

Anarchy, Status Updates, and Utopia

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Social software has a power problem.¹ Actually, it has two. The first is technical. Unlike the rule of law, the rule of software is simple and brutal: whoever controls the software makes the rules. And if power corrupts, then automatic power corrupts automatically. Facebook can drop you down the memory hole; Paypal can garnish your pay. These sovereigns of software have absolute and dictatorial control over their domains.

Is it possible to create online spaces without technical power? It is not, because of social software's second power problem. Behind technical power there is also social power. Whenever people come together through software, they must agree on which software they will use. That agreement vests technical power in whoever controls the software. Social software cannot be completely free of coercion—not without ceasing to be social, or ceasing to be software.

Rule-of-law values are worth defending in the age of software empires, but they cannot be fully embedded in the software itself. Any technical design can always be changed through an exercise of social power. Software can help by making this coercion more obvious, or by requiring more people to join together in it, but it alone cannot fully protect users. Whatever limits make social software humane, fair, and free will have to come from somewhere else—they will have to come from We the Users.

I. Technical Power

The Fifth Amendment provides that “No person shall . . . be deprived of life, liberty, or property, without due process of law.” But the Fifth Amendment doesn't apply to social software. Just ask Marc Bragg. He was a player in Second Life, where anything you can imagine can be brought to life with a little sculpting, a little painting, and a

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¹ Social software is “software that supports group interaction.” Clay Shirky, *A Group Is Its Own Worst Enemy*, CLAY SHIRKY'S WRITINGS ABOUT THE INTERNET (July 1, 2003), http://www.shirky.com/writings/group_enemy.html.

little programming.² Like many other players, Bragg wanted a parcel of virtual land to make his home. On April 30, 2006, he won a land auction, paying \$300 for a parcel named Taessot. Two days later, though, Bragg received a warning from Second Life, alleging fraud in the auction. At this point, a normal government could have taken him to court to set the sale aside. But Second life doesn't have a normal government. It rules by software. Second Life's administrators went into their database of land titles, and took Marc Bragg's name off the records for Taessot, instantly ousting him from possession and locking him out. And then, as if to prove who was boss, Second Life took away all his other land, as well—then sold it at auction to the highest bidder. So much for “property” and “due process of law.”

Or ask Vi Hart, a “recreational mathemusician”³ who creates stop-motion videos that mix obsessive doodling with whimsical soundtracks to explore mathematics in an inviting hands-on way. She posted her videos to YouTube, where she has 650,000 subscribers and millions of views.⁴ But then Google merged its Google+ social network with YouTube, requiring a Google+ account to post comments on YouTube.⁵ The move encouraged more people to use the struggling Google+, but it also displaced fans' voices in favor of “popular G+ users . . . who trolls grow up to be . . . a very small segment of mostly male, professional, egotistical, entitled people” who leave distracting and harassing comments.⁶ This put Vi Hart and everyone like her to an unpleasant choice: start using Google+ and its incoming wave of haters, or give up on YouTube entirely. As she explained,

I invested so much into my YouTube channel, and they're taking that investment and threatening to throw it away if I don't also start investing in Google+. No thank you Google, but you've already made me regret investing so much into you the first time. Do you really think I'm going to do it again? . . .

Making huge forced changes to a platform is problematic for people whose livelihood depends on certain things being a certain way. I would not recommend making YouTube or Google+ a large part of your business

² These facts are taken from the complaint in *Bragg v. Linden Research, Inc.* (Pa. Ct. Comm. Pleas complaint filed Oct. 4, 2006).

³ Kenneth Chang, *Bending and Stretching Classroom Lessons to Make Math Inspire*, N.Y. TIMES, Jan. 17, 2011, at D3.

⁴ *Vi Hart*, YOUTUBE, <http://www.youtube.com/user/Vihart/videos>.

⁵ Nundu Janakiram and Yonatan Zunger, *We Hear You: Better Commenting Coming to YouTube*, YOUTUBE OFFICIAL BLOG (Sept. 24, 2013), <http://youtube-global.blogspot.com/2013/09/youtube-new-comments.html>.

⁶ [Hank Green], HANK'S TUMBLR (Nov. 8, 2013), <http://edwardspoonhands.com/post/66425515182/ok-so-my-friend-emma-puts-this-video-of-her>.

