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Abstract

The article considers several working anarchies in the networked environment, and whether they offer a model for improving on the persistent imperfections of markets and states. I explore whether these efforts of peer mutualism in fact offer a sufficient range of capabilities to present a meaningful degree of freedom to those who rely on the capabilities it affords, and whether these practices in fact remain sufficiently nonhierarchical to offer a meaningful space of noncoercive interactions. The real utopias I observe here are perfect on neither dimension. Internally, hierarchy and power reappear, to some extent and in some projects, although they are quite different than the hierarchy of government or corporate organization. Externally, there are some spectacular successes, some failures to thrive, and many ambiguous successes. In all, present experience supports neither triumphalism nor defeatism in the utopian project. Peer models do work, and they do provide a degree of freedom in the capabilities they provide. But there is no inexorable path to greater freedom through voluntary open collaboration. There is a good deal of uncertainty and muddling through. The last part of the article suggests a theory of freedom that supports the significance of even these obviously imperfect peer systems with incomplete coverage of necessary human capabilities, and explains why expanding the domain of mutualism improves freedom and well-being under conditions of persistent market imperfection and an inevitably fallible state. Peer mutualism doesn't have to be perfect; it merely needs to offer a new dimension or sufficient diversity in how it

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instantiates capabilities and transmits power to offer us, who inhabit the systems that these peer systems perturb, a degree of freedom.

Keywords

Information technology, peer production, open source, mutualism

“The most significant difference between political thought inside the digirati and outside it is that in the network society, anarchism (or more properly, anti-possessive individualism) is a viable political philosophy.”

Eben Moglen, “Anarchism Triumphant: Free Software and the Death of Copyright,” *First Monday* (August 1999).

Introduction

Commons-based peer production has come to play a large role in the construction of the networked environment, networked culture, and the networked social order. Nonproprietary, voluntaristic, self-organized practices account for standard-setting for the Internet itself, development of some of the core software utilities that run the Web, as well as, increasingly, operating systems of servers, smartphones, and embedded computing; enterprise software; content management systems, and even statistics packages rely on free and open source software. The basic infrastructure for our synthesized “state of knowledge,” our age’s Encyclopedia, is some combination of Wikipedia and the Google search, itself an amalgamation of information produced by both traditional models and new, distributed, nonproprietary models of cooperation. Over the course of the first decade of the twenty-first century, commons-based peer production has moved from being ignored, through being mocked, feared, and regarded as an exception or intellectual quirk, to finally becoming a normal and indispensable part of life.

The experience of the last two decades with networked peer models moderates one doubt, and raises two major questions. The doubt alleviated concerns the feasibility of sustained, large-scale cooperation in the absence of property or hierarchy. The experience of the last decade offers substantial existence proof that nonproprietary voluntaristic cooperation can create outputs whose production was previously thought to require hierarchical state or corporate organization, anchored in proprietary control over the resources necessary for, and products of, human action. Instead, we now have extensive experience with successful peer mutualism: voluntaristic cooperation that does not depend on exclusive proprietary control or command relations as among the cooperators, and in many instances not even as common defense for the cooperators against nonparticipants. The actual observed practicability and sustainability of such practices, in turn, raise two core questions. First, there is the internal question of

whether these models can sustain their nonhierarchical, noncoercive model once they grow and mature, or whether power relations generally, and in particular whether systematically institutionalized power: hierarchy, property, or both, reemerges in these associations. The second question is whether those practices we do see provide a pathway for substantial expansion of the domains of life that can be lived in voluntaristic association, rather than within the strictures of state and hierarchical systems. In other words, do mutualistic associations offer enough of a solution space, to provisioning a sufficient range of the capabilities we require for human flourishing, to provide a meaningful alternative model to the state and the market across a significant range of human needs and activities?

The “real utopian” proposal outlined by raising these questions is that we will provide for ourselves a substantial range of the capabilities we require as human beings through peer production, or mutualistic voluntary association, and by doing so loosen the power that states and corporate enterprises exercise in society through their power over these basic capabilities. Whether it is in technological platforms—such as user-created Wi-Fi networks or user-created cloud and privacy-protecting networks; whether it is meeting development goals, like open textbooks or open source seed development; or whether it is transparency and monitoring of government itself, like efforts at distributed citizen monitoring. These practices would ideally produce four effects. First, they offer their participants a chunk of life lived in effective, voluntary cooperation with others. Second, they can provide for everyone a degree of freedom in a system otherwise occupied by state- and property-based capabilities; they do not normally displace these other systems, but they do offer a dimension along which, at least for that capability and its dependencies, we are not fully subject to power transmitted through either direct state control or the property system. Third, they provide a context for the development of virtue; or the development of a cooperative human practice, for ourselves and with each other. And fourth, they provide a new way of imagining who we are, and who we can be; a cluster of practices that allow us to experience and observe ourselves as cooperative beings, capable of mutual aid, friendship, and generosity, rather than as the utility-seeking, self-interested creatures that have occupied so much of our imagination from Hobbes to the neoclassical models whose cramped vision governs so much of our lives.

The theory of human freedom underlying this proposal is that we are all located in imperfect systems of constraint and affordance—systems that allow us to exercise power over others—but for most people, most of the time, systems that transmit the power of others in ways that constrain our own freedom. There is no perfect institutional optimization of freedom. Neither free markets nor a perfect liberal state, no ideal speech situation nor perfect community spirit can promise an optimal level of freedom for beings who exist, and can only act and be, as we do and are, within multiple systems that constrain our freedom even as they enable us to define and pursue our life plan. For beings such as we are, it is not an optimal system of freedom, but rather the redundancy of multiple pathways to perceive the world, develop principles, preferences, and policies, pursue actions, and obtain outcomes that provides us with

greater or lesser degrees of freedom. Because peer production practices and functioning mutualistic associations operate in ways that are orthogonal to both state-based and capital-based systems, they offer a new dimension of available systems. It is not necessarily an inherent advantage that these systems have as instances of free association that is critical; it is the discontinuity between these systems—state, corporate, and traditional social—that typified the industrial economy. The critical contribution of these cooperative systems is the fact that they offer a degree of freedom, in the engineering sense, in the design of human systems.

The first part will consider several working anarchies, functioning or developing. For each of these, I explore the two questions: the internal—is hierarchy reemerging? and the external—is the domain covered by this practice significant enough to offer a degree of freedom to those who rely on the capabilities it affords? The real utopias I observe here are perfect on neither dimension. Internally, hierarchy and power reappear, to some extent and in some projects, although they are quite different than the hierarchy of government or corporate organization. Externally, there are some spectacular successes, some failures to thrive, and many ambiguous successes. In all, present experience supports neither triumphalism nor defeatism in the utopian project. Peer models do work, and they do provide a degree of freedom in the capabilities they provide. But there is no inexorable path to greater freedom through voluntary open collaboration. There is a good deal of uncertainty and muddling through. The second part suggests a theory of freedom that supports the significance of even these obviously imperfect peer systems with incomplete coverage of necessary human capabilities, and explains why it is worthwhile to continue to build more of the spectacular or moderate successes, and to try to colonize as much of our world as possible with the mutualistic modality of social organization. It doesn't have to be perfect; it merely needs to offer a new dimension or sufficient diversity in how it instantiates capabilities and transmits power to offer us, who inhabit the systems that these peer systems perturb, a degree of freedom.

Working Anarchies

The defining feature of peer systems is their voluntarism; in particular, the absence of coercive power grounded in a delegation from the state and backed by social understandings of exclusive ownership. Property-based systems often exhibit substantial voluntary behavior, but they are based on a delegation of the state's monopoly over the use of asserted legitimate violence, and widely enforced through social understandings of proper relations around such a designation and delegation. Where control of a resource depends solely on one's own power to maintain possession, or on the goodwill and cooperation of neighbors, that is possession, not property. The defining feature of property is that it harnesses the power of the state to back decisions of the "owner" with regard to the resource, even where as a practical matter that ownership is respected through social convention with only rare resort to the application of the delegated state power. By "the state," I mean Weber's monopoly over the legitimate use of force, where "legitimate" has the same meaning it would in legal positivism: a

sociological fact about the world, stating that relevant observers see this violence as “legitimate,” rather than based on a substantive claim of legitimacy according to some conceptual morality rather than social fact. Relevant observers would include a core set of the relevant elites (those whose collective judgment is habitually persuasive to a majority of the relevant population) and a majority of those who live under the state’s power.

By “working anarchy,” then, or mutualism, I mean voluntaristic associations that do not depend on direct or delegated power from the state, and in particular do not depend on delegated legitimate force that takes a proprietary form and is backed by shared social understandings of how one respects or complies with another’s proprietary claim.

The Paradigm Cases: Internet Architecture, FOSS, and Wikipedia

To make the consideration less abstract, I will outline the ideal version of the possibility of well-functioning peer networks that are voluntaristic, noncoercive, nonhierarchical, and yet productive in domains previously thought to require governments and firms operating with clear (a) proprietary control backed by the (b) coercive force of the state that (c) asserts its own legitimacy.

Internet Governance: The Internet Engineering Task Force. The first objects of the term “anarchy” as a working model in reference to the Internet were its own governance structures. In 1990 Dan Lynch described the Internet Activities Board to the glamorously named *The Local Area Network Magazine*:

The system is designed so there is no top node. It’s designed anarchy. That gives you some problems at the operations level. We’re not incorporated. We’re just 12 guys. No one elected us. We elect ourselves. No one has to obey us. It’s neat. We’re not official. Therein lies a lot of strength, actually. We’re just successful.¹

“Anarchy” as it is used here includes several components. First, a lack of basis in formal accreditation. Second, a lack of formal power backed by any kind of sanction. Third, successful effect in the world, in guiding the behavior of others and setting standards or norms for action. And finally, that the lack of formality—and the dependence on continuous, voluntary cooperation from all those who follow the standard—is the source of strength of the approach.

Two years later, Carl Malamud picked up the theme in an opinion piece in *Internetworking*. Malamud opens with the statement, “The Internet Engineering Task Force has a proud history of anarchy.” Observing the rapid growth of the IETF to, at that point, 600 members, Malamud asks “How do we preserve the positive anarchy and creative drive of the IETF yet keep the group open to all?”² That same summer, David Clark famously provided the now-iconic self-description of the IETF: “We reject: kings, presidents and voting. We believe in: rough consensus and running code.”³ By 1995, *Wired* was already running a detailed story under the title “How

Anarchy Works: On Location with the Masters of the Metaverse, the Internet Engineering Task Force.”⁴

Certain characteristics of the IETF contribute to understanding it as a working anarchy. It had no formal authority; its decisions were not backed by any force, legitimate or otherwise; and they could not be enforced other than through voluntary compliance by any network operator who wanted to connect with any other who similarly complied voluntarily. Anyone could join the IETF. Participants needed neither state credentialing nor proprietary claim of right; nor was there any mechanism that allowed one to convert these forms of accreditation into a voice in, or influence over, the decisions of the body. It is moderately interesting that 600 people can govern themselves without any source of formal power, either bureaucratic or proprietary. It is much more interesting that this model governed a public good, the Internet, that is the most important new global infrastructure developed in half a century. As of 2012, the IETF’s website states:

Participating in Efforts of the IETF

The IETF is not a membership organization (no cards, no dues, no secret handshakes :-)

The IETF is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.

