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Daniel Kreiss, Megan Finn and Fred Turner

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Daniel Kreiss

Yale Law School, USA

Megan Finn

University of California, Berkeley, USA

Fred Turner

Stanford University, USA

Abstract

In the last few years, a powerful consensus has emerged among scholars of digitally enabled peer production. In this view, digital technologies and social production processes are driving a dramatic democratization of culture and society. Moreover, leading scholars now suggest that these new, hyper-mediated modes of living and working are specifically challenging the hierarchical structures and concentrated power of bureaucracies. This paper first maps the assumptions underlying the new consensus on peer production so as to reveal the sources of its coherence. It then revisits Max Weber's account of bureaucracy. With Weber in mind, the paper aims to expose analytical weaknesses in the consensus view and offer a new perspective from which to study contemporary digital media.

Key words

bureaucracy, convergence, digital media, participatory culture, peer production, social networks

Introduction

Over the last few years, a utopian orthodoxy has once again taken hold in new media studies. As sites such as Facebook, Twitter, and Wikipedia have exploded onto the World

Corresponding author:

Daniel Kreiss, Yale Law School, PO Box 208215, New Haven, CT 06520, USA.

Email: daniel.kreiss@yale.edu

Wide Web, scholars and pundits alike have argued that we are entering a new era. In this 'Web 2.0' world, many claim that digitally enabled 'peer production' (Benkler, 2006) is democratizing economics, politics, and culture. The participation of citizen-amateurs in formerly professionalized activities seems to mark the 'open sourcing' of journalism (Gillmor, 2004), politics (Castells, 2007; Jenkins, 2006), science (Benkler, 2002), library science (Weinberger, 2007), and culture (Jenkins, 2006; Lessig, 2004). In each of these contexts, analysts argue that the power of 'everybody' (Shirky, 2008), the 'crowd' (Surowiecki, 2004), or the 'mob' (Rheingold, 2003) is breathing a new, populist life into the moribund practices of the pre-digital era.

Like these analysts, we marvel at the efflorescence of web-based peer production and the range of tasks networks of distributed individuals have taken up. But we do not believe that networked information exchange necessarily levels the social playing field, or that networked modes of social action are replacing their industrial antecedents. On the contrary, in this paper we aim to show that such claims rest on a set of historical and analytical assumptions that are not only inaccurate, but that have begun to obscure the ways in which technologically enabled peer production may be changing our lives for the worse.

The prevailing optimism with regard to peer production has been built on five claims:

- (1) Pursuing psychologically gratifying labor within peer production is an unqualified good;
- (2) Peer networks are an egalitarian and efficient means of producing information goods;
- (3) Peer production necessarily realizes ethical relationships between collaborators;
- (4) Peer production is equally suited to all domains of social activity;
- (5) Peer production is nonmarket and nonproprietary.

Each of these claims in turn encodes a critique of what many think of as peer production's organizational predecessor: industrial bureaucracy. If peer production offers flexibility and egalitarian interpersonal relations, bureaucracies seem to many to confront workers with rigid, hierarchical social relations. If bureaucracies hoard wealth and power, peer production distributes it. If bureaucracies breed psychologically divided 'organization men,' peer production supports the whole person. Above all, peer production promises to liberate the individual subjects of mass consumer culture by fashioning them into active producers.

In the pages that follow, we turn to the work of two of the most influential and rigorous analysts of the social impact of digital collaboration, legal theorist Yochai Benkler and media scholar Henry Jenkins, in order to map the elements of the emerging peer production consensus. We focus on Benkler and Jenkins because they attempt a comprehensive overview of the social effects of digital information production and, as we show, articulate assumptions that are at the heart of contemporary digital utopianism. We next revisit Max Weber's foundational writings, as well as key works by contemporary sociologists such as Paul du Gay, to consider some values served by bureaucracy. Finally, with these in mind we challenge the consensus around peer production and argue that the form is not bringing about the idealized society many consensus scholars suggest. We

conclude by articulating key questions that might ground a more critical approach to emerging forms of peer production.

What is the peer production consensus?

Before we can map the assumptions coalescing around contemporary digital collaboration, we need to first define what consensus scholars mean by the concept of ‘peer production.’ Benkler’s (2002, 2006) body of work distills a series of arguments about changing modes of digital information through his influential theory of ‘commons-based peer production.’ His work carefully details the mechanisms of peer production, and as such it is central to many analyses of and programs for networked collaboration in domains as varied as the online encyclopedia Wikipedia (Viégas et al., 2007), e-governance (Chadwick, 2009), journalism (Witt, 2006), gaming (Ondrejka, 2008), internet governance (Johnson et al., 2004), and the economics of online production more generally (Anderson, 2006).

