary.²²² Employing moderators can help to keep conversations civil, but that is an expensive proposition at a time when journalism is struggling mightily to maintain profitability. In some cases, a strong readership community can self-moderate, but that sort of intimacy simply does not exist for publications with large, diverse readerships. Michelle Shephard, author and columnist with the *Toronto Star*, agrees: “We are more engaged with our readers than ever. I barely remember the days when I started and our only feedback was a Letter to the Editor or the odd phone call.”²²³ While the extra work of responding to online comments is time-consuming, journalists generally find it helpful. Shephard adds, “There is no doubt it has made us more accountable and better journalists. There is no doubt it is much more work.”²²⁴ It turns out that the *Star* discontinued online comments in late 2015, reverting to Letters to the Editor and a curation of commentary from its social media sites. Sadly, it seems that enough of us are not mature enough to keep our Envy in check, effectively spoiling it for the rest of us who might have wished to have a thoughtful discourse or leave messages of support.

Envy and Career Trajectory

Richard Florida made a big impact on the Toronto scene when he chose the Canadian city as his home base.²²⁵ He used the data from his work as an urban theorist to decide where to live, stating: “my own view is that Toronto can position itself in the next decade as a first-tier mega-region and that would require bolstering the universities, leveraging the quality of life, and continuing to attract immigrants... I think Toronto is very, very close to

that.”²²⁶ Richard along with his wife Rana (also an author) quickly became the toast of the city. They were featured in the society pages and their home and dinner parties prominently illustrated in lifestyle magazines. This level of success rubbed some people the wrong way and provoked some nasty entries in the comments section and a few snarky newspaper articles (a *Globe and Mail* piece moaned “Can we please stop talking about Richard Florida?”).²²⁷ One of the roles that Florida undertook was a professor position at the University of Toronto with a higher profile—and higher salary—than most of the incumbent faculty.

Florida’s body of work is based on statistical analysis and urban planning. He makes some provocative conclusions on how the introduction of the Creative Class—a socioeconomic group composed of scientists and engineers, university professors, poets, and architects, as well as people in design, arts, music, and entertainment—improve the economic viability of cities. Like all serious and sophisticated academic work in the social sciences, Florida’s work attracts critics, and he does not shy away from debate either via the written word or in-person. His success, including the prominent University of Toronto position and many lucrative speaking engagements, also attracts critics from the shadows. Florida was “welcomed” to Toronto by a website entitled “Creative Class Struggle,” whose mission statement indicates opposition to his “exorbitant salary,” makes the bizarre clarification that he is “unelected” and rejects his ideas claiming that “‘Creative Class’ policies are designed to build money-making cities rather than secure livelihoods for real people. These policies celebrate a society based on inequality, in which a select group of glorified professionals is supported by an invisible army of low-wage service workers.”²²⁸ Responding to a question about the anonymous nature of the site, the FAQ clarifies, “We are a group who came together to challenge the power of the ‘creative class’ rhetoric circulating in Toronto. Our anonymity is the result of our agreement to work as a collective. The content, material, and actions described on this website are the product of collective effort, not of the work of any one individual. As a matter of practice, we intend to resist the desire for individual attribution so widespread both within and outside the academy.”²²⁹ Questionable, perhaps, but we can give them credit for leaving up the comment section, which includes this stinging comment:

Sorry ‘collective,’ but it’s apparent that petty jealousy and warmed-over collectivism are the real motivations for this website and the attack on Richard Florida. Let’s call it professional envy dressed up in neo-communist drag. Clearly, some obscure associate professors and ineffectual community

*organizers feel they don't get enough attention or remuneration so they take anonymous pot-shots at someone who does. There's a word for this in the real world: loser.*²³⁰

Or maybe they just ignored it, as the blog seems to be abandoned and the contact links now revert to WordPress.

It's likely that the person (or persons) who launched this attack against Florida was barely known to him—perhaps not at all. In a similar situation, the University of Saskatchewan has fired a tenured professor after determining that he had anonymously posted disparaging messages about fellow faculty members on RateMyProfessor.com (we will hear more about that site in the Sloth chapter). Stephen Berman was a tenured math professor who wrote positive reviews of himself and negative reviews of his colleagues that were carefully phrased to resemble the cadence of undergraduate writing. After uncovering evidence of this malfeasance, an independent arbitration panel recommended that he be fired. Colleagues were reportedly surprised as he did not seem to have an outwardly antagonistic relationship with any of them. His “colleague Envy” manifested itself only online and only anonymously. Ultimately, his Envy was damaging only to himself. Without the Internet, he might have lived out a successful teaching career in quiet resentment like in generations past.

Bill Hadley found himself a victim of another's envious online attack. He was returning to Illinois county politics from private practice by running for a vacant board seat. In the comment section of an article in the Freeport *Journal Standard*, a nasty anonymous commentator using the handle Fuboy wrote, “Hadley is a Sandusky waiting to be exposed. Check out the view he has of Empire [an elementary school] from his front door.”²³¹ The implication, referencing Jerry Sandusky, the disgraced former Penn State football coach, was that Hadley was a predatory pedophile. A more damaging accusation can hardly be imagined. Hadley spent four years and \$35,000 to discover who wrote the post—the quest required court orders for both the newspaper's and the poster's Internet Service Provider. He was successful in finding out who attacked him and at the same time a little baffled. The villain was a vague acquaintance and Hadley had no idea why he had such strong feelings about him. It is indeed chilling that the ability to leave an incendiary comment online where it can be seen by all allows petty Envy to be amplified to the degree where it can destroy someone's career.

Thank You Not So Much, Mr. Roboto

In addition to the phenomenon of social media and online commenting giving voice to our personal Envy on an individual-to-individual level, the technological revolution is creating a fundamental shift in employment that is creating a new group of the disenfranchised: the unemployed whose jobs are replaced by robots or other technology. This group envies the employed, be they human or robotic.

Jim Clifton, Chairman of research firm Gallup, reported in 2011 that “of the 7 billion people on Earth, there are 5 billion adults aged 15 and older. Of these 5 billion people, 3 billion tell [us] they work or want to work. Many of these people need a full-time formal job. The problem is that there are currently only 1.2 billion full-time, formal jobs in the world. This [represents] a potentially devastating global shortfall of about 1.8 billion good jobs. It means that global unemployment for those seeking a formal good job with a paycheck and 30+ hours of steady work approaches a staggering 50%, with another 10% wanting part-time work.”²³² This situation could become worse—much worse. A 2015 report from Bank of America and Merrill Lynch predicts “up to 35% of all workers in the UK and 47% of those in the US, including white-collar jobs, seeing their livelihoods taken away by machines”²³³

What happens to all the people who make their living as a driver or in industries that directly service car drivers—an estimated 10 million people in the United States alone? ²³⁵In fact, in twenty-nine of the fifty US states, truck driver (technically, the category is “truck, delivery, and tractor driver”) is the most common occupation.²³⁶ If these people suddenly become surplus due to self-driving cars, what will they do?

A robot that is purported to be able cook Michelin-starred quality food will hit the market in 2017. A video, posted on the *International Business Times* website, shows how the robotic arms prepare food with dexterity greater than that of a human, operating from pre-programmed instructions or via updates from smartphones. According to inventor Mark Oleynik, “whether you love food and want to explore different cuisines, or fancy saving a favourite family recipe for everyone to enjoy for years to come, the Automated Kitchen can do this. It is not just a labour saving device—it is a platform for our creativity. It can even teach us how to become better cooks.”²³⁴ Robots are also now also performing surgeries, writing sitcom episodes and providing financial services advice.

Some futurists think this is just the beginning and eventually only 10% of people will be able to find jobs. An optimist would argue that this society will be a Utopia—with robots acting on our whims and 3-D printers producing everything we need, our freedom from work will allow us to expand our minds and live blissfully. Silicon Valley venture capitalist Steve Jurvetson believes:

In the long run, 500 years from now, everyone is going to be involved in some kind of information or entertainment. Nobody on the planet in 500 years will do a physically repetitive thing for a living. There will be no farmers, there will be no people working in manufacturing. To me it is an impossibility that people would do that. People might do it for fun. You might have an organic garden in your backyard because you love it. Five hundred years from now I don't know if even 10 percent of people on the planet have a job in the sense of being paid to do something.²³⁷

Others picture a scenario where a few multi-trillionaires live like Gods while the unemployable dig through their trash for sustenance.

Gallup regularly measures gross national well-being and finds that this measure is impacted by hopefulness versus helplessness. According to Clifton, “When casualties of the jobs war give up hope of finding a job, just about everything else falls apart for them. They’re much likelier to report being in bad shape on almost all conditions of health and well-being. They have more physical pain, experience more sleeplessness, are more likely to be clinically depressed, have more anger, and need more healthcare in general. People who have been out of work for eighteen months or longer lose engagement in their network of friends, community, and families.”²³⁸ In North America, this problem is execrated by Baby Boomers who struggle with ageism when trying to find jobs while dealing with almost zero (or even negative) interest rates hurting pensions and retirement funds. At the other end of the workforce, Generation Y²³⁹ and Z struggle with increased competition for entry-level jobs from the developing world while dealing with a crushing load of unprecedented student debt.²⁴⁰

To many people, a guaranteed minimum income is the most reasonable solution to these technology-displaced workers. The rationale is that if robots and 3-D printers are able to produce goods at dramatically reduced costs and all societal needs can be met, all citizens should be able to have their basic needs taken care of with an automatic stipend, leaving them with plenty of leisure time to pursue entrepreneurial, community building, or

other activities. Proponents of the program believe that since it replaces many other social programs, including income credits, employment insurance, and welfare, along with the supporting accoutrements, it will not add a tremendous amount of additional costs. Many questions come into play here—for example, who will set the minimum threshold and what will the threshold be? Will it fund a North American or Western European middle-class lifestyle? If so, how will immigration be handled when millions of people are leaving the developing world for a comparatively luxurious lifestyle? Should the alternative minimum income be offered globally? If so, the figure must be much lower and will certainly require a massive lifestyle “haircut” for displaced former middle-class workers.

Not to mention, the theory that the Masters of the Universe who own the army of robots can be taxed enough to pay the “living wage” of the newly unemployable does not make sense according to basic economic theory. Even if the first iteration of the new economic order generates massive profits for the capital owners due to the greater cost efficiency of the robot workforce, that advantage will not last. These “excess profits” attract new entrants who will drive down profitability. The main exception to this rule is when massive investments are required to enter an industry. Apps and 3-D printers make this far more unlikely.²⁴¹

A counterpoint to this “criticism from the rich-poor divide” theory comes from futurist Ray Kurzweil, who states, “It is likely that through these technologies, the rich might obtain certain opportunities that the rest of humankind does not have access to. This, of course, would be nothing new, but I would point out that because of the ongoing exponential growth of price performance, all of these technologies quickly become so inexpensive as to become almost free.”²⁴² So Kurzweil, at least, believes there will be no need for Envy because everyone will have whatever they want.

I’ll Have What She’s Instagramming

The replacement of human workers by robots or some other technology is an important concern—not only for those who will find themselves out of work, but for billionaires concerned about mass uprising. During the Great Depression, Senator Joseph P. Kennedy saw the risk of a 25% unemployment rate represented to the elite and reportedly said that “he would have gladly given up half of everything he had, if he could have been certain of retaining the other half of his fortune under the rule of law.”²⁴³ *Capital in the Twenty-First Century*, a 2013 book by French economist Thomas Piketty, is an unusual *New York Times* bestseller.²⁴⁴ Normally, full-length

economic treatises translated into English from French do not attend the same dinner parties as *The Tipping Point* and *Tuesdays with Morrie*. However, income inequality, the subject of his book, has become an important issue for public policy and is firmly entrenched in political party platforms. As a result, many of the wealthy are deliberately reducing their public ostentatiousness to avoid drawing attention to themselves, looking obnoxious, or both.

Sometimes even generous charitable giving generates envy and criticism. For example, a clickbait link promises to lead to an article that will out “these celebrity skinflints [who] are stiffing their kids.”²⁴⁵ The outdated term “skinflint” is defined by Merriam-Webster as “a person who would save, gain, or extort money by any means: a miser.”²⁴⁶ The actual article softens the message a bit to “Gates, Sting, other celebrities plan on stiffing their kids,” while the text describes how each of the “skinflint” celebrities share the sentiment that their children should receive enough financial support to live well and pursue their dreams, but not to provide the obscene level of multi-generational wealth that has failed many rich families in the past. In fact, four of the “misers,” Bill Gates, Warren Buffet, George Lucas, and Pierre Omidyar, have signed The Giving Pledge, which dictates that they will donate most of their money to philanthropic causes upon their passing. Specifically, Gates plans to leave \$10 million to each of his children—which accounts for less than .05% of his wealth, but is certainly enough for them to do what they want in life. Remember, this is not like a \$10 million lottery win for a random person; these children already had every opportunity a life of privilege brings and will continue to have them. Would you take a business meeting with Bill Gates’s daughter? Thought so.

Speaking of Bill Gates, he and Mark Zuckerberg have a lot in common beyond being Harvard dropout billionaires. Each were raised in privilege (Bill Gates, Sr. was a corporate lawyer, Zuckerberg’s parents were a dentist and a psychiatrist) and were prodigies who benefitted from top flight education. After generating their fortunes, they funded charitable foundations with global implications. The Bill and Melinda Gates Foundation’s international goals focus on improving healthcare and reducing extreme poverty. Facebook, along with six other companies, developed Internet.org, which pledges to increase Internet access globally.²⁴⁷ Zuckerberg and his spouse Priscilla Chan pledged to give away 99% of their Facebook stock, worth \$45 billion at the time of the pledge, to their charitable foundation.²⁴⁸ In both cases, the charitable work is decided by

boards and foundations rather than governments who need to keep in mind the views of the electorate. Still, some people criticize these gifts as being arrogant (who are these billionaires to decide what is best for the people?), unfair to shareholders (selling the stock to fund charitable work will lower the share price for everyone else), and self-serving (since the foundations will be tax-exempt charities, any transfer to them will act as tax shelters for other income). You really can't please everyone.

Of course, Envy of the rich can provide a source of entertainment—consider the *The Rich Kids of Instagram*, who exhibit (literally) a refreshing change to the strategy of hiding wealth. The group, which includes Gaia Matisse, the great-great-granddaughter of the French painter; Magic Johnson's son EJ; Donald Trump's daughter Tiffany; and Andrew Warren (grandson of a fashion mogul and son of a New York real estate developer) uses social media to flaunt their carefree lives of opulence.²⁴⁹ The posts feature the ultra-wealthy young people posing with their spending money for a weekend (typically a stack of 500 Euro notes), travelling on yachts and private planes, driving Ferraris and Bentleys, and otherwise providing insights into their .0001% lifestyle. The famous-for-being-famous motif is not an entirely new phenomenon, but social media makes it easier—the portmanteau *celebutante* was coined long after Gloria Vanderbilt reached adulthood. These young people have achieved this type of fame—not only do they have a massive following on social media accounts, the *Rich Kids of Instagram* blog inspired two E! Network reality shows and a book.