Or take Mailpile. a project to create a “modern, fast web-mail client with user-friendly encryption and privacy features.”⁷ It carried out an online fundraiser, bringing in \$163,192 and 54 Bitcoins.⁸ But \$45,000 of those donations came through PayPal, which froze the money, refusing to let Mailpile have it until the developers provided “an itemized budget and your development goal dates for your project.”⁹ Only after massive online bad publicity did PayPal release the funds.¹⁰ Paypal has a “long history of similar things”:¹¹ it has blocked fundraisers for WikiLeaks¹² and Bradley Manning.¹³

This is not the place to relitigate these cases. But even calling them “cases” is a misnomer. In the first instance—before Bragg, Hart, and Mailpile were deprived of their their rights and privileges within Second Life, YouTube, PayPal—there was no litigation at all. The companies simply modified the software on which their platforms ran, and that was it: Bragg’s land was gone, Hart was dealing with Google+ boors, Mailpile’s money was inaccessible.

They were all victims of *technical power*: the authority exercised over any software-mediated space by the person or entity that controls the software. Code is law, and the platform operator controls the code. A few tweaks to settings in a database can banish a user, or silence her, or confiscate all her digital goods. Virtual worlds, social networks, and payment processors hold technical power. So do ISPs like Comcast, web hosts like Tumblr, and the millions of other service providers who run the systems on which the Internet runs.

Technical power gives rise to a distinctive anxiety: the *God problem*. The exercise of legal power, no matter how dictatorial, is restrained by the fact that any legal threats must be carried out by humans, fallible humans. They can be bribed, reasoned with, seduced, overwhelmed, or distracted. Legal power can be resisted, passively or violently. But technical power cannot: those who wield it are as gods. PayPal changed a status field in the database entry corresponding to Mailpile’s account and that was

⁷ MAILPILE, <http://www.mailpile.is>.

⁸ *Id.*; see also *Mailpile - Taking E-mail Back*, INDIEGOGO, <http://www.indiegogo.com/projects/mailpile-taking-e-mail-back>.

⁹ Brennan, *PayPal Freezes Campaign Funds*, MAILPILE (Sept. 5, 2013), http://www.mailpile.is/blog/2013-09-05_PayPal_Freezes_Campaign_Funds.html.

¹⁰ See Mike Masnick, *Insanity: PayPal Freezes Mailpile's Account, Demands Excessive Info To Get Access*, TECHDIRT (Sept. 5, 2013), <http://www.techdirt.com/articles/20130905/08233824411/insanity-paypal-freezes-mailpiles-account-demands-excessive-info-to-get-access.shtml>.

¹¹ *Id.*

¹² See Kevin Poulsen, *PayPal Freezes WikiLeaks Account*, WIRED THREAT LEVEL (Dec. 4, 2010), <http://www.wired.com/threatlevel/2010/12/paypal-wikileaks/>.

¹³ See Bradley Manning Supported Network, *PayPal Cuts Service to Courage to Resist, Bradley Manning Support*, COURAGE TO RESIST (Feb. 24, 2011), archived at <http://streamsofwikileaks.tumblr.com/post/3479677128/courage-to-resist-paypal-cuts-service-to-courage-to>.

that: Mailpile's money was beyond its reach. Google combined Google+ and YouTube overnight, without so much as a hearing or a notice in the Federal Register. Second Life foreclosed on Taessot and ousted Bragg from possession with a few key-strokes; mortgage lenders can only dream of such remedies. These software monarchs have metaphysical jurisdiction over their domains—absolute control over what happens, over what exists.¹⁴

II. The Cheers Problem

But focusing on technical power raises its own question: why didn't Marc Bragg and Mailpile head for the exit when things got bad, the way Vi Hart did? Yes, Second Life and PayPal changed the way their systems worked. But so what? Database entries only matter if they control your access to something that matters in the real world. Technical power only has bit to the extent you use a software system; walk away from the keyboard and the software can't follow.

To understand where this argument goes wrong, consider what it suggests for our disappointed victims of technical power. Marc Bragg didn't need Second Life: he could have drawn a picture of Taessot on a napkin and continued to enjoy his imaginary property. And Mailpile didn't need PayPal; it could have drawn pictures of Benjamin Franklin on napkins and used those. You don't need Facebook; just take a Sharpie to your living-room wall. You don't need YouTube for cute cat videos; just film your own damn cat.