The actual technical work of the IETF is done in its working groups. To become a participant in the IETF, one merely becomes active in one or more working groups by asking to be added to the WG’s mailing list.

There have been a few studies of the IETF as a social process or organization.⁵ Over the period of its existence, it appears that the IETF indeed has largely preserved its nonhierarchical, voluntaristic form. In this it provides the original and initial instance of commons-based peer production.

By no stretch of the imagination, however, are all standards-setting organization that govern the way the Internet is structured run like the IETF. The World Wide Web Consortium (W3C) is a formal membership organization. In principle, the W3C is still “anarchic” in the technical sense that it is not incorporated, but functions under an operating agreement among three research institutes in the United States, Europe, and Japan. Membership is open to any organization and individual, with sliding-scale fees based on the size of the organization. Technical working groups, where the standards are actually developed and set, are still run on the IETF model. Membership or relative contribution does not translate into additional power over the standards in those groups. They do, however, offer a seat at the table. By comparison to a national or international standards-setting body, the W3C is clearly not a state-based enterprise. By comparison to industry standard-setting, or *de facto* standard-setting in the market, it is not a mode of transmitting proprietary power or organization into broadly adopted

standards that define the design-space of applications that must interoperate with the standard. Nonetheless, because membership is expensive and provides a seat at the table, the W3C does offer some opportunity to translate property into power over the standard, and in this sense is further toward the market-based along the axis of “non-proprietary/market-based” than is the IETF. The primary internal feature that distinguishes it from both the IETF and more market-based standard setting organizations is that it is built on charismatic leadership: it derives its initial authority and coordinating function, as well as its resistance to influence, in large measure from the charismatic leadership of its founder, Tim Berners Lee, who claims his authority from both being the originator of the Web and from his insistence, unlike others, in not cashing in on his investment but rather to translating his role in the origin story into the moral authority and leadership that come with the stewardship role in the W3C.

The Internet Corporation for Assigned Names and Numbers (ICANN) is a distinct, third, model of Internet governance. Its origin is neither anarchic, like the IETF, nor charismatic, like the W3C. Its origin is an effort to inject the power of both state and market into Internet governance. ICANN was introduced in 1998 by the Clinton Administration as a solution to three distinct desires: first, compliance with the ideology of privatization; second, preservation of control over the Internet in US hands amid growing calls for internationalization of its governance; and third, proprietization, in particular assuring that domain names became more amenable to control by trademark owners. The administration sought to achieve all three goals by transferring management of the domain name system to a California nonprofit corporation. This “privatized” the Internet in a very particular sense. Previously, domain name management was run on an academic and professionally independent engineering model, with Jon Postel running the Domain Name System (DNS) system under contracts from the government but with no real input and in a tradition of academic freedom (or, more likely, benign neglect). ICANN, after Postel’s death, took management of this system and gave it to a nonprofit, funded by registration fees, and originally lead by the Clinton Administration’s primary take-charge man, Ira Magaziner. I use “privatize” in quotes because the system was neither (a) in the hands of a government-managed bureaucracy before, but done by an academic in an independent governance structure; nor was it (b) in the hands of a market-responsive organization after. The US Administration nonetheless used the word “privatization” as a brand for what in effect was an effort to assert some control by the US government over what was quite independent before; and as a way of framing the effort to exclude other governments from asserting control as being an effort to keep all governments out of the business of regulating the Internet.

Finally, the membership on the board and the initial set of tasks of ICANN suggest that a core purpose of setting up the organization was to develop a domain control and arbitration system that would assure that trademark owners who had been too slow to understand the importance of the Internet and therefore did not register domains of the www.mycompanytrademark.com form would have a procedure by which to seize the domain name back from whoever had in fact registered it. The justice or wisdom of the policy has been debated extensively in the legal literature; it is not the point

here. Rather, the point is that ICANN entered the world as government intervention, both to protect the US government's role and to protect the proprietary interests of famous brand owners. In order to maintain control while maintaining legitimacy in a social context that had already experienced, and valued, mutualistic models, the administration structured its intervention as a civil society organization. Despite its origins as an effort to exercise control, the framing was thus oppositional both to the idea of government control over provisioning of a core public good—Internet addressing—and to the idea that what should replace government is a for-profit corporation, though its task was to enable for-profits to thrive in the business of domain name registrations. In the decade and a half since, ICANN has been the locus of many a power struggle, ambitions of global democratic governance of the Internet, and much criticism over lack of transparency and representation—both for Internet users rather than US government or corporate interests; and for non-US governmental interests. It now stands at the heart of a renewed and reinvigorated debate over whether the UN organization, the International Telecommunication Union (ITU), should take over its functions.

The point is not that Internet governance is a happy cyberutopia. When Chinese users try to reach sites banned by their government, it is their government, not the IETF, that is exercising power. When Facebook or Google users find their terms of service changed, and they have nothing to say about it, they are being governed by market actors implementing proprietary power. But all these actors, state and proprietary, are, in turn, constrained by the underlying infrastructure of the Net; and that underlying infrastructure is relatively open and relatively more difficult to capture than the networks that broadcasters or telephone companies built, because it has been built, and continues to be shepherded by, a loose, self-organizing network of geeks whose concerns, interests, and values are orthogonal to those of either the governments or the corporations who wish to control action and experience in the Net.

These are the two dimensions along which these Internet standards and governance structures provide instances of practical anarchies. Internally, these governance models, progressively from IETF to W3C and less so ICANN, operate as voluntary associations not mediated by state-accredited bureaucratic power, nor by state-backed proprietary claims. Externally, they construct major chunks of public infrastructure, or provision public goods, or otherwise fulfill functions that in the industrial economy would have been provisioned under terms that provide for either bureaucratic or proprietary power, but instead are provided under terms that shift some power toward actors in these non-state, non-proprietary associations, and that, possibly, actually diffuse power in the actions and relationships that rely on their affordances and constraints.

Free and Open Source Software (FOSS). Free and open source software programs account for roughly three-quarters of web servers, the software that a server runs to respond to browser queries (Apache; nginx); more than 70 percent of web browsers (Firefox, Chrome); server-side programming languages (PHP alone is >75 percent share); content management systems (Wordpress, Joomla, and Drupal have slightly

more than 70 percent of servers); all the way to enterprise stock management or statistical software, R. The sheer scale of our networked information economy's dependence on free software is staggering. Moreover, FOSS has become a critical part of the strategy of firms; just under 40 percent of firms engaged in software development report spending development time on developing and contributing to FOSS software.⁶

The core defining feature of FOSS is abjuring of exclusive proprietary control over the software in which one has copyright.⁷ As background, under present copyright law anything written enters the world owned. In the United States, copyright attaches to any writing not produced by a US government employee as long as it has a scintilla of creativity. A shopping list will do. (Although an alphabetized list of all telephone subscribers and their telephone numbers is too functionally determined to qualify.) Software is born property under existing law in most countries, including all the major global economic centers. What FOSS does is attach a license to the software that permits anyone who receives the software to use the software, redistribute it to others, study the "source code" (the form most readily useful to human programmers who want to understand and work with the program), and to make and distribute modifications. There are important variants, most importantly a range of "copyleft" provisions aimed to assure that those who take from the commons modify, redistribute their modifications, and share their own additions on the same terms on which they received the original. The details of these arrangements are important. There have been both religious wars and practical controversies within the FOSS community over copyleft, its justifiability generally and the specific forms it should take, and there have been extensive practical debates around the introduction of General Public License (GPL) 3.0, which tries to harness copyleft approaches more ambitiously than did GPL 2.0 (the GPL, originally written by Richard Stallman, is the most widely used license and the intellectual ancestor of free software.) There are important functional reasons to adopt copyleft, but the core of free and open source licensing does not depend on adopting a copyleft provision. Even the most devoted adherents of the wisdom, importance, and justice of including copyleft provisions in FOSS licenses accept the Berkeley Software Development (BSD) license, which does not include copyleft provisions, as free software. The defining feature of FOSS is not the requirement of sharing back one's modifications; it is abjuring the exclusivity that background copyright law grants the author of software from the moment the software is written.

Because FOSS is nonstate behavior, and because its defining characteristic involves rejecting the exclusive control that background property law provides, FOSS development is a perfect instance of peer mutualism. It is organized in a model that does not depend on state authority, whether direct bureaucratic or delegated through property. Copyleft specifically does depend on state power, because it is an assertion of copyright against third parties who modify and distribute the software, but it uses state-delegated property rights to keep state-delegated copyrights in the hands of others from using them as the joint outputs of the FOSS development project. Whether it serves simply as perimeter defense of the project against those who would appropriate its products by excluding others, or as an internal organizational principle depends on

whether one sees the role of copyleft as assuring that contributors to the project do not defect in its absence, or whether it is simply there to assure that strangers to the project do not undermine it by taking its products, extending them, and appropriating the value and undermining the continuation of the open project by drawing users and development resources to a closed version. Both interpretations are plausible.

Another dimension of many, but not most, FOSS projects is that they involve collaboration among significant numbers of individuals, sometimes (rarely) thousands, again without state or proprietary power. This is most widely recognized in the Linux kernel development community, the thousands of developers working on the core of the FOSS operating system, but also is highly visible in communities that work on distributions, such as Debian, servers, such as Apache, or subject-specific projects, like the R statistical package.

Discussions over FOSS, particularly the larger projects, have tended to focus on whether they are really nonhierarchical, or really nonmarket. In particular, the important role of charismatic leadership by founders, like Linus Torvalds for the Linux kernel development community, or the creation of foundations, like the Apache or Mozilla Foundations, which support the development community, are offered as evidence that, as these projects grow in scale, they require greater formalization and clearer leadership lines. In trying to understand how diffuse power in these enterprises really is, these critiques are important. In trying to understand whether FOSS really represents an anarchic form—one that is not based on state power, either through direct regulation or through state-backed proprietary claims—it is not. That voluntary associations of developers are able to solve their collective action problems without falling back on state-based power is the critical defining feature. Whether this makes a moral difference from a perspective that values human relations in which power is less concentrated, asymmetric, or pervasive does, on the other hand, depend on the internal power dynamics in these organizations, the relative ease of shifting in and out of them, and their effect on the constraints created by software whose functionalities they replace.