Though many fans are drawn to the site out of intrigue and wealth voyeurism, the comment sections are filled with angry posts decrying the opulence, wealth, and wearied commentary about having to choose between luxurious weekend destinations. Parody accounts mock the Kids by reproducing photos with less impressive props (for example, replacing a stack of large denomination notes with one dollar bills or substituting a bus pass for Lamborghini keys).²⁵⁰ In Mexico, the behavior of this country's equivalents (especially the sons and daughters of high-ranking government officials) is monitored and shamed on social media. For example, after Andrea Benitez was denied a table at a trendy restaurant, she summoned upon the restaurateurs the wrath of Profeco, the Consumer Protection Agency overseen by her father. After the restaurant was temporarily shut down by the bureaucrats, Twitter responded with an intense campaign dubbing Benitez “#LadyProfeco,” which spurred her father's resignation.²⁵¹

Is there a way that technology can distract people from the bitterness and resentment discussed in this chapter? Perhaps in a way that builds on the status of the conventionally beautiful people who populate the most elevated stations on Instagram and YouTube. The next Sin we discuss is not necessarily an evolution from the base instincts we talked about here, but Lust has arguably driven tech innovation more than any of the others.

Lust

Remember that the Sins were first compiled in a much different time, and the church had its reasons for dictating rules about Lust. Population growth and an intact family were vital in an age with high infant mortality and few social supports outside of the church. Today, with more than 7.4 billion people on Earth, most of the developed world reproducing under the replacement rate, and birth control methods becoming safer and more effective, sex is less about propagation.

Technology has fundamentally changed our relationship with sex. It always has. From apps that turn casual sex into an on-demand service to websites that allow sex workers to be reviewed as if they were restaurants, access to and selection of sex acts is always in new territory. Meanwhile, normal questions asked by inquiring young minds about sex and sexuality are often now answered by hard-core, high-definition pornography. Sexual proclivities that would have seemed downright strange a few short decades ago—for example, dressing up as an animal before lovemaking, vacuum sealing your partner to the floor using latex, or drawings of equine sexuality inspired by the children’s show *My Little Pony* (we will discuss “Bronies” later in the chapter)—today have devoted online communities whose members mutually reassure one another that their interests are natural and healthy.

Looking ahead, the future promises new experiences and machinery that will, depending on your point of view, continue to transform, enhance, or alter human sexuality.

If you think pornography's role is just the seedy underbelly of the Internet, think again. Pornography has played a key role in the development of familiar and widely-used technology. People who remember VHS and Beta sections in their video store (for brevity, let's ignore laserdiscs for now) might recall that by most technical standards including visual and audio quality, Beta was the superior format, yet it lost out to the inferior VHS model. How does porn fit in? Take a moment to absorb this fact: one of the key reasons why this happened is that "Sony reportedly wouldn't let pornographic content be put on Betamax tapes, while JVC and the VHS consortium had no such qualms."^{252 253} That's right—we all got stuck with inferior technology because of porn.

More recently, the pornography business has been the driver behind many other key technological innovations. Do you like to shop online? Thank porn for online payment systems. Ever watch movies or TV on Netflix or Hulu, or use messaging on social media platforms? Again, thank porn for streaming video and live chat. I'll bet you like your Internet to be nice and fast—guess you who have to thank for traffic optimization? Bruce Arnold, principal of research firm Caslon Analytics, attributes this phenomenon to porn's "ecosystem in which participants are willing—indeed forced—to experiment, and where experimentation isn't hobbled by common sense, good taste, or bureaucracy."²⁵⁴ This wouldn't be a book about sin if we didn't also mention that the porn industry was the driver of many negative innovations, including malware, spam, domain-name hijackers, pop-ups, and their even more loathsome cousin, pop-unders (which appear under the active window and take more effort to find and close).

Massive Size of Pornography Industry

Wait, it's how big? Simon Louis Lajeunesse, a University of Montreal psychology professor, wanted to compare the behaviour of men who view sexually explicit material online versus those who do not. He actually had to redesign the study when he couldn't find any (any!) twenty-something males who had *not* viewed it to serve as the control group.²⁵⁵ From a revenue point of view, the pornography industry is massive, estimated to generate at least \$97 billion worldwide by 2015.²⁵⁶ This figure may sound outlandishly

large considering the seemingly endless supply of material that can be accessed for free on various streaming sites. But some do pay—and not just people. Researchers at Duke Medical Center determined that male rhesus macaques (monkeys again!) are willing to pay (with fruit juice) to view photos of female genitalia and perineae.²⁵⁷ The largest sites, however, use complicated algorithms to evaluate the peccadillos of consumers and target ads focussed on racier versions of the type of content they enjoy. This process is intended to convert them into paying customers. Experts believe that 10% will eventually pay, and since the total viewership is so vast, that is enough to generate massive revenue. Journalist Martin Daubney who hosted the documentary *Porn on the Brain* explains: “Did you honestly think the porn barons give you freebies out of the goodness of their hearts? ‘Personalised porn’ is the future: free porn as a gateway to paid, real-life webcam or escort services, [high-definition] quality porn, and stuff too racy even for mainstream broadcast.”²⁵⁸

Where is it? Pornography viewing is coming out of the basement, and can now be accessed anywhere. According to a Jupiter Research study, 136 billion porn videos would be watched on smartphones in 2015, and that number will rise by 55% over the next five years, mostly because more content is now optimized for mobile devices and stronger Wi-Fi and 4G technology are becoming more widely available in developing markets.²⁵⁹

Why is it so big? There have been a lot of academic studies on the impact of pornography on the brain, and especially on the adolescent brain. Some psychological studies indicate that the exposure to pornography has inflicted erectile dysfunction on young men at a much higher rate than ever before (although other scientists point to the greater use of antidepressant medication as the real culprit).²⁶⁰ Since most adolescents who have access to the Internet (and the ability to click on a button that “ensures” they are eighteen or older) have witnessed pornography, their perception of sex is misaligned, according to these studies. With unlimited access to all the sexual content they want to view online, the effort (and potential rejection) of real-life sexual pursuit may seem not worth it. The result: many young people, particularly males, are forgoing the early, awkward attempts at romance so important to building social skills and healthy relationships based on more than just sex. So how does this relate to the size of the porn industry? Think of it this way: once the pattern has formed in adolescence—get a quick and easy “hit” of sexual satisfaction using pornography—you’ve got a potential lifelong consumer of pornography.

But do you have an addiction? Some scientists believe that pornography addiction does exist and, like other forms of addiction, causes changes to neural networks and brain chemistry. Pay attention here, we're about to get scientific. Dr. Eric Nestler of Friedman Brain Institute at the Mount Sinai Medical Center attributes addiction to a flaw in the mesolimbic reward centres of the brain. He explains that brain pathways “mediate, at least in part, the acute positive emotional effects of natural rewards, such as food, sex and social interactions. The same regions have also been implicated in the so-called ‘natural addictions’ (that is, compulsive consumption for natural rewards) such as pathological overeating, pathological gambling and sexual addictions.”²⁶¹ The scientists in this camp believe that just like a cocaine addict needs greater and more frequent doses of the drug to produce the desired high, a porn addict requires greater access to content and it needs to get more and more graphic to bring them to satisfaction.

Some academics are not convinced about the legitimacy of pornography addiction—or at least, believe that it manifests in different ways than other addictions. Dr. Nicole Prause, who earned her PhD at Indiana University in conjunction with The Kinsey Institute for Research in Sex, Gender, and Reproduction, led a team that studied this very issue. They looked at how the brains of porn addicts responded to their “drug” compared to the brain responses of addicts to other known addictive substances. A group of patients who reported “excessive” viewing of visual sexual stimuli were shown material including sexual images, and their responses were recorded. So what did the researchers discover? The responses to the pornographic material as measured by late positive potential (how the brain responds to a specific sensory, cognitive, or motor event) differed from the pattern shown by substance abuse addicts under similar conditions.²⁶² In other words, this study found that porn does not affect brain response in the same way as other addicting substances. Jay Clarkson and Shana Kopaczewski of Indiana State University dispute the addiction research on ethical and censorship grounds. In their article “Pornography Addiction and the Medicalization of Free Speech,” they argue that using the addiction narrative entails a cultural bias, since people can relate to how dangerous other types of addiction can be. They state: “the emerging narrative frames pornography use as a biological danger to those who use it in order to maintain traditional moralist fears about the effects of pornography while circumventing more complicated analyses of the role of culture, the importance of free speech, or the limitations of media effects research.”²⁶³

Beyond “personal use” of pornography, does viewing it increase the odds of offenses versus other people? Scientists argue both sides. Clinical psychologists Michael Bourke, PhD, and Andres Hernandez, PsyD, wrote a controversial paper indicating that men charged with Internet child pornography offenses are highly likely to also have abused children in real life. Their study of 155 offenders found that 85% of them had molested at least one child, with an average of 13.5 victims per abuser.²⁶⁴ Another group of studies provides different (but not mutually exclusive) conclusions that the availability of child pornography actually decreased real-life child abuse. Dr. Milton Diamond of the University of Hawaii found that when child pornography was decriminalized in the Czech Republic, child sexual abuse decreased—these findings mirrored those in Japan and Denmark. Diamond’s findings support the theory that potential sexual offenders use child pornography as a substitute for sex crimes against children.²⁶⁵ If this finding is true, it sets up difficult policy positions for governments as most citizens are unlikely to support child porn decriminalization even if the material was produced without actual children being involved.

Erotica Cornucopia

Rule 34 contends that pornography or sexually related material exists for any conceivable subject. Sometimes, the phrase “no exceptions” is added; another version contends “If not, now there is,” implying that in the time since you’ve checked, qualifying erotica has been added. Technology commentator Cory Doctorow writes in his book *Context*, “Rule 34 can be thought of as a kind of indictment of the Web as a cesspit of freaks, geeks, and weirdoes, but seen through the lens of cosmopolitanism,” which “bespeaks a certain sophistication—a gourmet approach to life.”²⁶⁶ Rule 34 is the most important reason that you should have tight safety settings on your search engines—a sexual image of the Muppets is hard to “unsee.” This advice is especially valuable for parents whose children are fans of *My Little Pony*. “Bronies” are a subculture of adult men who have a dedicated (and complicated) relationship with a show designed for children. Many critics charge that the 2013 movie *My Little Pony: Equestria Girls*, where the eponymous pony characters were reimagined as sexualized teenaged girls, was created in no small part to appeal to the Bronies. Journalist Amanda Marcotte aptly notes, “If there was any danger of the Brony trend dying off any time soon, turning the Ponies into imitation sexy anime characters delayed that potential decline.”²⁶⁷

Ogi Ogas and Sai Gaddam, during the research phase for their book *A Billion Wicked Thoughts*, conducted a deep quantitative study into porn viewing habits (some of the tabulation work was outsourced to freelancers that they found through Mechanical Turk—presumably one of their more

eBooks can indeed be lucrative, although Amazon CEO Jeff Bezos didn't get to be a billionaire by writing a lot of cheques. During 2015, Amazon changed the algorithm for how online erotica authors were compensated. Instead of compensating by number of downloads, payments became based on the number of pages read, at a rate of six tenths of a cent (\$0.006) per page. Naturally, this change was not welcomed by the authors and some responded by removing their titles from the Kindle platform. Author Lexie Syrah explains, "The main reason is the fact that they're only paying us half of a penny per page read. They're forcing us, if we remain on their system, to pad our erotica with trash pages because we cannot afford to not do that on the pay scale that they have given us... People read erotica for a variety of reasons, but most people read erotica because they want to feel excited. They want to have a fantasy. And so they don't want to read 200 pages about the colour of a bed or the setting of a bedroom. They want the down and dirty. And they want it right now."²⁷¹

interesting gigs). One of the studies looked at the site Dogpile (which compiles results from engines such as Google and Yahoo!) to evaluate the most common search terms people used for pornography. For posterity, the top three were "Youth," "Gay," and "MILFs." Further down the list, "Grandpa" edges out "Cheerleader" for seventy-eighth place.²⁶⁸ Whatever floats your boat.

Content familiarity accounts for the fact that parody films remain one of the still profitable genres of pornography; *Batman XXX: A Porn Parody*, which cost more than \$100,000—a staggeringly high amount for the genre—became the bestselling adult video of 2010 and led to many others.²⁶⁹ Owing to its popularity and market impact, that same year the AVN awards—the industry's version of the Oscars—introduced a "Best Parody Film" category. Entertainment lawyer David Ginsburg, who is also executive director of the UCLA School of Law's entertainment, media and intellectual property law program advises that "Mainstream porn, from a copyright protection, from a First Amendment protection [standpoint], is essentially the same as any other form of written expression... The rules of parody apply as equally to porn as they do to any other form of parody, like *Saturday Night Live* or *Mad Magazine*."²⁷⁰

Erotic fiction, like all types of pornography, risks becoming too

familiar or repetitive, and in order to generate the same effect, users need to escalate the intensity of the content they consume. One of the ways to achieve this goal is to increase the taboo level of the content. For many readers (and this group is over-represented by females), the answer is to make the romance between stepfamily members. Penelope Ward, the author of *Stepbrother Dearest*, saw her tale reach number three on the *New York Times* Bestseller list during the spring of 2015. Yes, the prefix “step” is important as sex between blood relatives is apparently the line that the main eBook publishers draw. According to Colleen Masters, author of *Stepbrother Billionaire*, “You definitely have to get creative, when it comes to toeing the no-incest line... My editors usually let me have at a story on my own, and rein me in later if they think something’s going to become an issue. But I find that having to take those rules into account actually gets my creativity fired up. Any time you have to work around obstructions of form, style, or content, you’re going to come up with new ideas that never would have occurred to you otherwise.”²⁷² Well, we can’t blame technology for this particular subject matter. Full-blood incest existed in mainstream literature long before the Internet—*Flowers in the Attic* was targeted at young adults in the 1980’s, the hero Siegfried in Wagner’s *Der Ring des Nibelungen* was the son of twins, and the Sophocles play *Oedipus the King*... well, you know. The Internet, however, can intensify this type of material in both taboo level and quantity; you can’t tell that the commuter on the other side of the subway isn’t reading Gladwell, and whatever niche you are looking for, there is plenty of material.

How weird does it get? Well, crypto-zoological erotica is much more popular than you might think. Virginia Wade (another nom de plume—we are not talking about the septuagenarian British tennis player) is one of the leading authors in the field, generating up to \$30,000 per month for her work, which includes the twelve-volume *Cum for Bigfoot* series. Wade, who sells via channels such as Kindle Direct, still cranks out Bigfoot-themed erotica as part of a family enterprise; she reports: “my dad, who’s an English instructor, was my editor and my mom did the German translations.”²⁷³ Amazon is in an awkward position with this sort of literature. On one hand it is immensely profitable—eBooks have almost no distribution costs and marketing is almost entirely word of mouth. On the other, it needs to ensure that the content is legal. Sometimes, this question takes on an existential nature. Amazon deletes some titles which it believes violates protocol, such as incest, bestiality, or underage protagonists (recall that Romeo and Juliet were young teenagers). Does a Sasquatch paramour equal bestiality? Or does the

fact that it is a fantasy creature give the authors some grey area? By the way, Wade's oeuvre was temporarily deleted from Amazon until she rebranded it as the more tasteful *Moan for Bigfoot*.