For Benkler, the drastically falling cost of producing and distributing digital information supports unprecedented ‘social’ forms of information production. Networked digital technologies make it possible for information to be produced through ‘decentralized individual action – specifically, new and important cooperative and coordinate action carried out through radically distributed, nonmarket mechanisms that do not depend on proprietary strategies’ (Benkler, 2006: 3). A distinguishing feature of Benkler’s idea of peer production is his broadening of the definitions of ‘cooperation’ and ‘collaboration’ to include both conscious sharing practices and action that is not deliberately in concert with others. In this sense, individuals pursue their own information projects independently but in ways that digital media make public and allow to scale. Indeed, some of Benkler’s examples of peer production, from SETI@home and Wikipedia to Napster, can involve little, if any, contact with others:

Whenever someone, somewhere, among the billion connected human beings, and ultimately among all those who will be connected, wants to make something ... he or she can do so – alone, or in cooperation with others. He or she already has the capital capacity necessary to do so; if not alone, then at least in cooperation with other individuals acting for complementary reasons. (Benkler, 2006: 6)¹

This formulation leads to a key assumption of the consensus: that peer production is ‘non-market and non-proprietary’ and entails leveled collaboration. For Benkler and other scholars (Barabási, 2002; Carr, 2008; Tapscott and Williams, 2006; Watts, 2003), the falling costs of production means that digital information goods are increasingly produced in lieu of market compensation and property incentives. In other words, because individuals require so few resources to contribute to informational projects, they do not expect payment or property rights. Individuals essentially ‘gift’ their knowledge and informational labor to the public on sites including Wikipedia in return for ‘psychological well-being and gratification’ and ‘social connectedness’ (Benkler, 2006: 6). For Benkler, this is nothing short of a new non-market and cooperative mode of producing economic value that is transforming Adam Smith’s *The Wealth of Nations* into *The Wealth of Networks*.

At the same time, peer production scholars argue that collaborative information production occurs in lieu of formal management structures (Shirky, 2008). Digital technologies allow individuals to easily find on-line projects that are interesting and fulfilling for them. These tools also facilitate projects being broken into small component parts, appealing to people with varying educational, social, and time resources. The upshot is that millions of individuals can manage their own informational labor. These individual actions meanwhile rapidly aggregate into large-scale informational public goods. These seemingly novel characteristics lead many consensus scholars to distinguish this mode of production from the hierarchical bureaucracies of the industrial era. Benkler, for example, argues that because of the capital requirements of mass media, production not only required property rights and market incentives but also formal management (2006: 6). Now, however, the economics of information production have shifted, and everyone with access to the internet can become information and cultural producers simply by pursuing their own individual interests.

Scholars of the consensus in turn suggest that this new mode of production has a transformational effect on information, society, and individuals alike. Theorists argue that peer production is both more efficient and egalitarian than industrial bureaucracies. Thanks to the presumed flexibility and decentralized authority of the form, consensus scholars (e.g. Bauwens, 2008; de Valk and Martin, 2006) suggest that networked social production more readily adapts to fast-paced and complex informational environments. The classic statement of this point of view comes from the software world – ‘given enough eyeballs, all bugs are shallow’ (Raymond, 1998a). This phrase captures the logic behind peer production: divide a task into small enough modules, use digital media to distribute them, and allow individuals to self-select the best project. The massive number of contributors, meanwhile, safeguards the quality of contributions (Weinberger, 2007). Scholars argue that these collaborative, networked projects in turn are more democratic and egalitarian than formal, hierarchically-managed forms of information production (Bruns, 2008). For example, Benkler (2006: 105) contends that in the absence of formal rules a ‘hierarchy of meritocratic respect,’ ‘social norms,’ and ‘peer review’ guide participation. Scholars presume that these characteristics make peer production fundamentally democratic, increasing individual autonomy and decreasing the extent to which individuals are acted upon by others (Benkler, 2006: 133–4).

At the same time, these scholars celebrate the underlying ethical and socially and psychologically gratifying dimensions of peer production. Peer production serves ‘as a context for positive character formation’ in providing opportunities for citizens to learn and actualize virtuous behavior (Benkler and Nissenbaum, 2006: 395). Meanwhile, Benkler and others focus especially closely on the ways peer production rewards participants with feelings of belonging and purpose. As they gather around shared affinities and work collaboratively in a non-hierarchical, decentralized fashion, individuals lose the alienation that ostensibly plagued the denizens of the industrial era. Peer production offers the one-dimensional workers staffing bureaucracies the promise of a new world in their professional and social lives:

... one in which all the means of producing and exchanging information and culture are placed in the hands of hundreds of millions, and eventually billions, of people around the world,

available for them to work with not only when they are functioning in the market to keep body and soul together, but also, and with equal efficacy, when they are functioning in society alone, trying to give meaning to their lives as individuals and as social beings. (Benkler, 2006: 34)

The Wealth of Networks does not address in detail the ways peer production intersects with formal, bureaucratic organizations and Benkler's other work only hints at the interaction between these forms (Benkler, 2002). Henry Jenkins's (2006) notion of 'convergence culture,' however, articulates an increasingly accepted view that new media technologies empower formerly passive mass media audiences by providing them with the means to participate in the creation of culture. While Jenkins does not specifically draw from Benkler's analysis of 'peer production,' he details many similar 'technological, industrial, cultural, and social changes' (2006: 2). These shifts are associated with 'the flow of content across multiple media platforms, the cooperation between multiple media industries,' and the flexibility with which digital fans can now move across domains and even create their own content (2006: 2). From this account, Jenkins develops a model of 'participatory culture' in which corporate media producers and formerly passive consumers are 'participants who interact' (2006: 3).