These suggestions are so unsatisfying because they miss the inherently social nature of social software. The fun, and the value, of these systems comes from sharing them with others. YouTube's other users provide me with better cat videos than I could film for myself; Facebook tells me what my friends are actually up to, not just what I imagine they're up to. Countless online journalists use social platforms to publish their work. Virtual property in Second Life, like a domain name or like a LinkedIn account, is valuable in only because it's networked. To withdraw from the network in which the property is embedded is to give up something of real value, however virtual the property itself may be. (Mailpile's frozen funds on PayPal are no more real, and no less, than any other form of money.)

This, then, is a point about *social power*: the authority enjoyed over any commu-

¹⁴ For discussions of technical power in virtual worlds, see JULIAN DIBBELL, *MY TINY LIFE: CRIME AND PASSION IN A VIRTUAL WORLD* (1999); GREG LASTOWKA, *VIRTUAL JUSTICE* (2011); Joshua A.T. Fairfield, *The God Paradox*, 89 B.U. L. REV. 1017 (2009); James Grimmelmann, *Virtual World Feudalism*, 118 YALE L.J. POCKET PART 126 (2009); James Grimmelmann, *Virtual Power Politics*, in *THE STATE OF PLAY: LAW, GAMES, AND VIRTUAL WORLDS* (Jack M. Balkin & Beth S. Noveck eds. 2006); James T.L. Grimmelmann, *Virtual Worlds as Comparative Law*, 49 N.Y. L. SCH. L. REV. 147 (2004); Jennifer Mnookin, *Virtual(l)y Law: The Emergence of Law in LambdaMOO*, 2 J. COMPUTER MEDIATED COMM. (1996); Nicolas Suzor, *The Role of the Rule of Law in Virtual Communities*, 25 BERK. TECH. L.J. 1817 (2010).

nity by the person or entity who controls the terms on which the community comes together. The threat to boot you from YouTube if you don't accept Google+ comments isn't just about cat videos: it's also about the people who make and watch those cat videos. The threat to boot you off of a mailing list isn't just about the emails; it's about your access to the other people on the mailing list. The threat to boot you from eBay isn't just about the stars next to your name; it's about the community of people who know what those stars mean, who give those stars their meaning.

Facebook, for example, has a privacy problem the way alcoholics have sobriety problems. But it is Facebook's users who enable its addiction to personal information. Facebook's software exists in a constant state of flux; the user community built around that software is the source of stability. Each time Facebook redesigns its sharing settings to be more profligate with users' private lives, it subjects them to its technical power. Each time users swallow hard and keep on using Facebook because their friends are there, they subject each other to their social power. They are trapped in a dysfunctional codependent relationship with Facebook—and with each other.

This is the *Cheers problem*: you want to go where everybody knows your name. Leaving a social software platform means leaving a social network. Whoever controls that network has you locked in. It's extraordinarily difficult for any individual user in a truly social medium to exercise her exit option to escape policies she considers oppressive without giving up all the benefits of being in the same place as the rest of her social circle. This too is a form of power: if no one wants to be the first to leave, then no one will leave. Whoever controls the agenda by which the community settles on the software it will use—like Facebook's programmers pushing out an "improvement" to its "privacy" controls—can take advantage of this social power to confer technical power on themselves. Wherever there is a software platform, there will be the potential for abuse. Technical power is inescapable because it is inescapably social.

III. Anarchy

There is no way to redesign the technologies of social software so that technical power disappears, for the reason that it is the social power that gives the technical power its bite.¹⁵ We think of social software as being "social" because it enables social connections among users. But it is also "social" because it is socially constructed. If I use a drawing program to draw doodles for my own amusement, no one else cares what software I use. But you and I want to share our Doodles, we need to agree on which software to use, which requires us to agree on what that software *is*. It does no good for me to post to doodle.ly while you are watching Madoodle, not if we want to see each others' work. Sharing a social medium requires running the same software. But

¹⁵ For historical documentation of arguments for and against embedding anarchist and libertarian values in software, see generally CRYPTO ANARCHY, CYBERSTATES, AND PIRATE UTOPIAS (Peter Ludlow ed. 2001) (collecting essays).

it is this agreement—to interoperate at a technical level—that creates the possibility for technical power.¹⁶

Because it is rooted in human agreement rather than in any specific details of software, technical power can be surprisingly tenacious. What makes Facebook the Facebook we know and love-hate? It's not just Facebook the company and its control over a server farm and a domain name. Facebook is also Facebook because its users choose to type “facebook.com” into their browsers—that is, to converge and coordinate on the Facebook software-mediated community.