Tinder and Power Balance

Justin Garcia, a research scientist at Indiana University's Kinsey Institute for Research in Sex, Gender, and Reproduction, states: "There have been two major transitions in heterosexual mating in the last four million years. The first was around 10,000 to 15,000 years ago, in the agricultural revolution, when we became less migratory and more settled, leading to the establishment of marriage as a cultural contract. And the second major transition is with the rise of the Internet."²⁷⁴ While people used to meet because of geographic proximity or via churches, family, or friends, apps like Tinder make the Internet the most powerful force in dating.

For many species in the Animal Kingdom, the alpha male is the only one allowed to mate and procreate, and at times this has been the case with humanity. One of the purposes of organized religion is to reinforce the importance of monogamy within a marriage. The Internet has the potential to reverse this trend, as right-swiping Alphas find that Tinder and its ilk offers them seemingly endless supplies of willing mates. David Buss, a professor of psychology at the University of Texas at Austin who specializes in the evolution of human sexuality, explains:

*Apps like Tinder and OkCupid give people the impression that there are thousands or millions of potential mates out there... One dimension of this is the impact it has on men's psychology. When there is a surplus of women, or a perceived surplus of women, the whole mating system tends to shift towards short-term dating. Marriages become unstable. Divorces increase. Men don't have to commit, so they pursue a short-term mating strategy. Men are making that shift, and women are forced to go along with it in order to mate at all.*²⁷⁵

For all males, the thrill of the hunt is magnified by the ease with which they can send out multiple texts asking for hook-ups, bolstered by the same "keyboard courage" that we encountered in the Envy chapter. Investing a whole evening in a dinner and a movie seems like an unwieldy and quaint alternative. So what are we left with? If "dates" have become pure hook-ups for sex without even a perfunctory pre-sex activity, lust has surely driven over romance and left it in the dust. And we have the Internet to "thank" for that.

Lust and Crime

Hunter Moore's misdeeds seep across multiple Sins, but it's Lust that gave his particular brand of evil a foothold. His website "IsAnybodyUp.com" posted compromising pictures of naked people (usually women) without their permission, accompanied by identifying information including their names and screenshots of their social media sites. He would then attempt to extort money from his victims in exchange for taking the pictures down. His source material was either obtained from former boyfriends or extracted through diabolical means of manipulation and extortion. Snapchat, an application that allows users to share images that are explicitly short-lived (they disappeared shortly after they were sent) actually turned out to be a significant source of these photos. Some users felt emboldened by the technology such that they were more likely to send intimate photos only to have them captured through screenshots or other means. Moore, who has been dubbed "The Most Hated Man on the Internet" by *Rolling Stone*, mocked his victims and bragged about his cocaine use and upcoming reality show (which never materialized). Always a gentleman, he once responded to a defamation lawsuit notice from Brandi Passante, a star of A&E's reality show *Storage Wars*, with a picture of his genitalia.²⁷⁶ He briefly enjoyed his infamy and wealth—the site at its zenith was generating at least \$10,000 (some reports are as high as \$30,000) in advertising revenue per month from its 30 million visitors.²⁷⁷ The high life didn't last. In 2015, he was sentenced to thirty months in prison on charges of computer hacking and identity theft.²⁷⁸ No stranger to the legal process, Moore had a prior arrest for assault related to a bar fracas, and had received a judgement ordering him to pay \$250,000 in damages to an anti-bullying activist.²⁷⁹ While it may be a small comfort to the victims of the site—many of whom had to quit jobs or move, some reportedly even committing suicide—governments, including California's,²⁸⁰ have responded to the loathsome practices of sites like Hunter's by enacting anti-revenge-porn legislation. Penalties for a first offense include a \$1000 fine and up to six months in jail.²⁸¹

We discussed the online manifestation of organized crime in greater detail in the Greed chapter, but as a reprise, Lust plays a contributing role within identity theft by giving criminals a target group to exploit. You've probably seen a CAPTCHA²⁸²—a type of challenge-response test used in computing to determine whether or not the user is human. CAPTCHAs are commonly used in online purchasing to ensure that bots cannot quickly set up multiple profiles or buy all the Taylor Swift tickets

the moment they are offered for sale. However, criminals have found a way to use CAPTCHAs as an entry point for identity theft. They email the puzzles to people who are trying to access online pornography, under the guise of proving that they are over eighteen. Marc Goodman, in *Future Crimes*, sums up the transactions nicely: “a win-win situation, free high-quality porn in exchange for unwitting crowdsourced participation in a phishing scam.”²⁸³

In 2015, Ashley Madison, an online dating service ostensibly offering no-strings-attached liaisons between married people, was hacked. The hackers obtained the identities and compromising emails of 32 million of the site’s members.²⁸⁴ As you might expect, the majority of Ashley Madison’s users highly value their anonymity, so this led to a new round of Greed as the extortionists contacted people on the list and threatened to share that fact with their spouses and other contacts unless they received hush money. Since the criminals could set up fake Ashley Madison accounts in anyone’s name, they could also extort people who did not even use the service. Also, many members had paid \$19 to have their accounts removed—a service that obviously wasn’t actually provided by the company, as the supposedly “scrubbed data” was still available to the hackers. Incidentally, the hack also revealed that a large percentage of the “female members” were fake accounts created by the company to pur activity from men.²⁸⁵ In this story, it is hard to find a true “good guy.”

As for the legality of online pornography, there are two main issues—piracy and illegal content. The largest tube sites, including Pornhub, attract more than 60 million viewers daily. Its parent company, MindGeek, is private and does not release financial information, but based on advertising impressions it is worth tens if not hundreds of millions of dollars. In 2015, the company introduced a \$9.99 monthly subscription fee that they claim will make it the “Netflix of porn.” Just like YouTube, however, it succeeds by monetizing the intellectual property of others (other tube sites already operate on a “freemium” model). While some of the videos uploaded to the tube sites are amateur productions where the owners actually have the rights to the material, this is a small (and usually less appealing) minority. The vast majority of material is pirated, copyrighted material that is meant to be sold or rented with the proceeds going to the film producers.

The tube sites are taking advantage of a loophole in the Digital Millennium Copyright Act which offers a sort of “safe harbour” provision. Specifically, the sites cannot be held criminally liable for infringing on copyright as

long as they remove material when they receive a request to do so. This situation puts the onus on the copyright holders—whose margins are already being squeezed—to police the tube sites, which add hundreds of new videos every day. According to Kathee Brewer, an editor at *Adult Video News*, the porn industry’s *Wall Street Journal*, “the tubes are making money off the studios’ investment of time and money, while the studios are forced to spend ever larger chunks of change to police the tubes and send endless takedown notices.”²⁸⁶ There have been some successful lawsuits, notably by Pink Visual, a company who aggressively protects its intellectual property through litigation as well as technological solutions such as digital fingerprinting.²⁸⁷ Even so, all of Pink Visual’s “victories” have come with covenants that prevent either side from releasing details of the settlement.

While the tube sites plaintively but implausibly claim that they have *no idea* that 99.99% of the content they host is pirated, at least the people who upload the material cannot deny that they are violating copyright. Film producers have tried to prosecute these people. Producers of the *Batman XXX* film that we discussed earlier went this route. In 2010, lawyers sued 7,098 people who allegedly uploaded producer Alex Braun’s objet d’art. After a vulgar dismissal of his adversaries we can’t print here, Braun continued, “People don’t realize that when you pirate a movie it hurts all of the people who work very hard to get it produced—from the cast to the production assistants to the makeup artists. These are people who live paycheck to paycheck, and with *Batman XXX*, that was a film I financed myself.”²⁸⁸ The pirates found an ally in the Electronic Frontier Foundation, whose legal director Cindy Cohn stated that “if you lump a bunch of people together, it’s harder for each individual to have their case heard and evaluated on the merits.”²⁸⁹ West Virginia United States District Court Judge John Preston Bailey agreed with Cohn, dismissing all but two of the cases, citing that the cases were improperly joined and most of the relevant IP addresses originated outside of the state.

Another issue is that obscenity laws vary greatly by region and culture. Lawrence Lessig and Paul Resnick write in *The Michigan Law Review*, “What constitutes ‘obscene’ speech is permitted in Holland; what constitutes porn in Japan is child porn in the United States; what is ‘harmful to minors’ in Bavaria is Disney in New York.”²⁹⁰ For example, erotica in Japan is modest in some aspects—male genitalia is blurred or pixelated—but edgier with respect to content such as bondage and tentacle porn. *Mad Men* fans will remember Peggy striding into her new MacLaren office clutching

a copy of *The Dream of the Fisherman's Wife*, a famous Japanese painting of a woman participating in an orgy with octopuses that she liberated from Bert Cooper's office.²⁹¹ Before the Internet, it was relatively easy to enforce local obscenity rules—possession of physical material and misuse of a postal system would be clearly determinable. Now that material can be instantly shared digitally, ownership is harder to detect and prove.

Fantasy vs. Reality: There are two schools of thought regarding whether pornography incites viewers to act on illegal impulses. As mentioned earlier, some studies suggest viewing pornography involving rape or children (or adults portraying children), for example, could provide a safe release for someone with deviant impulses. Others suggest that viewing such material might introduce someone to concepts they had no idea existed, normalize them, or advance the impulses, making the person more likely to offend in real life. In addition, the Internet makes it easier to form online communities with like-minded people who could encourage each other or help each other to internally normalize the desires. A study led by Brigham Young University titled *Generation XXX: Pornography Acceptance and Use Among Emerging Adults* found a slight correlation between porn viewing and risky sexual behaviour plus substance use, but at the same time outlined some of the difficulties in academic research in this area. Specifically, most of the subjects were college students (and this is the case for much psychological research: first year psychology students overwhelmingly speak for all of us), inconsistent measurement of viewing rates made it difficult to develop longitudinal comparisons, and questions about acceptance need to be more concise (for example, to capture the attitudes of people who believe that some access to this material is fine, but it becomes a problem if viewing becomes excessive).²⁹² In addition, like all self-reported information about activity that a subject might find embarrassing, underreporting is rampant.

Lust in the Future

Futurists think a lot about sex—trust me, I've been to conferences with these people. The future of erotic material will incorporate technology in a more immersive manner. Consumers will interact with their lustful fantasies in a more intense and personal way. Biologic responses and brainwaves can be monitored to determine levels of arousal and adjust the action in a manner that optimizes those levels. Haptic technology will allow the user to physically feel sensations. Teledildonics (sex toys that can be controlled remotely) will allow people in different locations to share erotic experiences.

Meanwhile, thanks to the anonymity of online ordering, it's possible to have a bizarrely sophisticated full-scale sex doll discreetly delivered to your house. Considered the Cadillac of this category, the RealDoll has a polyvinyl chloride skeleton with steel joints and silicone flesh that can be posed in various positions and dressed to your specific tastes. The dolls, which cost more than \$6000, can be customized to the purchaser's preferences and are designed to overcome the Uncanny Valley (a hypothesis in the field of aesthetics that describes the unsettling situation where a non-human being, robot, puppet, etc., has features that resemble but do not exactly look and move like natural beings, producing a creepy effect).

Shane Saunderson is a Toronto consultant and futurist who researches (and writes music) about love and robots. He challenges "anyone who finds the idea of having sex with a machine 'ignoble' and 'disgusting,' it only takes a brief look at the multi-billion dollar global vibrator industry to highlight that we, as a society, seem to have no qualms about using machines for gratification."²⁹³ Robot fetishist "Davecat" would probably agree with Saunderson. He is a forty-something American man who actually married a RealDoll named "Sidore Kuroneko." He describes himself as a technosexual and an advocate for synthetic love. He described his romantic philosophy in an interview with *The Atlantic*:

I'm still quite attracted to organic women, at least visually. But just because someone's attractive doesn't mean they have a mindset or a personality that's compatible with my own. I figure that instead of chasing after an ideal person who either doesn't exist in the first place, or is already with someone else, why not buy a Doll? I don't gamble, and I'm not keen on taking emotional chances.²⁹⁴

Because Sidore is not sentient and cannot communicate, it is unclear what she thinks of her husband's open affair with his mistress, Elena Vostrikova. It may not surprise you that Elena is also a RealDoll.

David Levy is one of the leading experts on human-robot sexual relationships. He writes in great detail about the societal, financial, psychological, and even educational impacts of robots designed to be sexual partners of humans. In his book *Love and Sex with Robots: The Evolution of Human-Robot Relationships*, he describes some of the benefits that sex androids could provide:

For those who lose a spouse or a long-term partner whether to illness, death or as one of the casualties of a broken relationship, robots could provide the answer. As one ages it becomes clear that maximal sexual intimacy sometimes

*takes a very long time to evolve—years, even—and that it redefines itself along the evolution of a loving relationship. Robots will be able to achieve this evolutionary process more quickly than humans, by retaining all the memories of living with their human other, analyzing the relationship characteristics exhibited by their human other, and by themselves studying huge databases of relationships and how they are affected by different behaviors then turning their own behavior to the needs of their human mate. Humans often do not know what they really want or need, so intuitive robot sex partners are a real requirement, able to discern whether their owner (or human partner as some robot-love fans would prefer) really wants sex or would prefer a nice glass of wine or walk in the park.*²⁹⁵

Some academics, on the other hand, believe that sex robots represent a serious societal concern as their very existence objectifies sex partners as one is literally having sex with a non-human object. And since the overwhelming majority of these robots are produced in the shape of women for the sexual gratification of men, gender politics also plays an important role. Cognitive scientist Dr. Erik Billing and Dr. Kathleen Richardson, a robot anthropologist and senior research fellow in the ethics of robotics at England's De Montfort University, lay out their arguments on the Campaign Against Sex Robots website. According to Richardson: "over the last decades, an increasing effort from both academia and industry has gone into the development of sex robots—that is, machines in the form of women or children for use as sex objects, substitutes for human partners or prostitutes."²⁹⁶ Her goal is not to extend protection rights or personhood to the robots; the campaign's website summarizes its position as follows:

*We are not proposing to extend rights to robots. We do not see robots as conscious entities... We propose instead that robots are a product of human consciousness and creativity and human power relationships are reflected in the production, design and proposed uses of these robots. As a result, we oppose any efforts to develop robots that will contribute to gender inequalities in society.*²⁹⁷

So far we've described physical sex that is enhanced by technology, while the participants' bodies remained unchanged. The next step is to incorporate virtual reality to change or enhance the body of either partner (or partners). Futurist Ray Kurzweil uses hypothetical conversations as a literary device in his innovative non-fiction book *The Singularity is Near*. "Participants" in these conversations include the author, people from the future, and historical figures such as Sigmund Freud. One of these passages does a good job of explaining technology-enhanced virtual sex:

*You are using your virtual body which is simulated. Nanobots in and around your nervous system generate the appropriate encoded signals for all of your senses: visual, auditory, tactile of course, even olfactory. From the perspective of your brain, it's real because the signals are as real as if your senses were producing them from real experiences. The simulation in virtual reality would generally follow the laws of physics, although that would depend on the environment you selected. If you go there with another person or persons, then these other intelligences, whether of people with biological bodies or otherwise, would also have bodies in this virtual environment. Your body in virtual reality does not need to match your body in real reality. In fact, the body you chose for yourself in the virtual environment may be different from the body that your partner chooses for you at the same time. The computers generating the virtual environment, virtual bodies, and associated nerve signals would cooperate so that your actions affect the virtual experience of the others and vice versa.*²⁹⁸

Of course, all of this raises ethical and legal concerns. The iconic photo of Farrah Fawcett in the red bathing suit may have helped a lot of 1970s teenagers through adolescent longings, but would it be fair to the actress to scan her image and superimpose it as a skin on a virtual model in an online or augmented reality situation? What about a non-celebrity? What about a version of a person slightly altered to be plausibly different, but still close enough to fulfill the users' fantasy?²⁹⁹ What if the subject uploaded to the fantasy is a child or an animal?