Externally, free software clearly provides outputs that offer a degree of freedom for users who do not want the constraints that proprietary software manufacturers want to embed in their products. Whether it is plug-ins for Firefox or mechanisms for circumventing encryption intended to limit what users can do with their software or digital materials; or whether it is the greater flexibility of Android, FOSS has provided platforms for users who do not fit the mold, or do not choose to adopt the Apple model of having everything beautiful and work well within a defined universe, but only on the terms of that company.

Whether property is in fact necessary for the common defense depends on whether one emphasizes the importance of copyleft or not. Copyleft leverages the copyrights and patents that developers have in the software they write to provide a common defense against free riders. Indeed, GPL 3.0 has sought to extend that common defense, and begins to offer mechanisms to moderate the negative effect of patents on software development. On the other hand, critically important software, like Apache and PHP, are not distributed under any version of the GPL, but rather under licenses that do not entail copyleft provisions (although there are some mixed versions). Those projects

are indeed independent of state power, even as to common defense. Projects like GNU, Linux, etc., that do use the GPL, at a minimum depend on proprietary control for that commons defense function against external actors who themselves are trying to use property to exclude from products that incorporate modifications of GPLed software. More troubling is the question of whether these projects, which incorporate contributions of engineers whose day job it is to contribute to these projects, depend on copyleft to police internal contributions and avoid defection by contributors. GPL 3.0, most clearly, includes a patent provision that withdraws patent licenses from any party that enters an exclusive license deal for someone else's patents. This provision clearly responds to a separate patent deal that SUSE Linux distributor Novell entered with Microsoft, giving those who use its distribution immunity from patent suits by Microsoft. Here, we have an "insider," a company that contributes to Linux and offers a distribution, nonetheless entering a side deal that gives it a proprietary advantage over competing distributions, at least in the business market. In response, GPL 3.0 included a provision that effectively gives any such licensee a choice of either (a) insisting that any license it gets is available to all users of the free software for which it is acquiring the license; (b) foregoing the license; or (c) ceasing distribution of its own software. If internal policing of collaboration, in particular as more commercial firms participate in FOSS development, is in fact emerging as an important function of the GPL, then the necessity of property reemerges, and the possibility of pure voluntarism even within the project recedes. The success of Apache, Firefox, and PHP, all of which also include contributions from corporations and their employees, suggests that the GPL in fact functions first and foremost as common perimeter defense. However, GPL 3.0 suggests that, at least in part, it also functions in the policing model for the larger projects that include combined contributions from market organizations and nonmarket volunteers.

Internally, the maturation of FOSS projects raises several questions regarding the extent to which hierarchy and power reemerge in FOSS development communities, such that as a practical matter the model simply changes who has power, using what institutional or organizational vectors, rather than power being diffused. One obvious risk is that, as the proportion of code written by developers who work on FOSS projects as their day job increases, the hierarchy of the standard organization will displace the distributed model of original FOSS development. This may be the case with projects licensed under a FOSS license, but that are rooted in a corporate project and in large measure function as internal development projects, like Google's Chrome. Most of the research on corporations that contribute to FOSS efforts suggests, however, that there is a clear separation between paying and authority to direct the contributions. Work by Karim Lakhani, Siobahn O'Mahoney, or Evangelina Berdou have all described that when a company hires a software engineer to work specifically on a free software project, the company does not really control what the engineer will do in the project, and certainly not how the project will use its employees' work. As Berdou reports in her studies on the GNOME project, her interviewees all noted how difficult it was sometimes for firms to adjust to the habits of the community, but also how necessary that was. Doc Searls, from *Linux Journal*, quotes an explanation from

one of the lead developers of the Linux kernel, Andrew Morton. Morton describes a hypothetical dynamic where IBM, for example, would come to one of its paid employees and say “we need this in the kernel.” The engineer will not say “the kernel developers won’t accept it,” he’ll say “*We* won’t accept that; it’s got to be good for the kernel.” In other words, companies that pay employees to participate in free and open source software projects have to relinquish a significant degree of control over the actions and contributions of their employees to the project. Otherwise, the employees themselves lose interest, but perhaps more importantly, lose their social place in the development process. This is even more pronounced for engineers who were hired into a firm precisely because they had close ties to the development community, in order to serve as liaisons of sorts. The authenticity of the engineers’ participation in the project is necessary for the employment relationship to pay off for the employer, and that authenticity, in turn, requires that the firm relinquish control over the employee, to degrees normally unthinkable in more common work relations. Payment is at least significantly separated from authority to control the work.

Another threat is not from corporate incursion, but from the internal dynamics of communities that start out nonhierarchical, following the so-called iron law of oligarchy.⁸ Chris Kelty’s work on the Linux kernel and Apache;⁹ and the detailed analyses of the Debian community by Gabriella Coleman¹⁰ and by Siobhan O’Mahoney and Fabrizio Ferraro¹¹ outline both the plausibility of the risk and how it is mediated through multiple overlapping modes of collective self-governance; a commitment to debate and discourse; a practice of shared normative framings; and of resistance, ironic subversion, and collaboration. Coleman relies on Cover’s jurisgenesis to talk about the self-creating normative space through practice, while Kelty refers to “recursive publics”; both outline a process that has at its core an ethic of “rough consensus and running code” that we have already seen in IETF and will see again when looking at Wikipedia governance. O’Mahoney and Ferraro rely on a more traditional framing of bureaucracy and democracy. Out of these, several elements become very clear. First, *contra* the postmodern moment in which these practices develop, there is a shared sense of merit, or quality, or a goal shared among the participants and susceptible to reason, demonstration, testing, and consensus. This becomes more challenging in Wikipedia around the neutral point of view relative to the bugginess or outright failure of code; but fundamentally it reflects a shared sense that there is a possibility of shared acceptance across deep disagreements, and a commitment to debate for as long as necessary to achieve something like consensus. This underlies both the role that individual meritocratic effort provides individuals with power over their particular corners of shared projects, and the means by which to challenge that meritocracy—not simple voting, but long debate based on argument and evidence. Meritocracy, then, and the capacity to gain partial, local authority over aspects of the collective effort into which one has devoted large and effective effort is a second component of both creating and diffusing power. Its most visible form of hierarchy is the relative role that charismatic founders of some of these projects have in these communities—like Linus Torvalds in the kernel development community; and precisely its visibility also makes clear the possibility of challenging authority, with repeated stories in both

Kelty's and Glynn Moody's earlier *Rebel Code*, describing instances where challenges to Torvalds' authority resulted in a somewhat broader distribution of the capacity to commit code and integrate it into the kernel. In Debian, Coleman describes how the continuous evocation of TINC (there is no cabal) and the black humor about the presence of a cabal are used as a continuous cultural technique to render visible the existence of a meritocratic elite, underscore the risk it poses to the community, and reaffirm the joint commitment that that elite cannot be allowed to govern unchecked by continuous criticism from the community. O'Mahoney and Ferraro, in contrast, emphasize the formal nature of Debian's constitution and elections for roles. Debian is quite clearly the FOSS community with the clearest and most formal set of rules, elections for organizational roles, etc. Here, majoritarian rule can offer a way out of deadlock where no consensus emerges; but it is viewed skeptically and used sparingly except in the context of electing leadership, which in turn is committed to coordination, not to exercising authority. The emphasis on consensus over voting wherever technical matters are at stake, as well as basic organizational changes, underscores that voting is fundamentally a method for cutting off debate; it is an admission of failure to reach rough consensus, failure of persuasion. In this regard, rough consensus is a strong platform for discourse because it diffuses power, where both unanimity and strict majority rule undermine reasoned debate building on shared assumptions, observations, and models.

A full review of the range of FOSS project governance structures is well beyond the scope of this article. The range is broad, from the more-or-less structureless KDE project (one of the two major graphical user interfaces to Linux), through the range of projects that have a "Benevolent Dictator For Life" like Drupal, Ubuntu, or the Linux kernel itself, albeit themselves with a range of powers, from relatively rare and minimal (Drupal) to quite substantial (Linux kernel), and to the quite legalistic Debian. Technically, the power of the community over any cabal has been significantly increased by the shift to Git as the dominant version control system. GitHub now hosts more than half of all projects using only Git; Sourceforge also supports Git, although not solely. This technical change has made forking and versioning, the ultimate limits on the power of any cabal, vastly easier. Older systems, like CVS or Subversion, had centralized depositories, which, in turn, could be used by a centralized authority to exercise some power in a community. Using Git means that every developer hosts his own copy, and the system then integrates and tracks various versions and commits over time. As a practical matter, this has significantly lowered the threshold for individual contributors to make autonomous decisions and implement them, and reemerging divergent approaches becomes easier. As a result, the technical infrastructure as it develops is supporting more distributed models and providing easier pathways to challenge oligarchy where it does emerge, in particular oligarchy that seizes power rather than continues to engage in debate and community service.

In all, FOSS, the most mature and complex set of peer production communities, seems to have developed a range of solutions to avoid internal ossification of power. These involve a strong, widespread commitment to debate and reason, rather than either pure charismatic or organizational authority, on the one hand, or voting, on the other.

Furthermore, meritocracy and effort, quantity and quality of contributions—both technical and organizational/community-maintenance work—provide significant sources of relative power in the community, thereby allowing some localization of governance within various areas of activity of projects. Some communities still have founders with strong charismatic roles; others do not, and, indeed, with Debian, explicitly cycle leadership. While the institutional details differ, the basic observation appears to remain—early concerns that FOSS would be co-opted into corporate control as companies began to hire developers to participate have not materialized, and predictions that FOSS projects, as they grew and matured, would replicate bureaucratic structures of companies or government bodies also failed to materialize. A strong shared ethic and narrative of individualism and autonomy, egalitarian participation, and suspicion of power have combined with diffused cultural/social practices and technical collaboration platforms that instantiate them to stabilize peer production communities into mutualistic systems of self-governance with relatively diffuse power and substantial pathways for resisting power and challenging authority where it is asserted within a community in lieu of debate, persuasion, and volunteerism.