Even systems specifically designed to escape technical power run afoul of social power. Take Diaspora. Diaspora is a peer-to-peer social network platform explicitly founded as an alternative to Facebook. It allows (and encourages) users to host their own Diaspora servers, or “pods,” and gives them the software under a free software license so they can configure their pods as they wish.¹⁷ Its developers explain, “Like the Internet itself, Diaspora isn't housed in any one place, and it's not controlled by any one entity (including us).”¹⁸

What makes Diaspora a coherent community? Not the control over Diaspora's servers by one company, but rather the agreement to run a common set of software, with common protocols that interoperate in particular ways. And so there is technical power here, too. It resides in the current configuration of the Diaspora protocols and the commonly-used software, and it flows from the practical ability to push an “upgrade” out to a user community that will agree to run it.

Or take Reddit. This “place friendly to thought, relationships, arguments, and to those that wish to challenge those genres” has what seems like a gold-plated exit option to preserve user freedom.¹⁹ Any user (“redditor”) can create a new section of the site (“subreddit”), automatically becoming its new moderator²⁰ and establishing its rules.²¹ But the tale of its politics subreddit (“/r/politics”) shows why that option is often unsatisfying.

/r/politiics has over three million readers, and some of them became concerned in November 2013 about what they saw as the rightward political slant of the moder-

¹⁶ For further discussion of the link between interoperability and power on the Internet, see generally JONATHAN ZITTRAIN, *THE FUTURE OF THE INTERNET—AND HOW TO STOP IT* (2008); LAWRENCE LESSIG, *CODE AND OTHER LAWS OF CYBERSPACE* (1999).

¹⁷ See *Notes on Installing and Running Diaspora*, GITHUB (last viewed Mar. 8, 2012), <https://github.com/diaspora/diaspora/wiki/Notes-on-Installing-and-Running-Diaspora>.

¹⁸ Dan [Grippi] et al., *Diaspora* Means a Brighter Future for Us All*, THE DIASPORA PROJECT (Sept. 21, 2011), <http://blog.diasporafoundation.org/2011/09/21/diaspora-means-a-brighter-future-for-all-of-us.html>.

¹⁹ *About Reddit*, REDDIT, <http://www.reddit.com/about/> (quoting Dapper77).

²⁰ See *Frequently Asked Questions*, REDDIT, <http://www.reddit.com/wiki/faq> (“If you create a subreddit you will automatically become its moderator. . .”).

²¹ *Id.* (“[M]oderators are free to run their subreddits however they so choose . . .”).

ators. The moderators kept a list of “banned domains” that produced “sensationalist titles” and “bad journalism”—a list that ended up including *Salon*, the *Huffington Post*, and *Mother Jones*.²² In explaining why dissatisfied redactors didn’t simply depart for a more left-leaning political subreddit, one journalist and redditor wrote:

First, let's remember what's at stake here: a vibrant community of three million subscribers. So “start another reddit” is not a fair response to redactors who already built this community over most of a decade, only to watch it taken over and locked down by amateur dictators.²³

What made /r/politics worth fighting over—that “vibrant community of three million subscribers”—is also what made the fight necessary. The great value of a subreddit is that redditors are talking to each other rather than to themselves; split the community and you hurt it. But once you have a single community, someone has to be the moderator, and that someone has the power to determine which publications end up on the “banned” list.

Not even Bitcoin, the libertarian peer-to-peer electronic currency “designed to allow people to buy and sell without centralized control by banks or governments,” can escape from the problem of social power wielded through technical means.²⁴ Consider, carefully, how Bitcoin works. The global log of transactions is jointly maintained by users’ computers, with distributed cryptographic cross-checking substituting for centralized anti-forgery controls. The supply of Bitcoins is controlled by a function embedded in the cryptographic protocols, not by a single authority with the power to confiscate them or to make more.