While it is fair to say that technology will continue to impact all of the Sins, Lust (or at least sexual expression—perhaps the Sin label will wear off altogether) has robotics, virtual reality, and the impact of cybernetics and biology on its team. Social media will continue to impact Pride and Envy, but probably using the same methods as it does today. Sex and technology, on the other hand, will continue to drive each other in interesting and unusual ways.

Sloth

Laziness moves far beyond the simple avoidance of work. Today, online concierges do everything from organizing family schedules to creating vacation videos, vastly reducing the effort required for what was until recently considered intimate responsibility. While the phenomenon of outsourcing to technology can be rationalized by the increase of dual-income families and overall time starvation, if an app reads a bedtime story to your children, laziness is a more likely culprit. Meanwhile, “improvements” to the Internet make it possible to be lazy even while doing activities that don’t require you to leave your chair. Laziness means clicking on the first result from your search, and accepting at face value the content of Wikipedia articles. Our opinions then take the form of *txtspk* (text speak), which dribbles into business correspondence, much to the chagrin of Baby Boomers who have lived with the anguish of actually spelling the entire word “your,” and when finding something funny had to go to the monumental effort of actually laughing out loud. Actually, we get *txtspk* if we’re lucky; becoming fluent in emoji is more difficult than it sounds. Easily remembered URLs used to be incredibly valuable, back when people had to type them directly into their browser—very quickly after the Web entered widespread use, every word in the OED followed by dot-com was taken. Now, people rarely type in a web domain;

either they search for what they are looking for by keyword, are guided by auto-fill, or click on a link in a webpage, post, tweet, or email. Google doesn't even require us to type in an entire search term since the first few keystrokes are often enough.

Most Generation Xers can recall the phone numbers (we didn't have to add "home" as a prefix) of our high school friends. For example, the last four numbers for, says, Doug—5652—were so close together on a push-button (we had to clarify between touch-tone and rotaries at the time) phone that we would often dial too quickly and annoy the person with an adjacent number. "The kids today" don't bother to actually memorize anyone's number—all they need to do is tap the person's name on their smartphone. They are often completely cut off when their phone dies, is stolen, or gets too wet, generating a plaintive plea for others to text contact information so that they can rebuild their contact list.

People who traditionally operated by observing natural conditions (such as sea patterns, ice formations, wind, and the stars) lose their ability to do so when they come to rely on technology. For example, the centuries-long traditional knowledge used by Pacific Islanders to navigate based on cloud and wave formations as well as other clues, such as bird flight patterns. Anthropologists report that isolated tribes living on India's Andaman and Nicobar Islands were spared from greater destruction from the 2005 tsunami by heading to higher ground after recognizing signs that resonated with warnings about previous disasters that had been passed down through oral tradition.³⁰⁰ If these natural skills are eroded by GPS and satellite phones,³⁰¹ they are lost forever—particularly dangerous when batteries die, satellite errors occur, or equipment gets damaged by salt or water. To a much smaller degree, drivers (and hikers, although they are as a rule, not slothful) equipped with navigation software lose their ability to read maps or infer correct routes on their own.

Hey Hey, Ho Ho, Slacktivism...brb

Sloth manifests in "slacktivism"—a portmanteau of *slacker* and *activism*—which allows people to feel like they have "made a difference" simply by clicking on a link. The banal act of showing support for demonstrators who are facing live ammunition and tear gas by generously clicking your support creates the illusion of saving the world. These slacktivists, while feeling like they have accomplished something, are actually behaving counterproductively. The more time they spend online, the less time there is available to actually do something that makes a difference.

Perhaps the most egregious example of this phenomenon is the 100 million views and 22,000 people who clicked their support for Kony 2012. In the primary video, Invisible Children co-founder Jason Russell tells his young son how the world needs to rise up and depose Ugandan warlord Joseph Kony. The delivered lecture is pedantic to the young boy and full-on condescending to adult viewers. Still, it was oddly effective and convinced many young people to demand that their government send soldiers to a distant land to capture a local strongman (sort of a Vietnam protest in Bizarro World). In addition, supporters of the Kony movement engaged in “tweet bombing,” a tactic that shames people (usually celebrities) with influential Twitter presences to add their endorsement. Not only is doing so manipulative, it is also lazy. Many celebrities lend their names and support to social movements and charities, but do so after due consideration. Rather than contacting these people through normal channels with a compelling message, tweet bombing puts the target on the spot by giving them an opt-out ultimatum. Xení Jardin, a technology journalist who had a significant, but not Bieber-like, Twitter following at the time (around 57,000 followers) was specifically targeted by hateful hacktivists when she pushed back at being spammed with the demands for her support. A sample attack from a person trying to bring justice to the world tweeted, “@xeni too bad you’re too self-concerned to help thousands in Africa suffering the worst hunger crisis in 60 years. I hope you die.thanksbai.”³⁰² The account, @ForHumanAdvance, is no longer active.

Some observers were supportive of the mission. Anneke Van Woudenberg, deputy director of the Africa Division of Human Rights Watch, commented: “We’ve spent years investigating the horrors perpetrated by the [Lord’s Resistance Army] in central Africa—Uganda, Democratic Republic of Congo, Central African Republic (CAR), and South Sudan. We gathered evidence at massacre sites—wooden clubs covered in dried blood, rubber strips from bicycle tires used to tie up the victims, and freshly dug graves—and spoke to hundreds of boys and girls forced to fight for his army or held captive as sex slaves. And we’re elated that #stopKony is a trending topic on Twitter—if anyone deserves global notoriety it’s Kony.”³⁰³ Matthew Green, author of *The Wizard of the Nile: The Hunt for Africa’s Most Wanted*, wrote in the *Financial Times* that the #stopKony movement “achieved more with their 30-minute video than battalions of diplomats, NGO workers and journalists have since the conflict began 26 years ago.”³⁰⁴

Critics, however, correctly pointed out that African politics is complicated, and even if a foreign-led attack sought to oust Kony (to do so they would

almost certainly have to blast through his bodyguard army which included child soldiers), it is not as if a gentle democratic leader would take his place. We would most likely see another strongman with a different violent philosophy whose reign would begin with violent retribution against his predecessor's followers. According to Jeremi Suri, author of *Liberty's Surest Guardian: American Nation-Building from the Founders to Obama*, "The video accurately, I think, displays the evils of this man... But it underplays the difficult choices involved in trying to do something about it."³⁰⁵ Brian Dunning, author of *Skeptoid: Critical Analysis of Pop Phenomena*, stated in his Skeptoid podcast that the Kony 2012 campaign was a good illustration of how slacktivism can be exploitative. He points out that the money raised was used to make another movie about stopping Kony rather than actually stopping Kony.³⁰⁶

I'm not a Doctor, But I Play One on Snapchat

In *The Glass Cage: Automation and Us*, technology author Nicholas Carr identifies cases where overuse of, or over-reliance on, technology puts patients' lives in danger. Technology-aided medical diagnosis can make doctors more efficient and may lower overall costs, but like all tools, it needs to be complemented with human expertise and attention. Automation bias occurs when doctors rely too closely on prompts from diagnostic equipment. A City University London study showed that while computer-aided cancer detection improved the reliability in easier cases, it resulted in false positives and missed diagnoses for more complicated cases.³⁰⁷ Technology relies on humans to use it correctly. For example, medical software programs send many alerts of possible dangers, such as prescription drugs that might negatively interact with each other or notifications that a patient's diagnostic reading goes beyond an acceptable parameter. While these seem like a feature and not a bug, physicians develop "alert fatigue" and start to ignore the messages when they arrive too frequently—even when a vitally important alert appears.³⁰⁸

Similarly, people who avoid the doctor altogether and self-diagnose through online sources run into similar dangers. Even well-respected and organized sites like WebMD can lead people astray if they misread symptoms or base conclusions on insufficient information. Even worse are people who avoid the medical system altogether and collect information from echo chambers who pitch natural or homemade remedies or fuel superstitions or vaccination fears.

From Mr. Chips to Scarface...if Scarface pandered on RateMyProfessors.com

Within the sphere of education, technology enables Sloth for both faculty and students. The textbook companies provide accompanying PowerPoint slides, which reduces both the professor's preparation time and the students' note-taking efforts (especially the coasting C students that this chapter mostly speaks to). I've had good students hand in assignments full of typos with the explanation that the Microsoft Word red squiggly line didn't pick up the errors. Similarly, "I couldn't find any information on the topic" often means "there was nothing on the first page of Google." A friend of mine, during his undergraduate career, edited a Wikipedia page so that he could cite it as proof of his essay's thesis—although he would claim he was invoking a different Sin than Sloth.

Another shortcut for Professor Sloth: the test bank, which also accompanies the textbook and typically provides hundreds of potential questions, making it much easier for faculty to prepare exams.³⁰⁹ Unfortunately, the answer keys to most of these test banks have been compromised and are available for sale. Not just in some sinister grotto on the Dark Web—you can buy these on eBay. (I imagine Nelson Muntz saying "these are purely for entertainment purposes, it's not our fault if a few bad apples use them for cheating.") I discussed this phenomenon with another professor and we agreed that if a student memorizes one thousand questions and answers, while dishonest, it is not the end of the world from a pedagogical point of view. After all, the cheater must actually learn the material enough to recognize the correct answer. About twenty minutes after the discussion, my colleague caught a student opening a Word document version of the test bank during an exam to use the search function to find the correct answers. The official paperwork for academic misconduct in that case involved more use of adjectives like "brazen" than usual.

Technology absolutely escalates academic dishonesty. There are many factors in place leading to this change, including increased expectations, higher financial risks of failure regarding tuition fee increases, and changing conceptions of what entails original work. In one famous 2012 case, half of a class of 279 Harvard students were accused of plagiarism when they shared answers on a take home test. The general reply from the students was that since the exam instructions specifically said that it was "completely open book, open note, open Internet, etc.," not allowing students to discuss the test was a contradiction, since collaboration is such a fundamental aspect

of the Internet.³¹⁰ Harvard did not officially report the specific penalties, but Harvard Dean Michael D. Smith reported to the faculty that “somewhat more than half” had resulted in a student’s being required to withdraw, and that “of the remaining cases, roughly half the students received disciplinary probation, while the balance ended in no disciplinary action.”³¹¹ In any case, the loose attitude towards technology-enabled plagiarism is rampant throughout society, including reposting content (sometimes with minimal citations or commentary) on ad-driven websites or jacking images for memes, blog posts, and PowerPoint presentations.

While there was a grey area in the Harvard case, students who explicitly want to cheat can choose from a plethora of technological accomplices. Smartphones enable cheating in many ways—the most obvious is by storing and retrieving course material when needed (like during a test). This type of cheating has also devastated competitive chess (see sidebar). Colluding students can use the smartphone’s camera to capture test material for others who have yet to write the test. There are also pens and other devices that contain a small camera. Another method is to have an accomplice outside the room who can look up correct answers. Apps like Snapchat and devices like the Apple Watch further enable cheating because, unlike a text message, these messages disappear before an invigilator can collect evidence of cheating. Finding solutions for assignments is also easier than ever as so many previous students have uploaded their answers to sites like Scribd or made them available via open Prezi accounts. This is especially damaging to the integrity of case studies where solutions (and even professor notes) are widely shared on the Internet.

Searching for Bobby Fischer’s iPhone

Unlike sports such as sprinting, where even a good college athlete would not become an Olympic champion by taking steroids, an intermediate chess player armed with an iPhone can beat a world-class player. Gaioz Nigalidze, a Georgian Grandmaster, was disqualified from the Dubai Chess Open when he was caught consulting an iPhone hidden in a bathroom stall during a match.³¹² Apparently also trying to win a world title in the category of implausible explanations, he claimed no knowledge of the phone, which was logged in with his social media details and which contained a game identical to the one that he was playing. The cheating was so brazen that his consecutive national championships and even his Grandmaster status were brought into question.

Even tech-based weapons to combat cheating are under attack. Turnitin.com is a site that checks student submissions against a database of academic journals, previous assignments, and other websites to check for originality; many professors require that all assignments must be submitted to Turnitin before they will be accepted for grading. Unfortunately, a study by economist David E. Harrington determines that using Turnitin might actually help plagiarists because the limitations of its algorithm gives professors a false sense of security that the work is original, so they do not do their own diligent detective work.³¹³ Turnitin has a sister company, WriteCheck, that allows students to check what percentage of their paper will appear to be original. According to Harrington, “Turnitin is playing both sides of the fence, helping instructors identify plagiarists while helping plagiarists avoid detection. It is akin to selling security systems to stores while allowing shoplifters to test whether putting tagged goods into bags lined with aluminum [will] thwart the detectors.”³¹⁴ There are also many tutorials available online that advise students on how to game Turnitin, including a detailed article by computer programmer and professor at the University of the People Giuseppe Macario, who reveals that changing documents to PDF format or changing the ASCII code of individual letters within words fools the algorithm while leaving the document accessible to the grader.³¹⁵

Aspiring cheaters also closely study RateMyProfessors.com reviews; often the comments will reveal how strict professors are regarding academic conduct, so lazy students can search for easy markers or avoid faculty who actively enforce honesty. For those unfamiliar with the site, Ratemyprofessors.com is illustrative of at least three of the deadly sins: Wrath, Pride, and Sloth. Founded in 1999, it allows college students to anonymously evaluate their professors on four criteria: helpfulness, clarity, easiness, and hotness (!), with the first two averaged for a total “quality score.” From a methodology point of view, there are many problems with the site. For example, unlike official evaluations, which are a normal part of most college courses, there is no way of proving that an evaluator actually was a student in the class. In addition, the same (usually disgruntled) student can make multiple reviews.³¹⁶ By 2014, more than 76% of undergraduate classes were taught by adjuncts—teachers whose precarious positions are often evaluated solely by student evaluations.³¹⁷ Even though the RMP ratings are not “official,” they can quickly be accessed by academic departments, and a negative rating can eliminate a prospect’s chance before sanctioned recruiting commences.

Selection bias is at play here; since students need to make an effort to make an account and log in to the RateMyProfessors site, they are more likely to

do so if they either really love or really hate the professor, blurring the results into a binomial distribution. Professors who are tougher graders, enforce classroom decorum (such as arriving on time and not texting during class), or bust students for cheating are more likely to receive negative scores. Funny and good-looking profs receive higher grades, and male professors are scored higher than female professors (this difference is even more pronounced in ratings by female student evaluators). Attractiveness is explicitly recognized via the “hotness” rating, manifested by a chili pepper icon which gets redder and then begins to blister as the hotness score rises.³¹⁸

RMP tacitly acknowledges that there may be false reviews, stating in the FAQ: “We prefer that you only rate teachers you have first-hand knowledge of. However, it is not possible for us to verify which raters had which teachers, so always take the ratings with a grain of salt. Remember, we have no way of knowing who is doing the rating—students, the teacher, other teachers, parents, dogs, cats, etc.” At the end of each semester, the site adds a pop-up window dissuading students from doing “revenge reviews” of professors who gave them grades they felt were too low, suggesting that this is a common practice on the site. It also has a policy against professors rating themselves or colleagues, but since this activity is hard to detect, it is rarely enforced.