The point for our purposes here is that FOSS provides a crisp example of large-scale, society-wide and economy-wide production that is based on a nonstate, nonproprietary model, and that many, although not all, projects also exhibit characteristics of relatively diffuse power, and nonhierarchical relations within the voluntary associations that make up the projects. Moreover, it is an example of a domain in which this model of production has successfully challenged, competed with, and bested or at least equaled a proprietary model of production. In doing so, the products have, in turn, provided greater degrees of freedom for others to work around constraints that proprietary platforms introduced. Firefox, a project of the Mozilla development community and the Mozilla Foundation, provides greater flexibility to develop additional extensions than do the proprietary browsers. Users have developed a range of extensions that, in turn, built on the openness of this platform to pursue their own goals, such as blocking unwanted advertisements, allowing users to track who is tracking them online for purposes of behavioral advertising, or saving streaming media for use when you are not online. While some of these functionalities were later copied in the proprietary browsers, not all have. Moreover, the proprietary providers often integrate their products to make one dependent on the other; Apple is notorious for this, but even Microsoft built many versions of Internet Explorer that were optimized to its most recent operating system, and Firefox was often the better option for users who wanted a newer browser but did not want to buy a newer operating system or install a new element that Microsoft had developed. The point is that Firefox is built by and for a community of users who seek greater control over their own Web browsing experience. In the process, they create both a practical alternative to the proprietary models, and a force for pushing the proprietary providers to offer similar functionality if they wanted to keep users.

Wikipedia. The other great success of peer production has been Wikipedia. Anyone who, in 2001, when Jimmy Wales put 900 stubs on a platform that allowed anyone to

write or edit but paid no one to do so, would have predicted that this would become the world's most important knowledge collection would have been laughed out of the room. And yet it moves. Comparative studies over the years have mostly found Wikipedia to be of reasonable quality: imperfect, but not more so than other encyclopedias, including the standard-setter, Britannica. Over time, studies oriented in particular toward scientific entries found Wikipedia to be reliable. The National Cancer Institute (NCI) study in 2010 was a particularly powerful example, where Wikipedia articles on various common cancers were found to be of equivalent accuracy, though less user-friendly and readable, than the NCI's professionally produced explanations for patients.¹² Wikipedia's cultural influence is enormous. It is one of the most visited sites on the Net; and it continues to be edited by thousands of volunteers who manage their affairs internally without contracts, property, or state fiat.

Wikipedia is the most complex and successful instance of sustained self-governance we have on the Net, and quite possibly anywhere. For the past half-decade or so, as of this writing, the number of editors who contributed more than five edits per month to Wikipedia in all languages has floated between 75,000 and 85,000, and the number of editors who contributed more than 100 edits per month has floated between 10.5 and 11.5 thousand; the English-language Wikipedia has about one-third to 40 percent of those numbers, respectively. By any account, that is a very large number of active contributors who are managed in a complex, vague system of overlapping elements, none of which quite fit any crisp, well-defined model of governance. As Wales put it, "Wikipedia is not an anarchy, though it has anarchistic features. Wikipedia is not a democracy, though it has democratic features. Wikipedia is not an aristocracy, though it has aristocratic features. Wikipedia is not a monarchy, though it has monarchical features."¹³ A particularly insightful analysis of this set of overlapping features is developed in three chapters of Joseph Reagle, *Good Faith Collaboration*, and the next few paragraphs rely on his work,¹⁴ although the work on Wikipedia governance is extensive, and a substantial portion of it is more critical of one or many aspects of the community's governance processes and practices.¹⁵ Addressing the detailed critique will have to await later work; for now, I take the goal of outlining a real utopian project here as license to acknowledge the significant and detailed critique as a challenge for the future in determining the "real" aspect of the "real utopia" project, but nonetheless pursue the more utopian characterization here. Because of its complexity, public visibility, and sheer size, Wikipedia offers the most complete insight into the possibilities and limits of mutualism, or practical anarchy, as an organizational form. While it is clearly not a perfect technology of self-governance, it does offer distinct existence proof of the feasibility of scaling to substantial size and global influence without losing the essential characteristics of a collaborative community in which power is diffuse and depends on human and social interaction rather than on institutionalized power—whether anchored in direct state coercion or delegated through property.

The fundamental risk for every social process or collective action that does not have a well-defined model of governance is that some form of oligarchy will emerge to grab and exercise power. Whether it be the feudal lords' rise in response to the decline of Empire in the middle ages or Somali warlords today; whether it be Michels'

iron law of oligarchy¹⁶ or Mitch Kapor's "Inside every working anarchy, there's an Old Boy Network,"¹⁷ structure orders power, and structurelessness invites power grabs. Wikipedia's solution is the basic model of the idea of degrees of freedom. It avoids any single optimized model, and creates alternative pathways for dispute resolution, none of which is necessarily determinative, and all of which flow into and through each other. And it works.

The fundamentally anarchic base on which Wikipedia is built is its openness: anyone can edit, whether signed in or not; and anyone, of any form, can follow the "Ignore All Rules" rule and then use discussion and reason with others to try to justify their action. The elements of this aspect are:

- *Openness through adoption of commons/open licensing.* The community eschews proprietary legal right to control the text by adopting first the GNU FDL, and then Creative Commons licensing. This unilateral legal disarmament sets the foundation of anarchic self-organization: there is no person or organization that claims or asserts legal control. Indeed, the adoption of a commons-based model sets the ultimate check on excessive control, in that any group of excluded contributors can always fork and take the entire project to date, and create their own clone which they can then continue to develop according to their own decisions. This allows for both personal autonomy in acting on the shared texts, and collective independence to move away from a project whose governance has ossified.
- *Transparency.* Decisions, processes, rules, and reasons are all public and available for reading, criticism, and revision.
- *Nondiscrimination.* There is no privileged or outsider status that trumps the merits of an argument or process.
- *Discourse and consensus.* A series of practices emphasizes debate, persuasion, and consensus over other forms of closure; discourse norms such as "assume good faith" and norms of civility drive the debate more than formal rules. Reagle justifiably devotes an entire chapter to consensus: it is central to defining Wikipedia as a working anarchy, because it emphasizes the extent to which the community will go to assure voluntary collaboration over power: whether the power of the vote or of a leadership system. Consensus is "Wikipedia's fundamental model for editorial decision making."¹⁸ Most of the time disagreements are resolved through debate, anchored in the exchange of references, explicit evocation of community norms, and occasionally interventions by third parties who try to talk reason to the parties to a disagreement. But consensus as it has developed in online settings does not give each member veto power over the outcome. "Rough consensus," a la David Clark, is the measure. This, in turn, gives rise to disagreements about when rough consensus has been reached. A first line of determination is a third party, often an experienced user or an administrator, admonishing one party or another; sometimes users resort to quasi-voting, where they will issue a straw poll to see whether there is significant opposition or just the persistence of one user; and even where consensus is

reached, issues can be reopened if opinion changes. Reaching consensus is a fuzzy process, not a crisp one of tallying votes. It is a mechanism for resolution that resists and somewhat moderates power plays, although it cannot eliminate them completely.

- *Leadership and facilitation.* A central driving force of how Wikipedia developed was Jimmy Wales's leadership style. At heart, it is a genuinely reluctant leadership, embodying humility, a fundamental commitment to the project—rather than to self-aggrandizement—and the ability to back down, listen to criticism, and apologize where necessary. Affectations of these characteristics are legion in politics and leadership settings; their actual practice, rare. Yet the past decade strongly supports the proposition that Wales, in fact, embodies these, and as such has been able to retain a “monarch of last resort” status that provides the affordance, to the community, of intervening personally in extreme cases where none of the other models can work well enough or quickly enough to respond to a major challenge. This is the “constitutional monarchy” aspect of Wikipedia. Given the complexity of the emerging governance relationships that necessarily emerge from the diverse, large, and open interactions that make up Wikipedia, the existence of such a sword, which is known to be able to cut through emerging Gordian Knots, is a valuable backstop; its availability as a general feature of anarchic system is, however, limited by the personality of the people who found and lead a project. Overuse, or uncertainty as to the benevolence and self-discipline of the leader can undermine the actual practice of the other elements that make up the successful self-governance system.
- *Redundancy of governance pathways.* Disagreements can be resolved and revisited in multiple pathways: from direct debate on an article's talk page, through straw polls and various administrators' boards, to the Arbitration Committee or (very rare) interventions by Jimmy Wales; in many cases, the debates can be revisited in more than one instance; complete closure that suppresses continued, persistent disagreement, as opposed to consensual and accepted closure, is relatively rare. Stewards, who have the technical power to change other users' status (e.g., whether they are administrators, or bureaucrats), have an internal code of conduct that they will never decide what the underlying status is; rather, they will implement a valid decision by some other body; admins are many and their powers parallel and redundant; one can protect an article and another unprotect it; one can block a user, and another unblock. There is no hierarchy among users, or admins, or bureaucrats, and they provide alternative pathways where they, in turn, have to resolve their own differences in a conversation that is itself subject to the discourse and consensus norms. It is important to note, however, that this very indeterminacy and multiplicity can lead to significant internal domination patterns by those who are experienced with this model over those who are new or outsiders.¹⁹
- *Irreverence and resistance.* Criticism of power in Wikipedia is legion and persistent. Complaints about bureaucratization, Wikilawyering, and excessive policy are an integral part of the process. Because the complexity of the

task of managing a very large number of contributors contributing to an ever-growing corpus of texts, policy making and rules proliferate. As they do so, they undermine the openness and anarchic freedom of the practice. Persistent criticism from within, humor, and bitter mockery play a continuous role in keeping the system honest and more closely huing to its core values. It is not a perfect solution—since complexity and form do in fact increase, but it serves a significant moderation function as well as an escape valve to correct overbureaucratization.

As an ideal type, Wikipedia offers us an example of a working anarchy in the sense of being a well-functioning, productive voluntary association of individuals that is not based on state control or regulation, or on property-based claims and organizational forms. Moreover, its scale and influence in the world show that this model can produce, sustainably and effectively, a critical component of our information environment, and can do so in a way that avoids a collapse onto well-known organizational forms. The solution that Wikipedia presents is far from clean. The community's governance system is complex enough, and vague enough, that it has fostered a veritable field of study on its own; it is far too soon to tell that its current shape is an end state, rather than a working out of what will ultimately emerge. That said, it is safe to say that Wikipedia as it currently stands is the most extensive implementation of a fuzzy governance model that depends fundamentally on human interaction, discourse, and sociality; incorporates diverse pathways for action and decision; leaves tremendous room for individual autonomy and subgroup collaboration; and depends on diversity of constraints and affordances, technical and organizational, rather than on the emergence of a well-defined hierarchy, a form of institutionalized power, or a coherent authority structure.