But where do Bitcoin’s cryptographic rules come from? Not from the mysterious “Satoshi Nakamoto” who originally designed the protocol. Rather, as a practical fact, Bitcoin’s rules come from its users’ agreement to use specific compatible software, and from their agreement about which transactions have actually happened. Get enough users to agree on a different set of transactions and those transactions become the new Bitcoin reality.²⁵ This isn’t just a theoretical possibility. In March of 2013, users running different versions of the Bitcoin software disagreed on whether

²² See Will Oremus, *Reddit Moderators Apologize for Handling of “Bad Journalism” Ban*, SLATE (Nov. 1, 2013), http://www.slate.com/blogs/future_tense/2013/11/01/reddit_politics_r_politics_mods_ban_mother_jones_others_for_bad_journalism.html.

²³ P.J. Vogt, *What It’s Like When Redditors Ban Your Interview About Redditors’ Content Bans*, TLDR (Nov. 1, 2013), <http://www.onthemedialog.org/story/what-its-when-redditors-ban-your-interview-about-reddits-content-bans/> (quoting Angela Motorman).

²⁴ Thomas Lowenthal, *Bitcoin: Inside the Encrypted, Peer-to-Peer Digital Currency*, ARS TECHNICA (June 8, 2011), <http://arstechnica.com/tech-policy/news/2011/06/bitcoin-inside-the-encrypted-peer-to-peer-currency.ars>. See generally Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS J. SCI. & TECH. 159 (2012).

²⁵ See Ittay Eyal and Gün Sirer, *Majority Is Not Enough: Bitcoin Mining Is Vulnerable* (draft Nov. 4, 2013), <http://arxiv.org/pdf/1311.0243v2.pdf>.

certain transactions had taken place.²⁶ To resolve the disagreement, some developers tried to “convince a majority of the network’s miners to voluntarily downgrade their software.”²⁷ It worked.²⁸ Smaller forks happen all the time; indeed, the Bitcoin protocol’s stability explicitly depends on community consensus to resolve them.²⁹

That’s social power, and once again it creates technical power. If 99% of Bitcoin users agree that they need to update their software to deal with a bug, and that update requires rolling back a day’s worth of transactions, then the 1% of Bitcoin day traders who made a killing on that day have just lost out to the others. They can update their own software and wipe out the day’s gains; if they do not, their Bitcoins will be worthless because there will be no one to trade them with. Bitcoin has no coercive *central* banker, but it does have a coercive *global* banker embedded in the software, chosen by the mass of users.

Thus, while the God problem—the unilateral exercise of technical power—is immediately dramatic, it exists because of the Cheers problem—the social lock-in from agreeing to use a common social software platform. We can never completely get rid of technical power, and we can never make exit from any of these platforms completely costless. To join a platform is to commit to its user community, and since technical change over time is inevitable, it means also committing to those technical decisions the community will make and that you will have to live with. The social is technical, the technical is social, and both are always and forever political.³⁰ Perfectly libertarian social software *does not exist*.

IV. State

All is not lost. Is it possible to design software that makes it harder to misuse technical power. Harder, not impossible, but that is still something. The heart of social power is in the consensus to use particular software with a particular design. Technical decisions cannot thwart a group of users who have reached consensus from putting it

²⁶ Timothy B. Lee, *Major Glitch in Bitcoin Network Sparks Sell-Off; Price Temporarily Falls 23%*, ARS TECHNICA (Mar. 12, 2013), <http://arstechnica.com/business/2013/03/major-glitch-in-bitcoin-network-sparks-sell-off-price-temporarily-falls-23/> (“A block was produced that the latest version of the Bitcoin software, version 0.8, recognized as valid but that nodes still running version 0.7 or earlier rejected.”).

²⁷ *Id.*

²⁸ See Neil Fincham, *What the Fork Was That? A Forking Post Mortem*, MINE FOREMAN (Mar. 14, 2013), <http://mineforeman.com/2013/03/14/what-the-fork-was-that-a-forking-post-mortem/>.

²⁹ See Ed Felten, *Bitcoin Isn’t So Broken After All*, FREEDOM TO TINKER (Nov. 7, 2013), <https://freedom-to-tinker.com/blog/felten/bitcoin-isnt-so-broken-after-all/>.