Despite all of the methodological challenges we just discussed, lazy journalists still regularly quote passages from RateMyProfessors as gospel whenever a professor is in the news—especially for a negative reason.

Journalism? There’s an App for That

Granted, journalism has been greatly impacted by technological change which has decimated advertising revenues. Still, it is up to the reader whether or not to accept that as an excuse and keep paying for shoddy journalism. A 2012 study at Cardiff University determined that 60% of press articles and 34% of broadcast stories were the result of “churnalism”—a term coined by BBC journalist Waseem Zakir to describe pre-packaged news releases that are published without additional comment or context.³¹⁹

The shirking terms like “was not available for comment” or “did not immediately respond to questions” are commonly used by journalists with the implication that the subject is deliberately avoiding comment. Tricks such as waiting to send the request until shortly before “press time” increase the chances of a non-response and have long been dodgy journalistic

tactics. Now, with so many ways of communicating, a journalist could send a message via a social media platform, an email, a voicemail, or instant message, and if the subject is not constantly monitoring all of them, they could be portrayed as non-responsive without the journalist ever having to conduct an interview.

When Sloth with respect to lazy journalism combines with the Pride of dedicated trolls, the results can be truly inspirational. Consider Jon Hendren, an Internet comedian who goes by the unfortunate Twitter handle @fart. He rose above that ignoble sobriquet with a brilliant performance on the HLN (formerly Headline News Network) after he convinced a producer that he was a policy and privacy expert. Ostensibly invited to speak about his expertise on American dissident Edward Snowden, he responded articulately and with a perfect poker face about Edward Scissorhands, the eponymous character from the Tim Burton film, portrayed by Johnny Depp. When asked by anchor Yasmin Vossoughian, “[Could] Snowden... have ‘feasibly harmed’ someone by releasing the classified information he leaked?” Hendren answered: “Well, you know, to say that he couldn’t harm somebody with what he did—he could, absolutely, he could. But to cast him out, to make him invalid in society simply because he has scissors for hands—I mean, that’s strange. People didn’t get scared until he started sculpting shrubs into dinosaur shapes and whatnot.”³²⁰ Bizarrely, the interview continued with the anchor not listening or seeming to comprehend what was happening before she closed off by thanking him for giving his opinion.

Jim Thorpe and the Xbox

At an early age, aspiring athletes are funnelled into competitive leagues, effectively encouraging the lower performers to give up hope and drop out. Parents even hire trainers for their kids and companies to produce “highlight films” with an eye to attracting college recruiters as soon as possible. Top athletes are now more likely to specialize in a single sport, despite the fact that most experts think this is a bad idea. Wayne Gretzky explained that he loved exchanging his hockey equipment for a lacrosse stick or baseball glove in summer months. As youth sport participation decreases, video game playing increases. According to a study by the *Wall Street Journal*, even though the overall size of the cohort of American youth aged 7–17 increased from 2000 to 2013, the participation rate in baseball, softball, basketball, and soccer all decreased (tackle football slightly increased).³²¹ Many of these youth who are no longer playing sports have drifted to the couch to play video games. This lack of exercise is

one of the main reasons why 71% of American youth aged 17–24 are deemed unfit to join the Armed Forces. Major Gen. Allen Youngman reports that in the past, “a drill sergeant could literally run the weight off a soldier as part of the regular training program... [but now] we have young people showing up at the recruiter’s office who want to serve but are fifty or more pounds overweight.”³²² In addition, too much screen time can cause health problems beyond obesity, including impaired sleep quality and vision problems.

For many young people, video games have replaced traditional sports to such a degree that professional leagues are blossoming. There is even a serious campaign to have them included as an Olympic sport. Not a new “Video Game Olympics,” however: campaigners literally want *Gears of War* and *Halo* players marching alongside gymnasts and decathletes. Major League Gaming is a series of tournaments for video games, including *StarCraft*, *League of Legends*, *Mortal Kombat*, *Soulcalibur*, *The King of Fighters*, and *Super Smash Bros Melee*. Within the category of eSports, video games have also become a serious spectator sport with tournament purses exceeding \$10 million and global revenue of \$748.8 million in 2015 and an expected \$1.9 billion by 2018.³²³ With these numbers, eSports is probably the fastest growing sport in the world. Wait, what? If you are picturing a gamer living in mom’s basement surrounded by bongos and Cheetos dust and are trying to reconcile this image with the word “sport,” you are not alone. You would, however, get an argument from Tom Burns, an Australian writer who studies bioethics and neuroscience. In an essay, he describes the ability of South Korean *StarCraft* player Park Sung-joon, who completed an average of 818 precision actions per minute of gameplay during one match. He argues, “So, need eSports keep the “e”? I think not. They require the same sorts of skill sets as those found in traditional sports, are social, not just technical displays or events, are financially viable, and they are only growing in popularity and recognition.”³²⁴ Sadly, eSports has suffered the scourge of performance enhancing drugs; research from Eurogamer reported that high level players regularly abuse Adderall (and similar drugs such as Vyvanse and Ritalin) which greatly increase the user’s ability to concentrate and delay fatigue.^{325 326}

Burns also compared the dexterity, patience, strategy, and composure required at high level eSports to golf. Interestingly, golf, which was reintroduced to the 2016 Summer Olympics for the first time in 112 years, is in a serious decline. One of the main reasons for golf’s troubles is that it just doesn’t appeal to Generation Y. It requires a long time to play; four hours doing the same thing is anathema to this cohort. It requires people who are

used to instant gratification to master difficult, often counter-intuitive skills, costs a lot of money, and requires a large plot of land filled with monoculture grass—unappealing to the environmentally conscious.

How will technology-infused Sloth evolve into the future? An optimist would suggest that nanobots and other medical developments will address obesity and other health problems. In addition, artificial intelligence will continue to improve, and concerns about “technical crutches” might seem quaint—after all, eyeglasses and shoes are a type of augmented reality. Within the field of education, battles will continue between cheaters and proctors, but perhaps that battle will inspire innovative methods of instruction and evaluations that are incorruptible by cheaters.

Pride

The Internet has given everyone an audience—or at least the appearance of one. We can read the words of brilliant writers who do not have the inclination or opportunity for full-time journalism or authorship. We can hear exceptional musicians who are either too niche, unlucky, or ill-suited for the mainstream record-label tastemakers. The promising upside: everyone can be a celebrity. The devastating, devastating downside: everyone can be a celebrity.

Does Pride seem to you to be a curious Sin? After all, is a robust self-esteem not a sign of emotional well-being? Augustine believed that it was Pride that drew Satan away from God; in the *Divine Comedy*, Dante decided that Pride must be the first Sin to be purged. Thomas Aquinas stated that “Inordinate self-love is the cause of every sin.”³²⁷ Henry Fairlie, a British political journalist and social critic, discussed this issue in his book *Seven Deadly Sins Today*:

Pride is the cause of disobedience, which sets one willfully at odds with lawful authority, in the family or in society. Pride is the cause of boasting and hypocrisy, which make it impossible to communicate intelligently with others. Pride is the cause of scorn and presumption and arrogance, which erect barriers against those with whom one comes into contact.

*Pride is the cause of impatience and obstinacy, which lead to strife rather than cooperation with other people. Pride is the cause of self-centeredness and vainglory, which set one apart to do merely as one wishes.*³²⁸ *Pride leads to such a swelling of the heart, filled with its own self-pleasure that there is no place for others in it.*³²⁹

It bears mentioning that “Today” in Fairlie’s title was 1978 and he goes on to decry both *The Joy of Sex* and chandeliers (in the same sentence) and predicts that barefoot hippie students will storm the library and tear up the card catalogues. Still, he points out that Pride can focus a person’s attention on themselves at the expense of the rest of society. It is probably for the best that he left this earth a quarter-century before the introduction of Instagram.

If Pride represents focus on the self, social media makes its manifestation simple. The word “selfie” has an official definition in the *Oxford English Dictionary*—a photograph that one has taken of oneself, typically one taken with a smartphone or webcam and uploaded to a social media website. In fact, it was the OED word of the year for 2013, beating out finalists including *binge-watch*, *Bitcoin*, and *twerk*. According to the organization, usage of the word in common practice increased 17,000% over the previous year.³³⁰ Selfie stick may be close on its heels. Its OED definition is “a device in the form of a rod on which a camera or smartphone may be mounted, enabling the person holding it to take a photograph of themselves from a wider angle than if holding the camera or smartphone in their hand.” The device intensifies the inherent narcissism of the selfie by increasing the physical space required to take the picture and creating a potential hazard for passers-by. In 2015, Disney banned them from all of their theme parks, citing, “Handheld extension poles have become a growing safety concern for both our guests and cast.”³³¹

Selfie-induced narcissism intensifies when the subject is situationally clueless. There are Facebook groups and Tumblr sites dedicated to collecting (and shaming) people who have taken smiling selfies in inappropriate situations (such as in front of a car accident or burning house) or locations that are meant for sombre reflection (such as the Martin Luther King memorial or the ruins of the Chernobyl power plant).

In the worldview of the prideful, all things exist for their benefit and they are entitled to the use of them. And since a smartphone has become a natural extension of one’s body, any electrical outlet is fair game for charging their devices. People become territorial over outlets in

public places; plug-adjacent real estate is coveted in coffee shops, airport lounges, and lecture halls. Probably my favourite example of cluelessness in this avenue is the person who walked on to a Broadway stage right before a performance of *Hand to God* to plug his phone charger into the prop outlet. Playbill reported that “the crew had to stop the precook music, remove the cellphone, and make an announcement as to why you can’t do that.”³³²

Pride also manifests on social media in the “humblebrag.” The OED added the word in 2014, defining it as “an ostensibly modest or self-deprecating statement whose actual purpose is to draw attention to something of which one is proud.” An example would be, “I’m the worst at getting used to changing gears in my new Mercedes” or “it looks like they are letting terrible beer league hockey players into law school.” According to a study conducted by the Harvard Business School, “Humblebragging may constitute a particularly miscalibrated case... Humblebraggers experience the positive effect from bragging and the positive feeling that they are not actually bragging, while recipients react negatively to both the self-promotion and the attempt to mask it.”³³³

It’s Twenty-Two Hundred Hours, Do You Know Where Your Infantry Is?

Social media introduces new wrinkles to warfare, particularly in keeping the location of troops secret. When Russia denied entering Ukraine, that statement was difficult to defend when young soldier Alexander Sotkin’s Instagram post contained a selfie that confirmed his location was inside Ukraine and that his unit was equipped with a BUK, an anti-aircraft weapon.³³⁴ In 2014, the Israeli Defense Foundation introduced updated social media restrictions for all of its military personnel (a blanket 2010 ban on posting while off base had been widely ignored). While the ban was attributed to security concerns, the announcement came closely after Facebook posts of scantily-clad female recruits posing with military equipment were widely shared.³³⁵ Similarly, when software millionaire John McAfee was a fugitive on the run from murder charges, he gave an interview to *Vice* magazine. While the interviewer agreed not to reveal where the meeting took place, the iPhone 4S used to take the story’s accompanying photo made no such promises—the embedded GPS information provided a precise location.³³⁶ Incidentally, the Belize government later withdrew the murder charges against McAfee.

The ME in Social Media

Fitbit is a company that makes rubber bracelets containing a wearable computing device that measures steps taken, stairs climbed, and sleep quality. The company cleverly incorporates gamification, awarding badges for daily and lifetime accomplishments (as I am writing this sentence I'm celebrating the fact that since I started Fitbitting I have walked the length of the Nile River) and encouraging competition with other Fitbit users in your network. For the right sort of competitive personality, it becomes extremely important to get those electronic rewards for your efforts. Case in point: I had two similar trips to visit a client in Cincinnati where our meetings ended mid-afternoon, and my associate dropped me off at the Northern Kentucky airport three hours ahead of my return flight to Toronto. The first time, I spent the time circumnavigating the massive building twice, racking up the steps. On the second trip, I left my Fitbit at home and since I wasn't going to get any "credit" for the exercise, kicked back with a large glass of wine and watched two episodes of *Homeland* on my iPad.

Facebook remains the most powerful social media platform and is still growing (August 24, 2015 was the first day that one billion unique accounts logged on), although the growth rate is slowing as it battles with the law of large numbers.^{337 338} It is a bastion of narcissism; many people use it primarily to brag about their lives.

Incidentally, when you post a status update to Facebook, an algorithm determines which of your contacts will view it—typically people with whom you have interacted recently. If the post attracts more views or comments than usual, the algorithm will expand the reach of your message by revealing it on the wall of people at the periphery of your network. Although Facebook is free for users (and always will be, pines Zuckerberg), users had been able to boost the power of a message by paying \$6.99—until Facebook quietly shut down the program.

Despite Facebook's market leadership, critics point out that young people are loathe to actively participate and share information on a platform infested by their parents and grandparents. Most young people keep a Facebook account for high-level communication and to avoid missing out on event announcements, but for most of their day-to-day communication have moved to other platforms such as Instagram (see p.117). During the third quarter of 2015, market researcher GlobalWebIndex reported that 34% of Facebook users updated their status, and 37% shared their own photos, a drop from 50% and 59% during the same period in 2014.³³⁹ Passive users are

less valuable to Facebook and its advertisers, so Zuck's crew try to encourage more activity via reminders such as anniversary posts and schmaltzy "Years in Review" video tributes. Leaving (or engaging less with) Facebook does not reduce the narcissism of young people however—it just moved to other platforms. Instagram was considered by many to be the heir apparent to Facebook due to its success with the under-thirty crowd suffering from the anguish of being "friended" by their parents—until it was purchased by, uh, Facebook for \$1 billion.³⁴⁰ By 2015, Instagram had more than 300 million active users with higher satisfaction ratings than its parent and was growing at a much faster rate.³⁴¹

Oversharing on social media endangers civil liberty as every post and upload adds to a surveillance state. A video from *The Onion* satirically suggests that Facebook was, in fact, a brilliant intelligence-gathering exercise. During "testimony to Congress," a faux CIA official exudes, "After years of secretly monitoring the public, we were astounded so many people would willingly publicize where they live, their religious and political views, an alphabetized list of all their friends, personal email addresses, phone numbers, hundreds of photos of themselves, and even status updates about what they were doing moment to moment. It is truly a dream come true for the CIA."³⁴³

Like all great satire, it is funny because it is based on truth. ECM Universe

Facebook vs. Instagram

Meredith Burns, a Gen Z Torontonion working in advertising, patiently provided me with the reasons that she and her friends made the switch. Besides the parent/grandparent issue, two other key issues are:

1. Connections to larger circles: Instagram allows you to participate in a much larger community and conversation. Hashtags are less useful on Facebook because privacy settings reduce your visibility. This increased audience allows people to develop their own celebrity in a larger pool. If you have an open profile, you can attract follows/likes/comments from anyone, not just in your community.
2. Importance of images versus text: Instagram puts a much larger emphasis on photos—that is, the way you look and the context of your surroundings. The humblebrag, and bragging about your appearance, is significantly easier and takes on a different form on Instagram. You take a picture of something as the focus of the post (e.g., Starbucks) and then show the intended message (e.g., "Hey look at my Mercedes") in the background.³⁴²

evaluates social media posts and other online communications to predict which individuals show “warning signs” of future violence or other criminal activity.³⁴⁴ Technology skeptic Evgeny Morozov adroitly illuminates the problem with this system: “as companies like ECM Universe accumulate extensive archives of tweets and Facebook updates sent by actual criminals, they will also be able to predict the kinds of nonthreatening verbal cues that tend to precede criminal acts. Thus, even tweeting that you don’t like your yogurt might bring police to your door, especially if someone who tweeted the same thing three years before ended up shooting someone in the face later in the day.”³⁴⁵ Remember: there was more to the movie *Minority Report* than the cool multi-touch interface Tom Cruise’s character deployed. The important lessons from this film dealt with free will versus determinism and preventative but fallible protection of a state versus individual liberty.³⁴⁶

Amateur Hour, but Sometimes the Amateur is Not Bad

Inherent human narcissism combined with the power of social media leads to some truly horrid scenarios. People with minimal talent can become superstars. We already discussed Rebecca Black in the Wrath section. Gary Brotsma would absolutely not be a celebrity in any other era. If you have not heard of this artiste, search “Numa Numa”. He lip syncs and “dances” without leaving his office chair. The fact that the fame these people may be enjoying is ironic doesn’t really matter—the only currency that matters online is page views. Even the word “meme” devolved quickly from an obscure term used by sociology grad students as a catchall term for material that have “gone viral.”