An Emerging Solution Space

The paradigm cases—Internet standards, FOSS, and Wikipedia—offer the most mature and best-studied models. They have fostered a broader, more general understanding that commons-based peer production, or distributed, voluntaristic, nonstate, nonmarket action provide a solution space for alternative models of approaching a wide range of social tasks. Several years ago, I wrote about this wide and growing range of practices, from community Wi-Fi, distributed computing, or distributed storage, like peer-to-peer networks, through collaborative news sites, citizen science, or car pooling, and to peer approaches to agronomic or drug development.²⁰ The examples continue to develop, the broad recognition of the feasibility of these approaches continues to increase, and efforts to implement peer solutions to sticky problems are becoming increasingly diverse. Many fail. Community Wi-Fi, for example, has not been the success many, myself included, had hoped for and predicted. Efforts to create a user-owned social network alternative to Facebook, Diaspora most prominently, have also failed. Others succeed in ways that are more dramatic and sustained than critics would have believed, or proponents predicted. Kickstarter, a peer-funding

platform, now provides more arts funding than does the National Endowment for the Arts;²¹ Yelp and TripAdvisor have overshadowed their proprietary predecessor sites for restaurant or travel tips. Stock photography has mostly been overshadowed, as an industry, by user-created sites like Flickr or Photobucket; YouTube and Vimeo have redefined who can make video and distribute it to national and global audiences; A July 2012 study by Pew found that about 40 percent of the most viewed news videos on YouTube were produced by citizen journalists rather than by traditional news outlets, and that these fed back in to mainstream media consistently and significantly;²² and Twitter, Reddit, and Tumblr represent new ways in which large numbers of people collaboratively work to define what they read and how they interpret it. In the real-world domain, the United Nations High Commissioner for Refugees (UNHCR) now incorporates satellite image readings done by the “Standby Task Force,” hundreds of volunteers who help it cut the time it takes it to identify the location of refugees who need its help by weeks, if not months; More recently, US Agency for International Development (USAID) developed ways of harnessing volunteers to help it map its development data to, in turn, make it publicly available as part of its transparency efforts.²³ The USAID example suggests potential pathways for governments to incorporate distributed action into their own operations, but it also suggests that not everything that looks cool and collaborative really does represent a diffusion of power or a working anarchy, as opposed merely to cheap outsourcing of labor that offers its workers no meaningful degree of freedom. The following examples are not representative in any sense, but offer a way of exploring the potential, and limitations, of generalizing from the core instances of mutualism that we have observed over the past decade.

Banking and Peer Finance

At least since Proudhon’s bank, mutualistic approaches to access to financial capital and avoiding the thrall of the banker have been pursued as foundations of freedom from the power that financial resources give to those who have them over those who need them.

In the real world, credit unions and microcredit systems are the two most significant movements of cooperative banking. In developed countries, credit unions owned by the depositors account for a substantial portion of the banking system. In the United States, by the end of 2012 about 92 million Americans banked with customer-owned credit unions.²⁴ In developing countries, the equivalent innovation was the adoption and widespread use of microcredit, on the model of Grameen Bank in Bangladesh. Grameen Bank is, at present, 95 percent owned by the borrowers, of which 96 percent are women.²⁵ It requires no collateral, but builds on social capital in that borrowers must be members of groups of at least five, although the group does not bear collective responsibility for the loan; each borrower is responsible for his or (mostly) her own debts. Except for members who are beggars, who take out loans free of interest, Grameen Bank charges substantial interest, ranging from 5 percent for student loans to 20 percent for income-producing loans (e.g., buying equipment or seed). Credit unions do generally charge rates that are lower than those available from commercial banks,

and offer higher returns on deposits, but the necessity to be self-sustaining requires that both models be different from the Proudhonian ideal of interest-free loans. Nonetheless microlending as it has been adopted in development strategies, and credit unions more generally, represent the most visible and successful mutual finance system we observe. It has successfully made credit available to people who would not have had access to credit in a traditional banking system, or, in developed countries, on better terms; and it has done so sustainably, exhibiting relatively low default rates.

Efforts to import the approach to developed countries using online systems have had mixed success. In particular, models based on profit have been shaky, whereas models based on mixed motivations seem to have had greater success. Beginning in mid-2005-2006, firms such as Prosper.com, and later LendingClub.com, began to develop platforms for peer-to-peer lending. The idea was that people could go to each other for loans and not necessarily have to rely on banks. Prosper, in particular, ran into high default rates and failed to solve the adverse selection problems and unsophisticated selection by lenders. To date, these approaches have not developed into a significant part of the banking system.

The most successful online models have been less about pure replication of mutualist banks, and more about mixed-motivation funding models, where the funders and recipients are not the same group. These include in particular Kiva and Kickstarter. Kiva is a site that enables lenders from wealthier countries to lend to borrowers, individual peer-to-peer lending, where the borrowers would typically need the money to buy a cow or seeds for a season, and then repay a no-interest or nominal-interest loan. From November 2010, when Kiva reached its \$100 million loan mark, to early 2012, when it reached its \$300 million dollar mark, Kiva facilitated loans totaling about \$100 million a year, with the average loan size just under \$400. Whether this is a lot or a little depends on one's baseline. Grameen Bank, operating in Bangladesh alone, raised somewhat under \$1.5 billion per year during the same period. On this background, while Kiva is a fascinating experiment in global giving for development, on a model of mixed-motivation lending, its scale is very small in comparison to the needs of the global poor. If, on the other hand, one wishes to understand the relative importance of peer production or mutualism relative to current developed country performance, then a more relevant comparator would be USAID. Here, Kiva's \$100 million per year is in fact roughly equivalent to USAID's outlay for microfinance.²⁶

Kickstarter is a model for peer funding of creative projects. It steps in where record labels once stood in creating risk capital to allow a musician to pay for recording an album; or where the National Endowment for the Arts would stand in funding an artist working on fringe art. The supporters receive a range of privileged access to shows, or T-shirts etc., but do not participate in the economic upside of a successful record. They are funding on a mixed-motivation model, investing in artists whose work they find attractive. Founded in 2010, the level of funding has grown dramatically. In 2010, Kickstarter had successfully funded \$27 million. By 2011, the total funding had reached \$99 million. By June of 2012, Kickstarter had raised \$215 million, and by February of 2013, \$418 million over its lifetime, a current rate of substantially more

than \$200 million per year and growing. By comparison, the NEA budget for 2011 was \$155 million for 2011, and \$146 million for 2012.²⁷

The existence of Kickstarter offers a useful context in which to consider how a peer-produced capability can alter the system of constraints and affordances within which a class of person operates as they plan and pursue a life. Consider a musician trying to make a pop or rock album in 1975. Recording a high quality album is expensive. Distribution outlets are limited to vinyl records, tapes, and radio. Both funding and distribution outlets are locked in to an industrial structure that makes the record labels gatekeepers to the funding, the distribution, and the taste-making that could help make the album popular. The result is a power relationship between the artist and the labels that strongly favors the labels, and makes it difficult for artists either to maintain artistic freedom or to capture a significant portion of the money their popularity, should it eventuate, generates. Exploitative contracts in this industry were the norm, rather than the exception.

In 2012, the musician has a very different set of options. Technologically, the cost of recording is lower. Kickstarter provides a very low cost avenue to obtain funding to live and record during preparation. In the spring of 2012, musician Amanda Palmer, who had broken from her major record label contract four years earlier, was ready to release her first postlabel major album. Over these few years, she had built and developed an independent model. She ran a website to distribute her own music; managed voluntary payments through Bandcamp and similar sites, which allowed users to pay what they wanted; and did not sue or threaten anyone who shared or remixed her work. She developed ongoing relations with fans, and marketed herself through her own twitter feed and blog. In all, these allowed her to produce the songs she wanted to, without being beholden to the tastes of a label; and they allowed her to connect with her fans directly. But to produce a high-quality album, with artwork, a large band, etc., was more expensive. For this, she turned to Kickstarter. The money pledged to her project was not on interest. It “bought” fans various goodies, like entrance to a real live event, or vinyl copies of the (not-yet-produced) album, or a particularly high-quality print of the cover art. By the close of the campaign, she had raised close to \$1.2 million, more than enough to cover the production and distribution of the album and tour. Palmer’s story is an unusually successful one, but it is far from unique. A large number of artists are using platforms like Kickstarter and Bandcamp to free themselves from the control of the record labels and set up as independent artists directly reliant on their fans, but appealing to these fans’ generosity and reciprocity, rather than to law, copyright in particular, to force payment. The result has been what is often described as a growing middle class of musicians that is making a modest living from making music independently. From 2004 to 2011, the Bureau of Labor Statistics recorded a threefold increase in the category of people reporting themselves to be independent musicians and songwriters, and their average income has increased 55 percent over that period, including the major recession.²⁸ The Future of Music Coalition’s survey of 2000 artists similarly identifies working musicians as having an average salary of \$55,000, or slightly above the median household income for 2011.²⁹ A review of income using five years of

contribution data from three sites supporting less-well-known artists than Palmer confirmed that contribution levels were fairly stable, and that fans voluntarily paid artists slightly more (e.g., \$1.25 per track in an industry where 99 cents was the norm) than the industry was able to force them to pay using the commodified platforms.³⁰

If one thinks of “working anarchy” as necessarily excluding money, then speaking of banking seems counterintuitive. But the reason that Grameen Bank does represent such a model, and that Proudhon sought one, is that credit is necessary to human functioning in market societies. The question is on what terms and who defines them. What characterizes microlending, and in particular lender/depositor-owned banks, is that it is a mutual banking system, where the lenders and borrowers are the same population, acting with and for each other’s benefit without reliance on the coercion of law or the property system. The same is true of credit unions, although the size of the organization in the larger ones, as well as the fact that many are organized by employers as employee credit unions, may make many credit unions function in a way that is not that different from a standard commercial bank. Kickstarter is, in any event, somewhat less obvious an instance of the same principle. It is, after all, not about mutual lending, but about one class of people, artists, extracting money from another class of people, fans, in exchange for their work. But I think that perspective would miss the core relationship that Kickstarter and voluntary payment systems represent. What these systems do is allow artists, who want to make art as their vocation, and fans, whose lives are enriched by being able to support artists who can dedicate themselves to their art, to come together to collaborate. They do so in direct opposition to, and circumventing, the property-based mechanisms that developed over the course of the twentieth century as a replacement for an earlier era of patronage of the arts. With patronage, the patron was the one with the power, and the artist needed to, at least to some degree, comply. With the market, the labels or studios came to occupy that position of power over taste-making, over who succeeds and who does not. Now, we are in an age of revived patronage, but a patronage that does not concentrate taste-making power. At a minimum, it is a significant improvement in the extent to which artists are free from the power of patrons or labels. But a more optimistic view is that fans too can now come together in communities of fandom to support a much more varied and diverse culture. A geek hero like Jonathan Coulton can suddenly become a successful professional musician; a state that neither he, nor the geeks who love his music, was likely to attain seven or ten years ago. And they can do it because they have been able to build a system of collaboration around the music and its funding that circumvents the homogenizing power of the record label system.³¹

This story motivates the broader theoretical point: where individuals have alternative avenues open for making and pursuing a life plan, they have greater freedom to do so *vis-a-vis* the power of others over them. In the case of independent musicians, this translates into greater artistic freedom and possibly a larger number of artists having the option to trade off a small probability of fabulous wealth in a concentrated, label-controlled industry for a higher probability of moderate income without being beholden

to a label. As we will see in Part II, this basic role that diverse platforms offer is the core function that the diversification enabled by working anarchies plays in enhancing freedom. It is not the inherent superiority of such systems over states and markets, but the diversity of constraint they enable, which in turn permits individuals greater freedom to make their own way.