³⁰ Further canonical discussions of the power and limits of exit options on the Internet include Neil Weinstock Netanel, *Cyberspace Self-Governance: A Skeptical View from Democratic Theory*, 88 CAL. L. REV. 395 (2000); David G. Post, *Against ‘Against Cyberanarchy’*, 17 BERK. TECH. L.J. 1365 (2002); David R. Johnson and David G. Post, *Law and Borders: The Rise of Law in Cyberspace*, 48 STAN. L. REV. 1367 (1996); David G. Post, *Anarchy, State, and the Internet*, J. ONLINE L. art. 3 (1995).

into place—but can influence the agenda by which the group makes its decision on which software to use.

A simple example is it that it matters whether changes to the software can be made unilaterally by a single actor, or require coordinated action by individual users. Facebook, for example, has immense agenda-setting power because it can simply update the software on its servers, automatically changing the “Facebook” experience for everyone. Diaspora is not immune from software change, but making a change requires persuading a critical mass of users to switch, since each user must make an individual decision to upgrade. This doesn’t stop a majority of users from forcing an unwilling minority to upgrade or quit—but it is harder to persuade a majority of users to go along with anything than it is to persuade one individual. On Diaspora, the sheer force of social inertia protects users.

At first glance, it seems as though we could protect users through an extension of this technique, by locking a specific design in place for all time and giving *no one at all* the ability to modify the software. Unfortunately, this approach—get the software right and then never change it—does not work, because technical power is secondary to social power. Software is not self-executing, so if people agree to discard a piece of software, no safeguards embedded in it will do any good. The parties to a contract can rescind it; the partners in a partnership can dissolve it; the users of software can replace it.

There are also strong practical reasons not to freeze code forever. Software is buggy. If Facebook crashes every thirty-five minutes because of a race condition in a database serialization routine, then while leaving it unfixed is an option, it’s not a good option. We want someone to be able to fix bugs. If Bitcoin’s current implementations can only process seven transactions a second, we want to be able to upgrade the protocol’s capacity.³¹ But once we admit of that possibility, what counts as a “bug” and what counts as a “feature” is necessarily in the eye of the beholder. Marc Bragg—according to Second Life—took advantage of just such a bug in its software to place early and artificially low bids for virtual land.. Leaving that bug unfixed could have broken the land-auction process for everyone else. But a Second Life that can roll back botched land auctions is a Second Life that can confiscate Bragg’s property without a hearing. The same goes for disagreements over how Bitcoin’s blockchain protocol should operate, or how to weight redditors’ votes when moderating comments: the necessity of change creates the possibility of oppression. Software is a human construct, made for social purposes; there is no such thing as perfect software, any more than there is a perfect human or a perfect society.

Put another way, even software that never changes still creates technical power.

³¹ See Timothy B. Lee, *Bitcoin Needs to Scale by a Factor of 1000 to Compete with Visa. Here’s How to Do It.*, THE SWITCH (Nov. 12, 2013), <http://www.washingtonpost.com/blogs/the-switch/wp/2013/11/12/bitcoin-needs-to-scale-by-a-factor-of-1000-to-compete-with-visa-heres-how-to-do-it/>.

It freezes a specific set of rules and power relations in place for all time, favoring some tasks and users over others. An electronic stock exchange that executes trades in the order received favors whoever can shave the most microseconds off the time it takes their sell instructions to arrive.³² An Internet on which anonymity is easy and unmasking is hard favors harassers over victims.³³ Those who come out ahead under those rules may be disinclined to notice the technical power sustaining their advantages, but the power, and the advantages, are still there. The computational is political.³⁴

We return, therefore, to partial techniques that moderate power rather than eliminate it. One is that having smaller communities with more competition among them makes it easier for users to threaten to leave. The proliferation of subreddits makes redditors' threat to start their own more credible. The moderators of /r/politics still have technical and social power over it; those who depart still give something up. But they give up less than those who jump ship from Facebook do; the hurdles they must jump are lower. The design of Reddit doesn't prevent the moderators of a subreddit from behaving atrociously; it just makes it harder to force users to hold still while they do.

To generalize, distributed systems disperse social power; centralized systems concentrate it. While the nature of social software means that no technical design can eliminate the need for agreement on some aspects of the design, some designs require greater agreement than others. Facebook is a tightly coupled software system; five hundred million users experience it through exactly the same server software. All five hundred million must agree on what "Facebook" is, which gives Facebook enormous, concentrated power. But other social-software systems are less tightly coupled; they are more tolerant of the possibility that some people's experiences will be inconsistent, even incompatible. Factoring web discussions among into Digg, Reddit, Slashdot, Metafilter, and a million others means that it is no longer necessary for each to have the same software-imposed rules as the others. So does factoring Reddit into subreddits, each with its own moderators and rules. This technical modularity creates social modularity: fewer people need to agree on what "Pinterest" or "Tumblr" is than on what "Facebook" is. Reducing the need for agreement on each platform then reduces the degree of technical power that each platform possesses over its users.