In fairness, some artists that broadcast via new channels such as YouTube are extremely talented. For a great example, check out Lindsey Stirling, a dubstep (electronic music with influences from reggae and hip hop) violinist who reportedly earns more than \$6 million per year from YouTube.³⁴⁷ She is an extremely talented dancer and musician and her videos have high production quality and a nerdy quirkiness that resonates with her fan base. Ironically, she made her videos as part of a campaign to earn a recording contract; her online success served to massively bolster her bargaining power once the labels starting calling. Although, as pop culture expert Rob Salkowitz points out, Stirling’s online success “makes you wonder why she wants or needs a label. Not many recording artists under contract makes \$6 million per year these days.”³⁴⁸

Amateur writers can also benefit from technology-enabled platforms. Thousands of new writers arrive on the scene at the same time that the

traditional press is fighting a war for survival on multiple fronts. Although advertising revenue for traditional media is plummeting (a Pew Research study indicates that newspaper advertising revenue declined by half from 2004 to 2014),³⁴⁹ readers' expectations are increasing especially with respect to speed to print. Generation Y consumers are unlikely to ever want to read news the next day, on dead trees, in a format that is difficult to share. In *Who Owns the Future?*, Jarod Lanier posits, "it used to be that printing presses were expensive, so paying newspaper reporters seemed like a natural expense to fill the pages. When the news became free, that anyone would want to be paid at all started to seem unreasonable."³⁵⁰ The comment is made tongue-in-cheek, but it does reflect the point of view of many publishers, event promoters, and other business people who ask writers, artists, and speakers to work in exchange for "exposure."

Self-publishing is easier than ever before. Firms such as Author House can help to edit and lay out a book; other firms are available to design cover art and create illustrations. While a "fast" traditional publisher can get a finished draft to the book stores in six months, finished eBooks can be uploaded immediately to Amazon or its many competitors. Sure, but traditional publishing is more lucrative for authors, right? Not necessarily. A typical first time author is lucky to collect 15% of the cover price. By contrast, Amazon pays 90% to the author, so an eBook priced at \$5 can earn the author more returns than a \$25 "dead tree" version (depending, of course, on sales volumes).

But you still need traditional publishers to get your book out there and noticed, though, right? There have been some outstanding self-publishing successes—*Fifty Shades of Grey* originated as Twilight fan fiction. The Internet also played a critical role in Andy Weir's journey to bestselling author.³⁵¹ *The Martian*, a survival story of an astronaut abandoned on the Red Planet by his crewmates who thought that he died in a storm, began on Weir's blog, where he wrote a chapter at a time, collecting feedback about future ideas and incorporating corrections of earlier chapters, especially those related to science. Eventually, enough fan requests convinced Weir to compile the work into a single eBook that sold at Amazon's minimum price of 99 cents. After it quickly jumped to number one on the Amazon science fiction charts, Random House reached out with a book deal and was followed four days later by an offer to turn it into a blockbuster film.³⁵² However, these success stories are the exception to the typical self-publishing story. The majority would not pass the muster of a traditional publisher and many are pure vanity projects. Helicopter parents fuel this phenomenon by

encouraging their deeply gifted children to self-publish Harry Potter knock-offs so they can boast that their children are “published authors.”

Pride of a (Digital) Nation

Tribalism and territoriality play an important role online. Each online community proudly develops cultural norms, including its own lingo. Newcomers (in the early days of the Internet, they were referred to as n00bs) are mocked for misusing terms—or even worse, *correcting* the deliberate misspellings. When the Internet first came into public use, hackers developed l33tspeak, a dialect of written English designed to hide content from Boolean searches. Typically, vowels were replaced with numbers (A becomes 4, E becomes 3, I becomes 1, etc.), punctuation replaces various letters (e.g., replacing O with “()”), z is used to pluralize words rather than s, and f is replaced by ph. For example, “mad skills,” which comes up in online conversation more often than you might think, might be written in l33tspeak as “m4d skilllz.” Other l33tspeak words are just simple transposed letters that look like typos. “Teh” is a good example of this phenomenon. At its base level, teh is a misspelling of “the,” but it also contains additional nuance, acting as an intensifier (“that is teh fast” means “that is the fastest”), presumably because the “typo” occurred because the writer was typing incorrectly due to excitement. In any case, making a correction of a l33tspeak term will quickly raise the ire of established communities. Typical to Internet discourse, this phenomenon goes far beyond political correctness or even basic decorum. On the redboards, a series of discussion boards descended from the defunct dot-com *schadenfreude* archive Fuckedcompany.com, the term “tard”—an unfortunate derivative of “retarded”—used as a suffix is an honorific, not a pejorative. For example, if a poster wanted advice from someone with financial expertise, the subject line would be directed to “finance tards.” If a visitor scolded the poster for using inappropriate language, that person would at best be invited to leave, but would more likely be subject to mockery or abuse.

Wikipedia is an amazing accomplishment. With 40 million articles in more than 290 languages, it contains more information than any other body of work created by humanity.³⁵³ It is especially good at presenting articles about scientific and popular culture subjects. Britannica fans would tell you that the latter is a dubious accomplishment—there is a reason why the venerable British volumes do not include a breathlessly detailed entry for each *Futurama* episode.³⁵⁴ *Nature* magazine famously studied samples from both entities and found 162 errors in *Britannica* and only 123 in Wikipedia.³⁵⁵

Critics immediately jumped to *Britannica's* defence, pointing out that while it may have had more errors, those in Wikipedia were more grievous. In any case, all the identified errors in Wikipedia were immediately fixed while the *Britannica* mistakes needed to wait until the next printed edition (there were still a few to be printed—the final dead trees version came to us in 2010). *Britannica* can still claim overall scholarship quality (at least for a randomly selected entry), better grammar and writing, as well as brevity. A 2007 *Wall Street Journal* article cleverly compared pairs of Wikipedia entries that had seemingly incongruent word count values—for example, the entry describing the actual West Wing where the American president's senior staff works was 1,100 words long, while the Aaron Sorkin drama *West Wing* required 6,800 words.³⁵⁶ Similarly, John Locke, the character from *Lost*, had almost twice as many words dedicated to him than his seventeenth-century English philosopher namesake.³⁵⁷

Despite all of Wikipedia's success, due to tribalism within the hardcore editors, its operation is a beehive of dysfunction. Most of the edits are completed by a small cohort who operate as pedantic hall monitors, who understand neither the letter nor the spirit of the platform's operating principles. Try to add a new article—a swarm of bullies will immediately descend and banish it to a show trial of “speedy deletion.” Since it puts decisions to a vote, it often decides the validity of facts based on majority opinion—what Stephen Colbert's TV persona refers to as “truthiness.”

Personally, I often get lost in a random walk through Wikipedia and usually make small edits where I see a typo, an easily corrected inaccuracy, or lack of clarity. I do not have the patience of Bryan Henderson, who has made more than 47,000 edits to articles, the vast majority changing the incorrect “comprised of” to “composed of.”³⁵⁸ One time I was reading the Wikipedia entry for the long-running Kelsey Grammar sitcom *Frasier*, which was created by David Angell, Peter Casey, and David Lee, who worked on *Cheers* where the eponymous character was introduced. The entry referenced that British (Google it) character actor John Mahoney, who played Martin Crane on *Frasier*, impressed the producers while playing a minor guest character on *Cheers*. On that episode, charming but ineffectual manager Rebecca Howe wanted to hire an advertising agency to promote the bar, but after revealing her miniscule budget, she was assigned Sy Flembeck, a hacky old-school ad man played by Mahoney. As part of his deliverable, Flembeck plays the piano while warbling a jingle to the tune of “Old McDonald Had a Farm,” replacing E-I-E-I-O with C-H-E-E-R-S. The Wikipedia entry described the character as a “pianist,” which I edited to read “ad man,” explaining in my

edit summary that while Flembeck technically did play the piano, he only did so as part of his actual vocation in advertising. While he does play the piano, calling him a pianist is no more accurate than referring to him as a vertebrate or components of extinct stars.³⁵⁹ In any case, the curator of the page rejected my edit and opened up a detailed rebuttal on the Talk Page. He (I assume, 80—90% of the most ardent editors are male) won the battle—I just didn't care enough to bother fighting.³⁶⁰

Fan fiction is a phenomenon where people write new stories involving characters and settings from previously published works. Most authors are generally supportive, even a little flattered by the mimicry. J.K. Rowling believes that just as Harry Potter encouraged a new generation of readers, she is pleased to inspire the cohort to be authors as well—she just stipulates that it is made clear that she is not involved, that the fan fiction is not commercialized, and that the narrative be free from racism and pornography.³⁶¹ Ah, Rule 34 again—not surprisingly, a large subset of fan fiction is of the erotic nature. Within the fan fiction community are self-appointed editors who evaluate the quality of (usually) new authors. One way of doing this, referred to as “sporking” (derived from the fact that a reader would rather gouge out their eyes than continue to read bad fiction), offers to help with edits, but in actuality a bullying type of tribalism that provides edits that are so savage that the real intention is to force the newbie to stop writing.³⁶²

The impact of technology on Pride like most of the Sins will continue to evolve. The changing nature of celebrity indicates that more people can become (to a lesser degree) famous. Search engines and the Long Tail (the shift away from the dominance of a small number of “hits” at the top of a demand curve to multiple smaller offerings at the tail) allow people to be intense celebrities in small niches. Go to the GentleWhispering page on YouTube to learn about Maria, an Autonomous Sensory Meridian Response superstar whose videos of her speaking softly generate millions of views. If media were still three networks, her talents would not make for financially viable entertainment. Does Maria's marketing constitute pride or is she just trying to access her fan base? Also, the amount of data collected by wearable computing will probably increase oversharing — people brag about weight loss and Fitbit steps, will blood glucose Tweets soon follow? Or perhaps, the oversaturation of information will make it harder to brag as there are so many other people with similar or better accomplishments, all easily accessible.

Gluttony

What happens to insatiable appetite in an age of abundance? In a time of plenty is it really such a Sin to indulge a little? Or is it that we've been trained to over-consume by the advertising industry? Certainly the reasons for this phenomenon are complex, but North Americans in particular—although they are not alone—are larger than ever. In 2013, an estimated 170 million children under the age of eighteen were overweight worldwide.³⁶³ Waistlines expand while physical activity diminishes.

Technology certainly plays a significant role in this devolution. It is easier than ever to order food without leaving the couch—some video games even allow you to order from whatever world your thumbs are navigating through. Most fast food establishments have apps that allow orders via mobile devices. Food-delivery app Eat24 advertises on porn tube sites, banking on viewers enjoying the convenience of satisfying multiple appetites in one place. On the Eat24 corporate blog, they bragged about the campaign's success:

No matter what metric you want to use to define success, our campaign kicked ass all the way across the board. Impressions? Our porn banner ads saw three times the impressions of ads we ran on Google, Twitter, and Facebook combined. Click through? Tens of thousands of horny Americans clicked our ads. Yeah, but did they convert? Pshhh, please.

*We saw a huge spike in orders and app downloads during the time our ads were live, especially late at night when that insatiable desire for [food, with a double entendre] is at its most intense.*³⁶⁴

We might think that Web-based transparency about sodium and calorie information would shame companies into providing healthier food, but KFC's Double Down sandwich and Boston Pizza's monstrous cheeseburger wrapped in a pepperoni pie essentially market themselves as a dare to consumers.³⁶⁵ Not only do consumers use the Internet to seek out the products, but also to document the consumption on social media, where vibrant discussion is fueled by morbid curiosity.

What the Medieval Church considered Gluttony has a spurious correspondence to overweight twenty-first-century Americans, truth be told. Let's back this train up for just a moment to see where it came from. Theologian Graham Tomlin, whom we met in chapter one, points out that "these lists [of Sins] came out of the experience of the earliest monks, who had set their face against sins of luxury and bodily comfort, choosing instead a life of meagre physical comfort in exchange for the spiritual goods to be had instead. Gluttony stood for all the 'sins of the flesh' that they despised so much."³⁶⁶ While the old sentiment referred to wealthy people engorging themselves at the expense of piety and modesty, their excess flesh the physical manifestation of their spiritual failings, today the poorest demographic groups in the developed world are the heaviest—due primarily to socio-economic factors such as living in food deserts, irregular working hours, and poor nutrition from over-reliance on processed foods. Also, beauty standards have changed considerably; Rubenesque models and even Marilyn Monroe's hourglass figure would receive fat-shaming snickers on Instagram today.

Selfie Soufflé

Smartphone acceptance in restaurants introduces a new wrinkle to the dining experience with the bizarre ritual people have of taking and posting photos of their food, followed sometimes by an "after" shot of their empty plate. While today the rare restaurant ban phones entirely (this is often the case in old-school dining rooms in private clubs), not long ago taking any sort of photo of food was considered gauche at best, or stealing the chef's intellectual property at worst. Acclaimed food critic Joanne Kates lamented in a 2012 column, her last before she retired, how difficult it used to be to take notes incognito during a meal:

I tried everything: tiny notebooks in the lap (oh, the ink stains on skirts I couldn't afford in the first place). I tried going to the bathroom to scribble some thoughts down. I even had a jerry-rigged tape recorder for a while, with a mike in my sleeve. (That works better on TV.) I am thankful that with the advent of handhelds, nobody notices me taking notes because everybody's texting at table these days—or snapping pics of their dinner.³⁶⁷

Photos of meals show up often on Facebook feeds and even more frequently on Instagram. A popular blog and Tumblr account exist dedicated solely to “pictures of Asians taking pictures of their food,” which is exactly what it sounds like.