Peer Production of Public Functions: Ideal Types

A major path of intervention of decentralized, voluntaristic systems is a set of efforts to use peer-based approaches to work around nonfunctioning or imperfect state institutions. These models are the mutualist equivalent of the “privatization” movement that sought, and continues to seek, to remove public actions from the responsibility of governments and locate them instead in the hands of profit-seeking, proprietary organizations on the theory that these kinds of organizations have “incentives” to deliver these services better and more efficiently than do government officials. I will not address here the enormous literature on the costs and benefits of privatization; rather, I note it here merely to identify the parallels between that move, which diagnosed failure on the public side and prescribed markets as a cure, and the move to supplant government functions with anarchic, voluntaristic models.

The poster child for the distributed model of fulfilling otherwise governmental functions is Ushahidi. Ushahidi was created in 2008, when a Kenyan blogger, Ory Okolloh, posted a blog post in the midst of election violence there: “any techies out there willing to do a mashup of where the violence and destruction is occurring using Google Maps? Perhaps we can begin to collect information from organizations and individuals on the ground e.g. red cross, hospitals, etc. and start to build a tally online.” Another blogger following the situation from the United States, who had volunteered in Kenya, wrote: “The primary means of communication during an emergency in Kenya is via SMS.” Within a week, two Kenyan expats working in the United States, David Kobiah and Juliana Rotich, developed an open source platform, itself built using several FOSS components, that allows anyone, anywhere, to send in mobile phone or computer updates about their observations, and then mash them up with a map. The platform that began as a solution for election violence there became the system used to map locations of relief needs in as wide a range of locations as Haiti after the earthquake, Russian wildfires, or Washington, DC snow emergencies. In the Egyptian elections that preceded the 2011 Arab Spring, Ushahidi was used for citizen-based election monitoring, using a system that was adapted by Egyptian hackers for that purpose, and was later extended and used in Tunisia for that country’s first free election.

While Ushahidi emerged as a clear response to vacuum of functioning government of a “developing world” sort, mutualism has also been used to work around governmental bodies that are reticent to fulfill their role because of the standard failures of government in democratic society—incompetence, political interest, cronyism. Perhaps the clearest example of this to date is Safecast, a response to the failures of the Japanese government and power company to produce reliable information about

radiation levels in Japan after the Fukushima incident. Within days of the earthquake on March 11, 2011 in Japan, an email exchange among three people—Sean Bonner (Los Angeles), Joi Ito (Boston/Dubai/Tokyo), and Pieter Franken (Tokyo)—that began as checking in among friends and on family, shifted to consideration of radiation data and how to get it. Supplies of commercially available Geiger counters dried up almost immediately, and within the first month the three had brought together a network of developers and designers from Maui (International Medcom there produced high-quality Geiger counters), Tokyo Hackerspace, Singapore, Boston, Seattle, North Carolina, and Portland, Ore., to develop both mobile and stationary Geiger counter units, and a system for dynamically communicating and mashing up their findings into maps under an open-access data license.³² Seed funding was obtained through Kickstarter, later filled out by a grant from the Knight Foundation. The result has been a significant international collaboration, delivering physical products and deployments, as well as information infrastructure, based on volunteer efforts and funding. Safecast is as crisp an example as we have for how mutualism can serve as a successful workaround for failure (whether for lack of capacity or, more likely, for lack of political will) of a public body.

A Cautionary Tale of Transparency: Open Data and Wikileaks

These stories provide inspirational images of the possible. However, efforts to integrate distributed action into working governing structures, intended to overcome the limitations of those very processes, suggest that making the utopian project “real” is far from simple. The most consistent and public embrace of reorienting government processes to make them more amenable to distributed social production has been the Obama Administration’s very public embrace of “Open Data,” or Gov 2.0, the subject of the president’s very first executive order. The reality of the past four years suggests how the rhetoric of openness and voluntarism interacts with the rhetoric of innovation, entrepreneurship, and markets, and how both can lead to obscuring, rather than solving, the public failures that led to the movement in the first place.

In its simplest form, “open data” means that governments should put data that they possess or could collect in the normal course of events in raw form, under licensing terms that would make them usable by anyone who wishes to do so. The market- and non-market-based “useful” consequence will be that data is a public good, and its release for free use will make it possible for both market organizations and civic hackers to integrate the data into useful new applications. Weather data is the most obvious example. The government collects the data; companies bundle it in ways that allow people to plan their lives. Apps developed by volunteers to deliver bus route data allowing for greater use of public transportation are the poster child for the civic hackers version. An alternative, “democratic governance” aspect of the same movement emphasizes transparency. Here, the claim is that through use of raw data, a combination of civic hackers and data journalists will be able to process the now-transparent data and identify abuses that previously were harder to identify without long-term investigative journalism or whistleblowing. The Sunlight Foundation is the

organization whose efforts, both technical and political, embody this strand. Tom Slee has proposed a useful 2x2 map of the open data terrain along the dimensions of commercial/noncommercial and “service delivery”/“transparency” that captures the kinds of organizations involved and the tensions among their competing requirements.³³ There are transparency-seeking actors, both noncommercial civil rights hackers and commercial data journalists, and there are utility-seeking, service-delivery-oriented commercial and noncommercial players. Slee’s point, to which I return below, is that the commercial, utility-seeking applications are riding the high moral ground of “open government” and “free data” on the promises of the transparency-seeking players, but in reality the latter are easy for governments to avoid, while the former provide subsidized access to valuable public data to incumbent, large, commercial organizations. Capture, rather than accountability, and distraction by gadgets and services, rather than transparency, is the result.

Here, I will focus on the lessons of the open data movement specifically for the promises and potential limitations of peer models to deliver public accountability. In the frame of the industrial information economy, the problem of potential abuses of government power had three classes of solution. The first was institutionalized oversight, within the state, by independent branches. This could take the form of legislative oversight over an executive, or judicial oversight over both. It could take the form of an official ombudsman or inspector general, with measures of independence, such as a secure tenure and salary. In some cases, particularly for poorer and politically weaker countries, it could take the form of international observers with the backing of inter-governmental organizations, such as in election monitoring. The second was “the press” as an institution. In the United States, press freedom required an independent base in the market; albeit, as Paul Starr emphasized and documented in *Creation of the Media*, supported in critical ways by government subsidies and policies. This market-based model of the media, in turn, was the basis of decades of media criticism, by a wide range of scholars such as Robert McChesney, Ben Bagdikian, and legal scholar Ed Baker. The core conflict between the professional values of independent, hard-hitting reporting necessary to preserve the oversight function of an independent press, and the concern of the business to offend customers and advertisers was a basic tension in the model. In the United Kingdom, the BBC model avoided that tension by relying on government funding, and its independence, like so much of the British constitution, depended on professional ethic and elite norms of performance and governance. To greater and lesser degrees, the BBC provided a model for other Commonwealth countries, but in the United Kingdom, private, market-based reporting, and to a lesser degree foundation-based reporting such as that of *The Guardian* played the role of watchdog. The third major model involved nongovernmental organizations (NGOs), such as the American Civil Liberties Union (ACLU) or Amnesty International, engaged in their own research, utilizing both Freedom of Information Act (FOIA)-type laws and on-the-ground research. Organized civil society had the benefits of professionalism without the costs of market-oriented interest; in some areas it was able to do substantial work, but was limited by funding limitations and scale relative to the government actions that needed public oversight.

The open data movement's great promise is to harness the agility, diversity, and dynamism of peer production and mutualism as a fourth modality of attaining accountability through transparency. Just as peer production was able to circumvent the extension of Microsoft's monopoly from the desktop to the webserver and browser; just as Wikipedia provided a peer-produced alternative to the world of Encarta, so too could open data lead to a workaround for accountability. Free of the corrupting influences of the advertising-supported mass media; free of the political pressures of institutionalized accountability measures with their imperfections; if data about the government were collected and made available online, these communities of cooperative practice could apply themselves to observing our government and exposing inappropriate behavior.

The reality has been quite different. The enthusiasm to engage programmers in using data has found its primary outlet in civic hackathons. These are generally aimed at producing useful, cool apps from functional data—helping people get their bus, get their local government to fix potholes more quickly, etc. These efforts have been successful because they are immensely satisfying to their developers, genuinely useful for the population, and fundamentally nonthreatening to incumbent political power. From the developers' perspective, they show immediate success at making the world better for citizens (albeit, citizens in their stance as consumers of public services). From the politicians' perspective, it allows them to look innovative, forward looking, and "participatory" or "democratic," without actually making available any information about the inner workings of government, conflicts of interest, or otherwise actions that might give rise to accountability. As Jennifer Shkabatur's analysis has shown in some detail, the Obama Administration's great open government initiative, with Recovery.gov and other sites opened to great fanfare as implementation of the president's very first executive order, has a similar shape. A tremendous amount of data is made available, but the data is mostly transaction oriented or usable in a citizen-as-consumer sense, rather than accountability-enhancing.³⁴ Some of the most consistent and effective advocates of open data, challenged to defend the value of open data for accountability, emphasize the historical importance of transparency through formal, institutionalized mechanisms like FOIA, rather than emerging new models of accountability based on peer use of generalized data dumps.³⁵ While this importance is correct and true, FOIA is fundamentally a part of the old model. It depends on judicially enforced institutionalized transparency, whether forced, as in FOIA, or organizationally instantiated in government, such as the Government Accountability Office and the various inspectors general; it requires relatively sophisticated participants, which work mostly on the models of the NGO or market-based journalists. The critical importance of that model is not undermined by concerns about open data; what is potentially threatened is the plausibility of the claim that there is a new, more fluid and voluntaristic model of absorbing transparency and converting it into accountability using raw data available over a network in computable form, whose effectiveness can depend on peer-based collaboration using the open data, rather than on organizationally instantiated work, building on institutionally enforced accountability mechanisms like FOIA.