³² See Jerry Adler, *Raging Bulls: How Wall Street Got Addicted to Light-Speed Trading*, WIRED (Sept. 2012).

³³ See Bryan H. Choi, *The Anonymous Internet*, 72 MD. L. REV. 501 (2013); James Grimmelman, *The Unmasking Option*, 87 DENV. L. REV. ONLINE 23 (2010).

³⁴ For discussion of the inevitability of contested decisions embedded in software, see Jay P. Kesan and Rajiv C. Shah, *Setting Software Defaults: Perspectives from Law, Computer Science, and Behavioral Economics*, 82 NOTRE DAME L. REV. 583 (2006); Clay Shirky, *Social Software and the Politics of Groups*, CLAY SHIRKY'S WRITINGS ABOUT THE INTERNET (Mar. 9, 2003), http://shirky.com/writings/group_politics.html;

But dispersion comes at a distinctive cost: fragmentation. It was harder to travel from Antioch to London after the collapse of the Roman Empire; the conversation about a photograph splinters as it crosses from one site to another. Conversations on /r/liberal and /r/conservative and /r/neutralpolitics take place in substantial isolation from each other. There will always be a tradeoff between freedom and interoperability in social software systems.³⁵ And note carefully, the technical power is not gone. It has simply been placed in more hands: a million mayors instead of a lone emperor. The moderators of /r/anarchism (43,958 readers) enjoy the same kind of technical power as the moderators of /r/politics (3,112,684 readers). And, if /r/postleftanarchism (582 readers) is to be believed, they have abused it.³⁶ A mailing list moderator exercises the power to decide which messages she will forward to the list and which messages she will block, just as Facebook does. A piranha's teeth are as sharp as a shark's.

Another technique for checking technical power, so frequently mentioned that it needs little elaboration, is transparency. The EdgeRank algorithms Facebook uses to decide which stories to show to users are proprietary, secret, and inscrutable. It is hard to detect censorship on Facebook and even harder to prove. PayPal, at least, cannot freeze a user's account without the freeze being obvious to the user—and thus open to public challenge. Bitcoin's open-source implementation makes it accessible to users what the protocol does and does not do. This fact does not prevent one group of users from insisting on a change that hurts others, but it does make it harder: the consequences of a proposed change are visible in the proffered source code, which makes it easier to mobilize resistance.

V. Utopia

Technical power is dangerous because it can be abused, not because it is bad in itself. Facebook couldn't "give people the power to share" without software and the technical power that comes with it. PayPal, Second Life, Reddit, Bitcoin, YouTube, and all the other social software platforms that enrich online life use technical power to do great things for users.

Rather, the fundamental problem with technical power is that it is unconstrained by the rule of law.³⁷ For while software itself can be almost perfectly rule-

³⁵ On scale tradeoffs in Internet communities, see James Grimmelman, *The Internet Is a Semicommons*, 78 *FORDHAM L. REV.* 2799 (2010).

³⁶ See /r/postleftanarchism, REDDIT (last visited Nov. 8, 2013) ("This subreddit is for Anarchists who do not feel represented by /r/anarchism, because /r/anarchism is filled with leftist moderators who will ban you if you dare to make a statement that could be interpreted as 'oppressive'."

³⁷ Discussions of software and the rule of law can be found in Danielle Keats Citron, *Technological Due Process*, 85 *WASH. U. L. REV.* 1249 (2007); James Grimmelman, *Sealand, HavenCo, and the Rule of Law*, 2012 *U. ILL. L. REV.* 405; James Grimmelman, Note, *Regulation by Software*, 114 *YALE L.J.* 1719 (2005); Michael Risch, *Virtual Rule of Law*, 112 *W. VA. L. REV.* 1 (2009).

like—automatic, precise, consistent, and utterly indefatigable—there is no way to make similar guarantees about the people who create the software.