How does this new habit affect the dining experience? A Craigslist post by a Manhattan restaurateur describes finding security tapes from 2004 and watching them to discover how much customer behavior has changed over the ensuing ten years. The post (some people question its authenticity) went viral—a link to aggregator site Distractify quickly generated more than 750,000 shares and 2600 comments.³⁶⁸ His main observations were that smartphone use slowed down and diminished the dining experience for everybody. Some highlights from his rant/observation:

- 26 out of 45 customers spend an average of 3 minutes taking photos of the food.
- 14 out of 45 customers take pictures of each other with the food in front of them or as they are eating the food. This takes on average another 4 minutes as they must review and sometimes retake the photo.
- 9 out of 45 customers sent their food back to reheate. Obviously if they didn't pause to do whatever on their phone the food wouldn't have gotten cold.

27 out of 45 customers asked their waiter to take a group photo. 14 of those requested the waiter retake the photo as they were not pleased with the first photo. On average this entire process between the chit chatting and reviewing the photo taken added another 5 minutes and obviously caused the waiter not to be able to take care of other tables he/she was serving.

Overeater Superstar

We met Rule 34 in the Lust chapter and it applies directly to the phenomenon of feeder porn sites. These websites feature (usually) women who communicate with fans via webcams and take requests (and donations) to consume high-calorie foods in order to gain as much weight as possible.

Many fans describe being sexually aroused by the weight gain and the models often display as much flesh as possible—with some performing sexual acts for the camera. University of Lethbridge researcher Lesley Terry agrees that some interpersonal manipulation may be at play, stating, that “as with any relationship, when taken to extremes it can become dark and abusive.”³⁶⁹ However, Terry also points out that “If you look through history, fat used to be—and still is in many cultures—considered beautiful... The stick figures that walk down the runway wouldn’t be considered capable of surviving a famine or sustaining a pregnancy. In certain African tribes and in parts of Nigeria, girls still go to “fat houses” to be fattened up before marriage. In our own society we have completely different images of beauty thrown in our faces every day—but that doesn’t mean that there aren’t those who have different preferences.”³⁷⁰ The main human subject of Terry’s and colleague Paul Vasey’s research, given the pseudonym “Lisa,” described her motivation as follows: “being called names like fatty or pig, or someone pointing out how big I am or how much weight I had gained, drawing attention to or describing different body parts, for example, ‘look how flabby your belly is getting’ ... I enjoy the sensation of being ‘stuffed,’ but part of that arousal is knowing that it will lead to weight gain later. The power dynamic in force-feeding is appealing to me... I am aroused by the idea of being under the control of someone who wants me fatter.”³⁷¹

Donna Simpson obtained celebrity within the community via her feeder site; she claimed to have earned more than \$90,000 in donations (she charged \$19 per month for access to her website) to encourage the 15,000 calorie a day diet that caused her weight to reach almost 800 pounds.^{372 373} However, after setting a Guinness World Record for “World’s Heaviest Mom,” Simpson ended her relationship with her boyfriend (whom she met through a feeder fetish site) and shut down her website to concentrate on losing weight, improving her health, and focusing on motherhood.

According to Rutgers sociology professor Luis T. Garcia, “the feeder fetish is unique because it concerns not an object or a body part but an actual behavior... People associate feeding with arousal.”³⁷⁴ Psychologists believe that the people encouraging the overeating also want to exert control over the eater, especially when their size grows so much that their mobility is limited. Garcia states, “If someone is coerced into destructive behavior to stay in a relationship, that’s a problem... You see the same kind of thing in people who practice sadomasochism. It can be very mild, like tying up their partner, or it can involve activities that are dangerous.”³⁷⁵

Fat Acceptance vs. Thigh Gaps

Fat Acceptance sites are very active communities where overweight people mutually support one another against “thin privilege.” One of the most thorough examples is *This is Thin Privilege*, which by the way rejects the label “Fat Acceptance,” stating instead that it is a Fat Activism site. The site describes Thin Privilege as “a social phenomenon that exists as a function of fat stigma, and it exists regardless of someone’s personal experience being thin or fat. Fat stigma is real, pervasive, and forceful. It invades entertainment, science, news reporting, advertising, sports, business, family planning (like adoption and fertility treatments and being called an abusive parent by virtue of you or your child being fat), education, dating/love/sex/marriage, fiction, travel, academia... and on and on and on.”³⁷⁶

The site is bold, strident, and cogent. It would not, however, convince comedienne Nicole Arbour; her YouTube video “Dear Fat People” is a six minute rant countering the main Fat Acceptance arguments. A sample: “They forgot to tell you that ‘Plus size’ stands for ‘plus heart disease, plus knee problems, plus diabetes. Plus your family and friends crying that they lost you too soon because you needed to have a coke plus fries.” The video caused a brief rift as Internet commenters demanded that the thin, blonde, and conventionally beautiful woman apologize and be banned from television and movies. The video was temporarily removed from YouTube for violating its terms of use, but was restored. Arbour may have lost a movie role, although she disputes that account. Stories about the video in the *Huffington Post* and its ilk generated copious comments split between people decrying her message and people supporting it. In any case, it raised her profile, generated more than 18 million YouTube views (as well as 28 million Facebook views, although there can be some double counting). It also snagged her an invite to *The View*, where she received a scolding from Joy Behar but did not apologize. Instead, she hedged a little, stating, “that video was made to offend people, just the way I do with all my other videos. It’s just satire, it’s just being silly. I’m just having a bit of fun, and that’s what we did.”³⁷⁷ In any case, she doubled down on her video with a sequel “Dear Fat People 2: The Second Helping” in February 2016 which also garnered more than 1.8 million views.

On the other hand, Instagram culture and some particularly skinny Victoria’s Secret models brought the “thigh gap” to prominence in 2012. It refers to a space between the inner thighs of women standing with their

knees touching. It generated a slew of blogs, Tumblr accounts, and more than 700,000 photos posted on Facebook and Twitter, as well as the 2013 book *The Thigh Gap Hack: The Shortcut to Slimmer, Feminine Thighs Every Woman Secretly Desires*. Not unexpectedly, the book and the trend received damning criticism from many circles claiming that it set unrealistic and potentially dangerous expectations. The “bikini bridge” was a 2014 follow-up, this time referring to when bikini bottoms are suspended between hip bones, causing a gap between the garment and the lower abdomen. Although the “trend” was traced to a 4Chan prank, once it picked up viral steam it gathered some legitimate followers.

Diets are one of the most common topics discussed in Internet forums; fans of South Beach argue with Paleo adherents, and trends come and go quickly. A troubling extension of online diet-related discussions are pro-ana and pro-mia sites. These groups treat anorexia and bulimia not as dangerous eating disorders but as chosen lifestyles, and provide tips about how to minimize calories, hide eating and purging habits, “proper” purging techniques, and how to manage secondary effects such as hair and tooth enamel loss. Dr. Helen Sharpe of the Institute of Psychiatry at King’s College in London conducts research that shows pro-ana and pro-mia online communities are very common. She tells us, “we know from a small number of studies that viewing pro-eating disorder content is harmful as it makes healthy women experience greater body dissatisfaction and feel less positively about themselves.”³⁷⁸ She also points out that “eating disorders can be extremely isolating conditions, and so finding a community of other people who think like you can be a powerful draw.”³⁷⁹ Dealing with these sites is tricky as censorship and criminalization of discussion among this group (mostly young women, but men’s eating disorders are growing as well) is not a solution. French sociologist Antonio Casilli believes that “criminalizing these websites means [outlawing] mental illness—a double burden for sufferers,”³⁸⁰ building a wall that prevents them from getting treatment, and warns that censorship will reinforce “densely-knitted, almost impenetrable ana-mia cliques” that are “suspicious, secluded and inward-oriented.”³⁸¹

Meta Gluttony

At a meta level, Gluttony manifests in the over-consumption of *anything*, the consumption element distinguishing it from pure Greed. Guess what? The Internet is there to supply your demand. During a brilliant rant about net neutrality on his HBO show *Last Week Tonight*, John Oliver illustrated

the expansive value of the Internet via a curious consumer product. He exclaimed:

*you could go online RIGHT NOW and buy a case of coyote urine. Do you know how difficult it used to be obtain coyote urine? You literally had to give a coyote Gatorade and just wait. It was a mess. The system was a mess.*³⁸²

Strictly speaking, this isn't true. Pre-Internet, one could buy coyote urine (it is used to ward off pests and lure coyotes into a trap) from hardware and sporting goods stores, but it is so much more convenient and easy to purchase it now online. By the way, a sample Amazon review of the 4 oz. bottle of Wildlife Research 523 Coyote Urine reads: "Have not seen the raccoon since I applied it, side benefit...taste[s] good with vodka! LOL." I suspect this reviewer, "geod," was messing with us a little. The point is the Internet provides an embarrassment of riches—you can find and buy almost anything in any quantity!

"geod" at least paid Bezos for his coyote urine. The Internet has taught some people that material, especially intellectual property, should be free. After all, how can they be expected to keep up their consumption rates if they actually have to pay for it all? Beyond streaming music and movies, newspaper paywalls are consistently resisted and in some cases easily bypassed by erasing a cookie or initiating Incognito mode on Google. For those intent on mischief and worse, apps and social media platforms can be deployed in ways that encourage Gluttony for free goods. Robert Salisbury, an Oregon man, received a puzzling phone call in which he had to explain that he was not giving away his horse (that's right—his horse). When he got home, he stopped a truck from leaving with his ladders, lawn mower, and weed eater. Showing remarkable restraint, he questioned some of the people and was told that they were responding to a Craigslist ad that stated the homeowner had to move and all his stuff was free for the taking. He returned to his house to find strangers rummaging through it and removing his possessions. Salisbury reported that "I informed them I was the owner, but they refused to give the stuff back... They showed me the Craigslist printout and told me they had the right to do what they did... They honestly thought that because it appeared on the Internet it was true."^{383 384}

What if food or material goods are not what you desire to consume? The Internet enables a glutton for information. No matter what the interest, copious information is available, along with discussion forums to compare

notes with other aficionados of the subject area. This is not evil *per se*, but then again Gluttony may be the Sin that translates the least from when the Church composed the list. There is danger in over-consuming material from the same point of view. Whether you adhere to liberal or conservative beliefs, you can find plenty of self-reinforcing commentary on any issue. If you want to believe that vaccines cause autism, you have the ability to discuss that theory with many others. A group of academics from the United States and Italy published an academic paper stating that people online, especially Facebook users, set up echo chambers with other people of similar viewpoints. They suggested that “such practices help explain such odd phenomenon as the widespread rejection of scientific evidence of global warming, or the Jade Helm 15 conspiracy theory, where alarmists set off online panic by suggesting that military training exercises occurring in various parts of the US [in 2014] were a sure sign of an impending civil war.”³⁸⁵ True to form, one of the entries in the comment section (gently edited) reads: “just the opposite: echo chambers are being used by democrats to reinforce their own warped beliefs on the subject of global warming. Global warming is a Democrat hoax. Even NASA is now saying that six decades of climate science models were wrong; they are also saying that greenhouse gases instead cause global cooling.”³⁸⁶

The Empire Builders

Wait, didn't we cover Internet wealth in the Greed chapter? It goes beyond that—once these people reach unspendable multigenerational wealth, their drive for more money and glory continues. If we consider Gluttony as consuming far too much at the expense of those who do without, then the winner-take-all economy provides a reasonable comparison to the medieval lord feasting every night while serfs go to bed hungry.

Vanity Fair published a wonderful article in October 2015 speculating which tech CEOs would make the best Bond villain. Tim Cook's major Bond-villain attribute is “Forcing people to ‘upgrade’ every two years.” Elon Musk's secret weapon is a “700 mph Hyperloop ground-based transportation system/getaway platform.” Amazon's CEO Jeff Bezos can claim a “65,000-square-foot glass-domed ‘Biosphere’ currently under construction at the new Amazon headquarters in Seattle” as his lair.³⁸⁷ Although a parody, the article cleverly points out the power of the tech superstars.

Jeff Bezos wants to disrupt as many industries as he can. It is not a coincidence that he named his business Amazon rather than Books.com. He did not want to be limited to a narrow field—especially since the

printed book may become a curious relic. He famously says “your margin is my opportunity” as he enters more markets, captures huge market share while operating at low, zero, or even negative profit margins.³⁸⁸ In fact, in fiscal 2015, Amazon generated almost \$92 billion in sales (and the revenue is diversifying; the annual report describes that revenue is generated from web services, fulfillment, publishing, digital content subscriptions, advertising, and co-branded credit cards).³⁸⁹ Even so, Amazon reported an anemic 0.31% operating margin with a negative 0.44% profit margin.

The high growth/tight margin goals illuminate the employee satisfaction ratings; the almost five thousand reviews at Glassdoor.com attribute a mediocre job satisfaction score of 3.4 out of 5.³⁹⁰ The chief complaints include lack of work/life balance, forced overtime (especially during the final quarter of the year), and negative office politics caused by forced rankings.³⁹¹ Amazon meticulously measures worker productivity in the warehouse, with expectations constantly rising and older or less dextrous workers dismissed when they can't keep up. The company has also been sued for “time theft” as workers need to be scanned while leaving work (and even when travelling to and from the cafeteria), as well as for allowing warehouse temperatures to rise as high as 100 degrees Fahrenheit.³⁹² The pesky employee complaints will disappear, however, as Amazon is switching the warehouse picking work to robots driven by computer-vision and machine-learning algorithms, and sponsors contests on how to improve all aspects of robot-worker performance.³⁹³ In order to reduce the human workforce even more, Amazon plans to outsource as much delivery service as possible to drones. While it is still working out safety details with the FAA, the company has patented the process where drones deliver goods to a customer wherever they happen to be; to save the anguish of having to wait at home for an Amazon package, the customer's smartphone can send a signal to enable the drone's navigation.³⁹⁴

As the winner-takes-all economy transfers more and more wealth to the richest 1%, their taxes would need to be raised to pay for the current level of government services. Understandably, there is a lot of resistance in this group—the Silicon Valley elite have a high level of libertarianism and already strive to avoid paying their current taxes. As well, they challenge regulations that stifle their lifestyle. Some examples:

- Larry Ellison, CEO of Oracle and one of the richest men in the United States, argued with San Jose airport officials to let him land his jet at night even though it exceeded weight

restrictions. He argued that the modified jet was quieter than a lighter, conventional plane and that noise was the real issue (he later switched airports).³⁹⁵ Similarly, Ellison sued to reduce the property tax on his expansive Japanese-themed estate, arguing that it “suffered from ‘significant functional obsolescence’” and that purchasers would balk at the expense to maintain the “over improvements” and “excessive” landscaping.³⁹⁶ He argued (and won) that he should be paying property tax only on the value he could sell for, not the cost of building it to his unique tastes. Ellison also reduces his personal income tax by taking a \$1 annual salary from Oracle while funding the rest of his rock-star lifestyle by borrowing against his billions in company stock.

- Facebook co-founder (and first investor) Eduardo Saverin renounced his US citizenship shortly before the IPO, seemingly to avoid paying taxes on his new billions. Saverin was born in Brazil, his family moving to America when he was a small boy, partially because his family’s wealth had placed him on a kidnapping watch list.³⁹⁷ Did he owe anything to the country that provided him a safe childhood, a Harvard education and the infrastructure and underlying economy that made Facebook viable? Not really, it seems.
- Roger Ver or “Bitcoin Jesus” is a libertarian who was an early adopter of the digital currency. Like Saverin, he gave up his American citizenship and relocated to the Caribbean nation of St. Kitts and Nevis. Ver wanted to travel back to the United States to speak at a conference but was denied a visa; the official reason stated “you have not demonstrated that you have the ties that will compel you to return to your home country after your travel to the United States,”³⁹⁸ administrative legalese for “you can’t have it both ways, jerk.” I wasn’t there, but I imagine there was a fair amount of aggressive high fives in the visa office that day.