The dynamics of the open data movement should give pause to any utopian project built on generalizing the experience of networked peer production to a broader range of public activities. The strong presence of market-oriented organizations using free government data to produce consumer services, on the one hand, and the dearth of instances of actual accountability-producing disclosures identified using this form suggests that open data strategies are susceptible to resistance and manipulation in ways that peer models are distinct from—and independent of—government or incumbent business cooperation need not deal with. FOSS developers or Wikipedia contributors do not generally depend on the collaboration of an institution whose power they threaten for any of their critical inputs. Where they do, as in the case of open standards and interfaces for FOSS that need to interact with industry standards, significant struggle is necessary—such as when FOSS developers fought against software patents in the EU, or the continuous pressure on standards organizations to assure that the relevant standards are available and open. But these are, in effect, political battles necessary to assure freedom to operate for the FOSS communities. Ushahidi or Safecast similarly are independent of the government for the public functions they provide. In all these cases, the collaborative model could circumvent and replace either market hierarchy or the state because it was not dependent on these incumbent organizations. With open data, as long as government agencies get to choose what data they do—and what data they do not—put out, that dependency exists. Given unequal and uneven data flows, the dynamics of open data will tend to harness effort toward applications that make government services more effective, or at least seem more effective, for citizens as consumers, and at the same time be less threatening to the officials themselves.

By contrast to the relative inefficacy of collaborative open data models, the more confrontational model of online leaking has played a larger and more significant role in imposing transparency on governments. Most famous in this regard is Wikileaks. Unlike the models of peer production, Wikileaks is a fairly small organization. It is nonetheless networked and global in its mission, personnel, and funding; and it has provided the pathway for some of the most important whistleblowing activities in decades. The resilience the site showed in the face of the multisystem attack it suffered after the release of the US State Department cables in late 2010 is a classic instance of distributed mobilization resisting state and corporate power. A series of comments from top US officials, from Vice President Joe Biden and Secretary of State Hillary Clinton as well as her office of legal counsel, to Chairman of the Senate Homeland Security Committee, Senator Joseph Lieberman, gave a hard shove to firms providing critical infrastructures to Wikileaks to withdraw service. The result was a multisystem attack, which, in turn, was met by a multisystem, international volunteer effort at resistance that kept the cables available despite the attack. (See Table 1.) While most of the blocks were susceptible to being resisted, the payment systems block was largely impossible to work around properly. Moreover, the legal attack remains a severe threat to this model. This applies to both Private Bradley Manning, the alleged leaker who was kept in solitary confinement under humiliating and degrading conditions for a year and still awaits trial, more than two years after his initial arrest; and on Julian

Table 1.

Date	Attack	Countermeasure
12/01/10	<i>Storage:</i> Amazon removes Wikileaks materials from its cloud-storage facility.	Wikileaks moves main storage to OVH in France.
12/02/10	<i>DNS:</i> EveryDNS, the DNS registrar which serves the Wikileaks.org domain, stopped pointing the domain name to Wikileaks' server.	Wikileaks uses numeric IP addresses updated through Twitter; ultimately resolves to Wikileaks.ch.
12/3-5/10	<i>Storage:</i> French Minister of Industry, Eric Besson, calls on a French company that provided storage for the cables after Amazon removed them on Dec. 3; by Dec. 5 OVH removes Wikileaks content.	Wikileaks moves again, this time to Sweden—initially the servers of the Pirate Party, a Swedish political party, and later to a Swedish storage provider. OVH resists and ultimately reinstates the data.
12/04-07/10	Paypal, Mastercard, Visa, stop processing donations for Wikileaks, cutting off funding.	Marginal responses using alternative pathways; mostly no response
12/20/10	<i>App store.</i> Apple removes a third-party app created to allow iPhone users to access and search Wikileaks embassy cables.	Jailbreaking/hacked apps still run on iPhone; Android apps still run; most access done over browser and open standards rather than app and proprietary standard.

Assange, who remains in legal limbo due to legal action unrelated to the publication but under a continuing threat of extradition to, and prosecution by, the United States. The Obama Administration's response to the Wikileaks case is typical of this administration's extraordinarily aggressive efforts to repress whistleblowers generally, having pursued more antiwhistleblower prosecutions than all prior administrations combined.

In combination, the open data and Wikileaks stories suggest a degree of caution about the potential and limits of anarchic, mutualistic solutions to core limitations of corporate or government power. States and companies, increasingly working together in a public-private partnership to retain dominance, can both subvert openness agendas and mount very effective combined assaults on anarchic models that severely constrain the effectiveness of the latter. Sometimes, where the powers are not aligned perfectly, these assaults may fail. When Viacom attacked YouTube using copyright law, YouTube was already owned by Google and because of the clash of economic giants, the site that offers such tremendous cultural and political subversion opportunities was sustained. But where the interests are severely imbalanced, or the state has been co-opted to the corporate agenda or vice versa, the combined power can be formidable indeed. Wikileaks, the recipient of the Amnesty International 2009 new media

award, has not been brought under, but has been severely hampered by this sustained, multisystem assault that the United States orchestrated.

Freedom Imperfect: Peer Mutualism, Market Power, and the Fallible State

Within, broadly speaking, democratic/liberal discourse, a core progressive claim is that the state is necessary to counter market-based power and provide for public goods that markets systematically fail to provide. From the breakup of Standard Oil and the emergence of food and drug regulation, following Tarbell and Sinclair, to the breakup of AT&T, the Microsoft case, and the feeble current efforts of reregulating the financial industry, the major opposition in the industrial information economy has been between free-market “conservatives” and progressives. The core claim of the latter is that, without intervention by the state, market-based organizations have superior power, which they can use to exploit the masses of consumers and workers, and, within those organizations in the case of executive pay, even against diffuse shareholders. Similarly, individuals who begin and go through life with unequal endowments of wealth and social privilege systematically capture a larger-than-fair share of the social pie (according to a range of theories of justice), requiring a properly delineated redistributive agenda to moderate or compensate for those disadvantages that reflect merely bad luck or skewed structure. The state, in this story, is the primary defense against concentrations of market power and self-reproducing structures of inequality. Furthermore, and independently, every society requires a steady flow of public goods. Defense and policing, education and basic science, core infrastructures and a well-functioning legal system are all public goods that any society needs, and that even the most market-oriented social order will require some form of public provisioning of public goods if it is not to underproduce these and therefore underperform its potential even as a market-based society.

The mid-1990s effort at renewal of the progressive agenda was defined by the Clinton-Blair New Democrat/New Labor synthesis of market-based government mechanisms. This approach accepted the core critique that the right leveled at the progressive state—that bureaucracy was highly imperfect, that politics could be and was often captured, and that the model for innovative government required adoption of more market-based solutions. Instead of spectrum allocation by regulators, we got spectrum auctions; instead of structural banking regulation, we got deregulation aimed at fostering self-regulation and cooperative regulation. All these were branded not as defeats for the progressive model, but as its modernization. By 1999, the Clinton-Blair New Democrats/New Labor duo had successfully normalized and generalized the Reagan/Thatcher revolution, cleverly co-opting the rhetoric of the right to gain power, while being co-opted by it in the process of deploying the power they won. It was under the Clinton Administration that the core pillars of financial industry deregulation that led to the collapse of 2008 were introduced, most prominently the repeal of the Glass-Steagall Act in 1999, and during which the Washington Consensus became

dominant. In Europe, the supposed merits of technocratic, economics-based policy making allowed the European Commission to capture increasing levels of influence, as technocracy came to determine ever-larger portions of what was once the domain of politics, and technocratic facility with implementing an agenda increasingly considered prepolitical became an independent basis for legitimacy on par with democratic accountability as a source of practical determination of policies with real political significance to the daily lives of Europeans. The Great Recession of 2008 burst the ideological bubble of efficient markets and the benefits of deregulation, though many of its adherents continue to spout its teachings; learning is difficult and ideology seems to hold up more robustly than the economy itself. As major US banks and financial actors required hundreds of billions of dollars of government funds to survive; as General Motors and Chrysler became state- and worker-owned firms for a short while in order to (successfully) save the companies, followed by rapid reprivatization, the ideologues and self-interested parties continued to spew the free-market rhetoric. The major European countries are undermining their own political stability by trying to impose austerity and limited expenditures in the hope of teasing the confidence fairy out of her deep slumber, as though markets themselves were well-functioning, and the problem was only the government side undermining confidence in these markets.

Faced with the spectacular failure of the financial markets, the impotence of so many of Europe's governments, and the *macht-politik* of the US state, where an allegedly progressive president prosecuting a boundless "War on Terror" blithely asserts the imperial power indefinitely to detain and even assassinate his own citizens without semblance of due process, we are left looking for an alternative to these two sources of power: the state and the market.

The basic problem a political theory that responds to this situation has to deal with is the infeasibility of removing power from even a reasonably well-functioning democratic state and a reasonably well-functioning market economy. Power and privilege pervade the running and manipulation of state power; no less so the running of market organizations. The difference between anarchists and libertarians is that the latter refuse to see the power wielded through property and contract as illegitimate. They refuse to see that minimal-state *laissez-faire* results in an illegitimate feudal plutocracy, just as the minimal monarchic state that preceded the rise of early modern monarchies resulted in feudal aristocracy. The modern liberal state was able first to break the latter, and, in its twentieth-century version, moderate the Dickensian versions of the former. The difference between anarchists, on the one hand, and a broad range of liberals (in the US sense) and social democrats is that the former emphasize the extent to which power is wielded through the state illegitimately, while the latter emphasize in varying degrees that power wielded through the state is (a) necessary for the functioning of a society; (b) necessary for the diffusion of nonstate concentrations of power, most importantly wealth and majoritarian power over minorities along a range of dimensions of potential domination; and (c) less prone to illegitimate use of power than other forms of stable, sustainable models of large-scale organization, like monarchies or aristocracies, autocracies or bureaucracies.

Peer mutualism in the networked information environment offers a potential alternative pathway to resistance that does not depend so completely on deploying a state increasingly seen as itself far from perfect. It presents itself as an alternative pathway for improving the functioning of public life; the delivery of social *desiderata*, in the face of the breakdown in the belief in either perfect markets or perfect government. In the 1990s, Microsoft was the Standard Oil of personal computers. It was planning to expand into web servers, web browsers, and “active” programming that could run small applications in web browsers. Microsoft fought and lost its antitrust battles in both the United States and Europe. In each case the state stepped in to counter market power. Formally, it succeeded; both the US and EU competition authorities won their cases. But neither victory was in fact determinative of the market structure; the remedies obtained in law were less significant than the developments in the “markets.” In particular, Microsoft failed to win its three major efforts to leverage its desktop monopoly to new markets. It lost its effort to control web server software to the Apache Software Foundation, a FOSS project; it lost its browser dominance to Firefox and the Mozilla Foundation, together with latecomer Google Chrome, (also FOSS, although with substantial corporate control); and it lost its active programming language to Java (FOSS since 2006) and, more importantly, the rise in server-side scripting, which is completely dominated by PHP and other FOSS programs. At the same time, the increasing shift to smaller-scale devices—first phones, then iPods, and most recently smartphones and tablets—has passed Microsoft by, and has located the hyperproprietary Apple in these smaller-device markets in a dominant position, albeit not quite as dominant as the one Microsoft occupied on the desktop in the 1990s. The primary competitive pressure there is from Android, which, like Chrome, is a corporate-sponsored, but still FOSS production model. It is simply too soon to tell whether the FOSS model of Android will successfully outshine Apple’s phenomenal success with the iPhone; and, if it does so, whether Android’s FOSS licensing will in fact result in a sufficiently robust development community that it will not be dominated by Google in ways that would undermine the very freedom the model promises. If both occur, then the story will simply repeat itself with Apple taking the role of Microsoft vs. FOSS. For now, the story of how Microsoft failed to leverage its initial monopoly from the 1990s into a similar position in the networked environment story presents a mixture of “the market takes care of it all” with “the nonmarket takes care of it all,” much more than the classic progressive story of government intervention succeeding in constraining corporate power or the neoclassical model of market-based competition alone doing so. A social intervention, based on peer production by many and diverse groups of developers practicing mutualism played a critical role that neither approach accommodates.