It's deeply undemocratic, for example, for a government to make new rules in secret and impose them without warning or a chance to be heard. And yet, that's exactly what happens when a platform owner pushes out a new version of its software that takes away a feature users had come to take for granted. The handheld Nintendo 3DS comes with a stylus and a touchscreen; users could run the Swapnote program to “create handwritten notes and then share those notes with other Swapnote users . . . from across the room . . . or across the world.”³⁸ But when Nintendo decided that some were using Swapnote to “exchange offensive material,” it disabled the feature.³⁹ No consultation, no vote, no warning, no appeal, no refund. Technical power can be wielded without any of the checks and balances that apply in any democracy worth its salt.

The rule of law is a characteristic of a social institution, not of a technology. When software treats users fairly, it is because the programmers and sysadmins behind it are committed to treating users fairly. Those commitments don't just happen. They arise when the programmers care about making their online spaces vibrant, safe, fair, and just, and they care when users care. Some sysadmins will share users' values and act on them; others will be afraid of what will happen if they don't. But either way, the culture of the rule of law must come from users. The users are the relevant political community entitled to make policy for themselves. They are the ones who can hold platform providers truly accountable. They are the ones who truly understand the norms and values of their communities. They are the ones with a deep and personal stake in the success of those communities. They are the ones in a position to weigh the costs and the benefits to their community of different rules: to decide, for example, whether the platform should be relatively more tolerant of wide-ranging debate or relatively more protective of its users from abuse.

In the end, following extensive debate within /r/politics, its moderators apologized, added a FAQ, and reopened consideration of each and every banned domain.⁴⁰ Whether you see them as foiled right-wing plotters or as overworked public servants, the debates that led them to change course look like deliberative democracy in action.⁴¹ If the essence of the rule of law is that the government has guns and doesn't use them, /r/politics comes off looking good, after a few missteps. Whether by force

³⁸ *What Is Swapnote?*, NINTENDO, <http://swapnote.nintendo.com>.

³⁹ *Notice About Service for Nintendo 3DS Software Swapnote*, NINTENDO (Oct. 31, 2013), http://www.nintendo.com/whatsnew/detail/UHQZFP2Jxcll_Vm-PsZpxNIK5920bRRK.

⁴⁰ See Oremus, *Reddit Moderators Apologize*, *supra* note ____.

⁴¹ On online spaces as deliberative communities, see A. Michael Froomkin, *Habermas@discourse.net*, 116 HARV. L. REV. 749 (2003); James Grimmelmann, *Virtual Borders: The Interdependence of Real and Virtual Worlds*, FIRST MONDAY (Feb. 2006).

or by force of argument, its moderators were persuaded not to use the technical power everyone agreed they possessed.⁴²

One last example. In 2007, Digg users repeatedly posted a 32-digit hexadecimal number—an encryption key for HD-DVDs. Digg's administrators initially complied with DMCA takedown notices from the Motion Picture Association of America, which sparked an outcry from Digg users. After a long night of the soul, Digg co-founder Kevin Rose posted a note:

But now, after seeing hundreds of stories and reading thousands of comments, you've made it clear. You'd rather see Digg go down fighting than bow down to a bigger company. We hear you, and effective immediately we won't delete stories or comments containing the code and will deal with whatever the consequences might be.⁴³

In the end, the MPAA quietly backed down. The moral of the story is not that Digg's software worked, but that its politics worked. Right or wrong, its users collectively made a decision and acted on it.

What Digg and Reddit had that PayPal and YouTube lacked was not just a conscientious administrator in a position of power, but also a user community that cared about how that power was wielded. The values that good administrators act on are the values of their communities. Good administrators online, like good governments offline, explain their policies; they give fair warning whenever possible; they seek comments and feedback on changes. And they are ultimately accountable to those they serve. The technical power is still there but its use is checked, less visibly and less formally, by the social power behind it.

The rule of law will come to social software when We the Users insist on it.

⁴² For an argument that social-software-mediated groups are always engaged in a project of self-definition via debate, see Shirky, *A Group is Its Own Worst Enemy*, *supra* note ____.

⁴³ Kevin Rose, *Digg This: 09-f9-11-02-9d-74-e3-5b-d8-41-56-c5-63-56-88-c0*, DIGG THE BLOG (May 1, 2007), archived at <http://web.archive.org/web/20070504054516/http://blog.digg.com/?p=74>.