Libertarian Silicon Valley investor Peter Thiel backs seasteading—setting up an artificial island in international waters where people can live outside the jurisdiction of other countries—enjoying a paradise of low tax laws and the simple joys of a monkey knife fight.³⁹⁹ The proposed structure will, in a staggering coincidence, be located off the shore of San Francisco Bay close to his key investments. These freedom fighters will tell you they are not motivated by Greed, but their frustration in dealing with dowdy,

old-school government types. The new jurisdiction will operate without regulations such as minimum wage and will require far less taxes to keep it operational. Patri Friedman, grandson of the famous economist Milton, piles on, “Government is an industry with a really high barrier to entry... You basically need to win an election or a revolution to try a new one. That’s a ridiculous barrier to entry. And it’s got enormous customer lock-in. People complain about their cellphone plans that are like two years, but think of the effort that it takes to change your citizenship.”⁴⁰⁰

So where will tech-enhanced Gluttony go? Once again there is an optimistic and pessimistic view. Glass is half full — nanotechnology, 3-D printed customized medication, and enhanced food technology can improve food’s role within overall health. On the other hand, Gluttony manifested through winner-take-all economics enabled through technology can lead to a dystopian, unsustainable situation that calls into question what we mean by society.

Conclusion: Where We're Going, We Don't Need Scrolls

So does technology make us more sinful? It certainly offers more opportunity to find out about Sins, communicate, and even form communities with others who share your impure interests than past generations—you really don't know that, if given the opportunity, your great-grand uncle would not have been a Brony. Instagram, YouTube, Medium, and other platforms can make anybody a celebrity—so it is Proudful to try to make it happen? The flipside of Pride is Envy, and we can spend all day hacking at our keyboards, assessing, and trying to keep up with the digital Joneses. Technological advances may improve humanity at a meta level, but these improvements will typically impact the lives of the haves more than the have-nots.

The Internet can bring injustices to light faster, but can also intensify cruelty. Bullying among adolescents is not a new phenomenon, but there used to be a respite at the end of the school day, whereas today the online abuse continues 24/7. Technology also provides a platform for adult bullies—there are many ways for internet trolls to harass people, and many of them feel that the harassment is a justified reaction to their target's opinions or behaviour.

Clearly, technological advances impact ethics and morality—the challenge is how individuals and society can keep up with these changes. Put into perspective, most scientists believe that humans have been “anatomically modern” for 200,000 years—this means, among other things, that a baby transported from 150,000 years ago and raised today would be able to keep up with Madison and Noah in soccer and successfully learn Common Core math. It took more than 140,000 years for people to become “behaviourally modern” humans—capable of symbolic thought and language. Compare that development speed to that of today.⁴⁰¹ One hundred years ago, human flight was nascent; fifty years ago a computer would fill a room and have less power than an iPod. Today, technology develops at an exponential scale. This acceleration means that it is extremely difficult for ethics to keep up. Consider that scientists in the past had to spend years developing their crafts before they made their major breakthroughs, often at great risk to their personal safety. Author David Weinberger points out, “Darwin spent five years sailing on a small boat, Galileo defied a pope, and Madame Curie handled radioactive materials, all in pursuit of knowledge as the most profound of human goals.”⁴⁰² We’ve seen this lesson over and over in science fiction—if you innovate without the discipline and accountability to the underlying work, bad things happen. Remember: in the book version of *Jurassic Park*, everyone who played God died—they did not get to flee the island in a helicopter with their grandchildren.

During our daily lives, we generate amounts of data unimaginable even at the start of the computer age. Some of this data can be valuable—knowing our blood sugar and other medical information on a real-time basis can be life-saving, and motivations from our Fitbits might get us off the couch. On the other hand, digitizing our information makes it easy for us to be targeted by marketers or thieves, and our behavior and online journeys can be scrutinized by government officials. Technology titans and law enforcement officials plead that if you have nothing to hide, you should have nothing to be concerned about—a platitude that was invalid even before we were generating terabytes of data.

Biological innovation has the most potential to alter morality. Recall that Ray Kurzweil believes that the Singularity—the point where artificial intelligence self-improves at such a rapid pace that it eclipses human intelligence—is not far off. When we are not on top of the intellectual food chain, are we still in charge of our morality? Will the robotic overloads make decisions for us? Will we be their servants, subjects, or pets? If the latter becomes the case, and if the cyborgs provide us with our needs, will

we feel motivated to improve ourselves? Will Gluttony become obsolete if everyone has access to unlimited Soylent? What will happen to Lust if any desire can be satiated via virtual reality? Kurzweil believes in transhumanism: that human biology and robotics will combine so that the new, combined being will contain the best of both, and will be essentially immortal. Others disagree, claiming that in the best case scenario, what will be uploaded will not be someone's consciousness but only a copy of that person's neural network at one particular time. In that case, only a simulation of a person would live on. Another "catch" is that the model depends on the system never crashing or losing data.

If humanity is able to achieve Kurzweil's immortality—or, through inexpensive synthetic replacement organs and the eradication of cancer and heart disease, a greatly extended lifespan—how could our sense of mortality and self not change? Similarly, some futurists predict that easy seamless sex changes will allow gender fluidity throughout people's longer lives. If either or both of these situations come to fruition, then much of our philosophy and even our literature would become quaint, if not meaningless. Jane Austen writes about romance, gender roles, and mortality, but those subjects would be inaccessible to late twenty-first-century people in the Kurzweil universe—even with the introduction of zombies. Many people think that using artificial or animal organs to extend a human life is immoral; even more think that engineering a baby to make it "perfect" is unnatural (the movie *Gattaca* focusses on this dilemma, but even the movie's imperfect people are still Hollywood good-looking). However, looking forward, choosing not to "optimize" your fetus might seem like parental abuse since your scion will be born at a disadvantage to his enhanced classmates and could face an impossible uphill battle to compete all of his or her life.

Also, consider life in a winner-take-all society. Robots will take over just about every job that requires repetition and many that do not. With millions (or billions) of people unemployed, life for the super-rich will not be ideal. Since their king-like status is not enforced by actual bloodlines or presumed ordination, these "Masters of the Universe" will have to live in walled cities and pay an ever-increasing wage to their bodyguards to maintain their lifestyle. Even if 3-D printing, replicators, virtual reality, and artificial intelligence can house, feed, and entertain the masses, the elite will need to deal with expanding Envy and probably Wrath. It will likely take decades of nasty interactions before a new equilibrium is reached.

So what can we do about technology-fueled evil? First, we need to keep in mind that standards of good and evil are constantly in flux and that technological innovation accelerates the change. We can look for the good in technology and try to increase that side of the ledger, including bringing those benefits to people in the developing world who haven't seen it before. We can improve health care and education through individual customization. Combatting tech-fuelled crime and enforcing legislation across international boundaries will not be easy—but even if this legislation can't be perfected, it can certainly be improved. In the meantime, stay true to your morals, be good to each other, upgrade your skills, and make your passwords complicated.

Endnotes

- 1 The Tile is a Bluetooth-enabled device (about the size of bread clip) that is typically attached to commonly lost items such as keys and smartphones.
- 2 Also referred to as the Deep Web, the Invisible Web, and the Hidden Web.
- 3 Tor is a software program that enables anonymous communication. The name is an anagram referring to the Onion Network, which was the name of the original software project. Tor directs Internet traffic through a worldwide, volunteer network consisting of thousands of relays which serve to conceal a user's location and usage.
- 4 Cam girls (there are, of course, male versions as well) offer a digital version of a peep show. The performer communicates with the audience via a webcam and typically takes requests which may include nudity, sexual acts, or simply erotic talk. The performer is paid by donation or subscription fees.
- 5 As James Martin points out in his book *Drugs on the Dark Net: How Cryptomarkets are Transforming the Global Trade in Illicit Drugs*, cocaine, heroin, and other illicit substances are rated by users for quality, purity, and efficacy and are often branded like coffee containing benefits such as "fair trade," "organic," and sourced from conflict-free zones.
- 6 Cyber-weapons include "cannons" that launch distributed denial of service (DDoS) attacks. These weapons try to access a site many thousands of times per second and, in effect, shut down access to the site for legitimate visitors.
- 7 Even in a book about evil, the vilest services for sale are too grotesque to describe in detail. For readers interested in finding out more, Marc Goodman describes this phenomenon in a respectful manner in his excellent book *Future Crime*.
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- 13 The math involved here: the odds against randomly generating an 18-character phrase on a 27-character keyboard is 27¹⁸. We then divide this number by 1 million monkeys times 60 minutes per hour times 24 hours per day times 365.25 days per year, an average of five characters per word, and arrive at a result of 221,118,476,701 years. Remember, to correctly press the space bar en route to typing the "T" in "that is the question" will increase the required time by a factor of 27.
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used to determine the amount of field that the player can “cover.” While both of these statistics can be compiled historically since all the information required is available via reviewing box scores in newspapers, many new metrics are now collected. Sabrematicians are baseball fans who collect far more information than was available on old-school scoresheets and can evaluate contributions in a much greater degree and allow for situational statistics such as the count when the batter puts the ball in play and what areas of the field the ball travels to; this data allows for more complicated statistics such as Wins over Replacement and Ultimate Zone Rating. Improved technology also enables statistics such as speed of a ball leaving a bat and the number of times a pitched ball rotates en route to the plate.

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Glossary

A/B testing. A type of quantitative research with two options in which a single variable is changed and presented to a subject. For example, a website may test a slightly different shade of blue on a “buy me” button to see which is more effective.

Anonymous. A loosely connected group of hackers and hacktivists who operated on ideas rather than instructions. This group has conducted online protests as well as played complicated pranks.

Bitcoin. A decentralized digital currency that allows for peer-to-peer commerce without an intermediary such as a bank.

BRB. Internet shorthand for “be right back.”

CAPTCHA. This is an acronym for “completely automated public Turing test to tell computers and humans apart.” Typically, this shows hard-(for a computer)-to-read graphics or objects. It is used to determine that a human is interacting with a website rather than a bot.

Click farm. A business whose employees click on websites to build their traffic. This activity is misleading because the “clickers” are not actually interested in the content.

Crowdsourcing. Collecting goods and services from people rather than a typical supplier, typically via the Internet.

Deep Web. The part of the Internet that is not normally accessible via search engines; portions of the Deep Web requires specific software to access.

Doxxing. The practice of researching and publishing personal information over the Internet; typically used to harass a target.

Drone. A remote-controlled robot; usually refers to one that can fly.

Dynamic pricing. An economic principle where prices change rapidly; typically in response to changing market conditions.

FOMO. Internet short form for “fear of missing out.”

God mode. The situation where someone (typically a company insider) can view a user’s online activity. The term is also used to describe a “cheat” in video games where the player becomes invincible.

Hactivism. Breaking into computer systems or other uses of online communication for a socially or politically motivated purpose.

High-frequency trading. The process of sending (and usually retracting) multiple buy and sell orders at very fast speeds, often used to manipulate market prices.

JerkTech. Apps that monetize a good or service that was previously available to the general public for free.

Keylogging. Surveillance software that collects every keystroke on a computer; usually delivered via spyware without the permission of the person being monitored.

Lulz. Derived from LOL, Internet shorthand for “laughing out loud,” it refers to mischief (or worse) committed solely to amuse the perpetrator.

Phishing. An unethical practice that attempts to retrieve sensitive information from a target by impersonating a legitimate entity. For example, an email claiming to be from a bank that includes the bank’s logo and “look and feel.”

Reddit. A news and discussion community sometimes called “the front page of the Internet.”

Rule 34. An internet adage that declares that if something exists, there is a porn version of that thing.

Selfie Stick. A device, usually a long stick, which connects to a smartphone to improve a selfie by increasing the frame of the photo.

Silk Road. A former online community that anonymously sold (mostly illegal) products online; named after an ancient trading route.

Swatting. A type of harassment where a false emergency is called into 911; the ultimate goal is to have a SWAT team enter the domicile of a target.

Technosexual. A person with a sexual interest or attraction to robots or computers.

Teledildonics. Refers to online sexual activity where a device is controlled remotely by another person; usually combined with virtual reality.

Tinder. A dating app where people indicate interest (or disinterest) in a potential partner by swiping a smartphone screen left or right.

Transhumanism. A philosophy that explores how humans can be enhanced by technology.

Txtspk. Short form of textspeak; a process of shortening messages, typically by removing vowels or replacing numbers for letters.

Uncanny Valley. The situation where an artificially created human (for example, a computer-generated figure, a puppet, or an android) closely but not completely resembles a person. This causes unease to a viewer.

Zillow. A website that provides estimates of real estate values.

Acknowledgements

I have a lot of people to thank for helping me with this project. Top on the list is Jennifer Durlay who helped with all aspects of the book including polishing the first draft during a week in an Amsterdam Airbnb. Jeff DeChambeau deserves a great deal of credit; we came up with the concept for the book over pints, he co-authored the original outline and generously provided feedback throughout the research and writing process.

During the writing process, I put out an offer to my social network, inviting people to choose a Sin and provide edits and feedback. Warm thanks to Natalie Ambeault, Tim Bevins, Susie Buehler, Meredith Burns, Tom Casey, Steve Elmore, Gregory Grogan, Melissa Jarman, Maria Koropecy, Kristina LaRocca-Cerrone, Annie Melnik, Vitor Nobrega, Rob Salkowitz, Alexandra Sdao, Andrew Tischler. Extra props to Andrea Wood, Jim Latimer and Danny Williamson, all of whom edited multiple chapters. You all provided tremendous value as well as valuable insight into your personalities based on which Sin you chose.

I'd also like to thank all of the people who provided insights during the research and writing phase. This group of smart generous people includes Paul Barter, Joan Bigham, Mark Blayney, Andrew Cherwenka, Gabriella Coleman, Mäelle Gavet, Paul Gillespie, Ted Graham, Arnie Guha, Denis Hancock, John Heder, Jim Hedger, Richard Hollis, Sean Hutchison, Whitney Johnson, Raquel O'Halloran, Jack Lucas, Iain MacDonald, Alan Majer, Neil Pasricha, Jenna Pilgrim, Rob Quintana, Bruce Rogow, Shane Saunderson, Brad Schmidt, Michelle Shephard, Pablo Smolders, Michelle Quance, Alper Utku, and Michelle Weise. As well, special thanks to Sean Moffitt, my co-author of *Wikibrands*, for his insights and friendship.

Martin Perelmuter, Farah Perelmuter, Kelly MacDonald at Speakers' Spotlight enable me to share ideas with wonderful audiences. I love being on stage and appreciate all of the opportunities that they provide. Not only are the great business partners, but they and their entire team are fantastic people.

Of course I owe a great deal of thanks to the Humber College community. In particular, Nathan Whitlock and Eileen De Courcy at Humber Press, Amanda Lucier of Humber Publishing Services, Andrea Chan of the Centre for Teaching & Learning, and Peter Madott, Alvin Cassiani, and Alexandra Ross at the Humber Business School.

I'd also like to thank my parents Bill and Ruth, who bought about one hundred copies of my first book, and my daughter Kate who promises to actually read this one.