The question is how generalizable that solution is, and how independent, if at all, from being a particular hack, beneficial only under particular circumstances, on the background of a liberal state with a reasonably liberal property and market system. As to the first part of the question, we certainly have examples of both failures and successes. In my discussion of Kickstarter, I suggested how the model of peer funding is being used by artists who want to circumvent the power of the labels over the lives of

musicians. When we look at the future of journalism, peer-produced news and video reporting are permitting a much broader range of people of sufficient levels of engagement to circumvent the more traditional, market- or state-financed incumbents. By the same token, we see the failures of community Wi-Fi or open source social networking as examples of the limitations of distributed approaches. Just as government efforts to contain market power may fail because the market organizations are too adaptable and too well-rehearsed in preying on the inefficiencies and corruptions that infect the state, so too peer-based efforts to circumvent corporate power may fail because they do not garner sufficient contributions; or because large portions of the population simply accepts the market model as inevitable, and is skeptical about nonmarket models for provisioning goods.

The question of the dependence or independence of peer mutualism, or peer production, from the liberal state and market is a harder one. At baseline, it would be sufficient cause to celebrate peer mutualism if it offered a sustained path for improvement of freedom, innovation, and participation in liberal states and market economies. In such a view, the domain of mutualism still depends on the background of a more-or-less well-functioning state, utilizing excess capacity—time, energy, human capital—made feasible by the participants' already well-developed capabilities and personal security, all dependent on the state. I am not, however, convinced that mutualism is limited to the case of an already-established state or property system. The core finding of the decades of work in the Ostrom school of commons studies is the persistence and diversity of nonstate, nonmarket solutions to shared resources. The Spanish irrigation districts Elinor Ostrom wrote of long preceded the rise of the Spanish modern state, much less its recent transition to democracy. The lobster gangs of Maine that Acheson wrote of were violent and anarchic in the negative connotation of the term, but they functioned to manage the tragedy of the commons that would otherwise have been predicted for lobster fishing, in the teeth of a competing state-based legal system that did not, in fact, govern the practices. The Muslim Brotherhood's social services in Egypt before the Arab Spring were provided in the teeth of an illiberal, repressive, and corrupt state. The point is that, although the examples I offer here are aimed at the ways in which peer mutualism can improve on a baseline of a liberal state with a property-based market economy, the presence of such a state is not a precondition to such solutions emerging. A poorly functioning state, corrupt and with limited reach could still see voluntaristic, self-governing practices emerge to fill the voids left by the state. A highly effective totalitarian state may well suppress mutualism, for the same reason it might suppress free enterprise, to assure control and dependence on its centralized power; but again, in that context mutualistic self-organization becomes one of the few avenues for effective resistance, where feasible. In any event, the kind of mutualism I focus on here is offered as a solution space within the political-institutional space of the modern, liberal, reasonably well-functioning state, not because that state is a precondition to mutualism, but because mutualism is itself imperfect and incomplete; and the core point of "degrees of freedom" is the necessity of multiple, diverse, overlapping systems of affordance and constraint, the state and market among them, to permit people to live well and

pursue their individual and shared goals. So while a well-functioning state is not a precondition to mutualism; and a well-functioning property system is not necessary to enable peer production, both systems are necessary to enable people to live well. Introducing peer production and mutualism is then aimed at improving and completing the imperfection of these systems, rather than replacing them.

The pure utopian version of the political possibilities reflected by peer production would seek in peer production a complete solution to the imperfection of markets and states. If banking regulation is weak and regulators corruptible, while banks themselves are rife with manipulation and self-seeking behavior that renders the markets they operate systematically inefficient and exploitative (see Barclays Bank and the London Interbank Offered Rates (LIBOR) manipulation scandal), then the solution is mutualism. Some combination of Grameen Bank, Kickstarter, and the widespread use of credit unions can and should solve the problem. Mutual association among individuals who both need credit and savings capacity is the core solution, while states and markets can occupy edge roles for fancier market segments. If Internet service providers are extracting rents, failing to serve lower income populations, or exercising power over their customers so as to benefit, say, their own video services, then the answer is some form of Wi-Fi alliance among users that will circumvent the last mile bottleneck that the cable and telephone companies possess, rather than an appeal to a perennially disappointing Federal Communications Commission.

The practical utopian version would embrace a systematic effort to expand the domains of application of peer mutualism, while recognizing that it is a solution that is neither complete nor perfect. Externally, if we look at the banking system of a particularly successful use of mutualistic associations to circumvent the large banks, we see that credit unions, in fact, play a very large and, after the meltdown, rapidly growing, role in the banking system. In the United States by the end of 2012, millions of new accounts moved from the commercial banks to credit unions.³⁶ The recent growth reflects the fact that these credit unions have provided an alternative to the larger banks, which have been raising rates on their customers in an increasingly consolidated market of megabanks. Nonetheless, it is difficult to lump credit unions, many of which are largely experienced by their members in more-or-less similar terms as other bank customers, with mutualism; their mutualistic attributes are important, but often limited. Moreover, we see failures in the effort to generalize these online. Prosper.com is the most prominent of these examples. It is too soon to tell whether various efforts at peer lending can (a) create more perfectly mutualistic forms than credit unions and (b) generalize to the population as a whole. More clearly yet, systems such as health-care or education certainly present problems that mutualism can intervene in through discrete improvements, such as volunteers who improve the capacity of schools to offer individual attention or strengthening reading skills for younger ages; but these are not systems for which there is, at present, a clear path to mutualistic alternatives. Internally, we have seen in several of the studies that, while there are strong successes at scaling complex governance that combines debate, charisma, voting, and meritocratic influence to quite substantial projects, that does not mean that all projects are immune to illegitimate capture by a cabal or to subversion by market or state actors

who try to harness them to their own needs. While the self-assured assumption of critics—that anarchic peer processes will necessarily devolve to chaos or suffer a reemergent hierarchy—is clearly false, it is certainly likely that a significant number of projects that begin their lives as peer efforts will develop their own internal power dynamics that will make them in fact far from utopian models.

The implication of this practical utopian view of peer mutualism is to accept that no single system can be perfected to avoid the accumulation and application of illegitimate power; but no system is also a perfect technology of control; and through none of these systems is power always deployed illegitimately or abusively. Freedom and human flourishing exist not in attaining a single perfect system of governance, with perfect participation or perfect autonomy, social or market. Rather, freedom in such a world as we inhabit consists in the continuous manipulation of different systems of power to create spaces with relatively more freedom, and power flows with relatively more legitimacy, than any steady, generalized state of these systems could, by itself, provide. Imperfection and incompleteness of the systems we inhabit become integral to defining the spaces in which we can be free.

Understanding the social-institutional world we inhabit in these terms requires that we undertake the pursuit of autonomy and an ethical life individually, and freedom and justice as members of the societies we inhabit as a process of continuous design and redesign of the relationships and contexts we inhabit. The design target is to identify systems that exploit, rather than necessarily seek to eliminate, imperfections; that produce counterforces that cancel each other out, and obtain a series of temporary victories on behalf of some class of dominated subjects as available under the circumstances. This, in turn, will likely expose some other class to domination, and the cycle repeats.

In the context of this highly imperfect conception of social organization, peer production or peer mutualism is best understood as a degree of freedom in the design of the multisystem context we inhabit. Its sources of legitimacy and efficacy, humanity and autonomy are different from, and orthogonal to, the sources of these *desiderata* in state or in market behavior. Those who pursue peer solutions to hard problems need not seek a perfect or complete solution. There are none. If they are able to build a single instance of more liberating infrastructure or flow of capabilities; if they are able to manage it through some mixture of charismatic leadership, normative commitment to reason and debate, democratic process, or meritocratic collective self-understanding, then they have built a degree of freedom into the world we all occupy; they have allowed all of us a degree of freedom in the world of interlocking systems that we inhabit—a pathway we can use to bob and weave between the continuous flow of efforts of others, in particular others who occupy positions that allow them to project power onto us through market or state institutions that the peer solution has allowed us to dodge. For now, that may well be the best we can practically work toward; in a wide range of dimensions of life, even this limited goal is quite a bit; and in many domains of life it can be quite a bit more than simply a side show.

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Our experience with the networked world underscores that there are at least three species of practical anarchic response to the pervasiveness of power in states and markets. Only one of these—commons-based peer production—is even plausibly utopian; the other two are highly imperfect and morally ambiguous anarchic responses that nonetheless grab, and sometimes genuinely facilitate, degrees of freedom. The first of these latter two is pervasive illegality. This is the very uncertain freedom afforded by illegal immigration, speakeasies, or the closet in the teeth of immigration, prohibition, or sodomy laws. The second is radical resistance, whether legal or marginally legal, symbolized by a range of practices, from the clearly legal Wikileaks, through the more ambiguous, jurisdiction- and context-dependent cases of Anonymous and the Pirate Bay. As part of the real utopia discussion, I have spent this article on the utopian branch; but the other two, pervasive low-level illegality and radical resistance, both legal and illegal, are there, alive and kicking in both the real world and, very forcefully, the networked environment.

Decentralized, commons-based, peer production systems offer a degree of freedom: a set of affordances and design interventions that allow certain public goods to be provisioned in ways that allow for new forms of bobbing and weaving between the constraints of the state and the market, but also the constraints of more traditional forms of social organization like the church, the union, or the neighborhood association. The point is not that these new models of organization are the apotheosis of free human association. We will almost certainly come to find out, if we do not already know, that these too are, or will become, imperfect; that these too have the potential to create, transmit, deploy, and abuse power. The point is that they provide a new degree of freedom in the design of human systems, and that by providing this new degree of freedom, they provide new methods of improving human freedom and flourishing in those activities that depend on, or are built around, the public goods or functions that they can successfully provision on a model that, at least for now, in historical context, is less easily used for the reproduction of power than the state and more traditional market-based systems they displace, in whole or in part.

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