While convergence theory offers a compelling analytical lens for examining the changing relationship between industry and audience, Jenkins also argues that the increasingly blurry distinction between digital production and consumption is empowering for mass media audiences. For example, while Jenkins notes that the media industry still possesses considerable power in this converged world, the emphasis of his analysis falls squarely on the ways that digital media enable unprecedented participation in the production of culture (2006: 26). The social world that Jenkins describes is one where 'convergence encourages participation and collective intelligence' as consumption increasingly becomes a 'networked practice' (2006: 244–5). In the process, Jenkins, like many scholars, casts digital platforms for fans as oppositional, libratory spaces, forces that corporate media producers must reckon with: 'producers who fail to make their peace with this new participatory culture will face declining goodwill and diminished revenues' (2006: 25).

Here we also find another element of the consensus: an analytical approach that proceeds by analogizing peer production across radically different social contexts. Scholars tend to assume that the same collaborative processes are at work and have similar effects in many domains of online activity. For example, arguing through the juxtaposition of cases in *Convergence Culture*, Jenkins posits that *Survivor* and *Star Wars* online fan communities model democratic *political* participation. Like Benkler, Jenkins simply celebrates all forms of digital collaboration as an emblem of a hoped-for social change. For both scholars, peer production epitomizes free association and free expression. It is an inherently anti-authoritarian, pro-democratic mode of cultural and informational production. Many scholars now assume that peer production resolves the key social and psychological problems of the industrial era and at the same time makes possible a society built on voluntary collaboration, the pursuit of psychological health, and the search for individual well-being. Benkler and Jenkins argue that this coordination in turn amplifies the power of ordinary citizens and fans alike. Together with the flexibility of digital technologies and the intrinsic social-psychological motivations for

individual participation the possibility of massive, distributed coordination of effort makes peer production a powerful and attractive alternative to bureaucracies in the consensus view. For many scholars this represents nothing short of a potential transformation of society.

The consensus reconsidered

As they focus on the digital future, however, scholars of the consensus have failed to analyze the relationship of contemporary techno-social forms to those of the past. We turn now to Max Weber's work, along with the scholarship of Paul du Gay (2000, 2005) and others (e.g. Goodsell, 2004; Kaufman, 1981; Wriston, 1980), to open up a new set of questions about the politics of peer production and suggest the links between this seemingly new mode of social organization and bureaucracies.

In the first decades of the 20th century, Max Weber wrote the now-canonical volumes *The Protestant Ethic and the Spirit of Capitalism* and *Economy and Society*. In them, he defined bureaucracies as centralized, hierarchical organizations that function according to rational, purposive laws and accomplish specific tasks in accordance with a larger social function. These tasks proceed on a grand scale through formalized, goal-oriented, and routine procedures. Individuals who hold office within bureaucracies have the specialized expertise necessary to carry out the duties of their positions. Those positions in turn are defined by the needs of the organization over and above the private concerns of the individual. These elements coalesced into the modern bureaucratic form over the course of several centuries and spread widely thanks to capitalist competition, the needs of a modern, administrative state, and demands for equal protection under the law (DiMaggio and Powell, 1983: 147).

Although many scholars echo Weber's famous critique of bureaucracy's dark side, the whole of his work presents a more complicated view than this reading allows for.² In *The Protestant Ethic* Weber vividly argued that bureaucracy and the rationalist spirit behind it had become an 'iron cage' that enslaved humanity (Weber, 2003: 181). Yet in his discussion of legitimate authority in *Economy and Society* he showed how bureaucracy replaced the irrationality of traditional forms of domination such as monarchies. In effect, it substituted stable rule systems for the whims of kings. Over the years, many scholars have emphasized the 'iron cage' side of Weber's analysis. Writers such as Gerth and Mills, for example, argue that bureaucratization fragments the soul and constrains individual autonomy (1998: 50).

In recent years, however, scholars have reinterpreted Weber's writings and the social value of bureaucracy more generally, especially with regard to the role it plays in the administration of the state.³ For example, du Gay (2000) argues that the state bureau is uniquely suited to providing for the routine needs of a large society. Du Gay also notes that scholars who criticize bureaucracies for impinging on individual autonomy assume that the same ethical precepts should govern conduct in all modes of life, public and private. Weber, he points out, believed that bureaucracy marked a distinct 'life order' and that this had substantial social benefits (Weber, 1998: 357; cited in du Gay, 2000: 9). According to Weber, the office in a bureaucracy requires the official to fulfill the requirements of a particular organizationally defined role according to pre-determined rules. In

the process, the office holder must temporarily set aside his or her own personal moral commitments (Weber, 1978: 1404). This in turn helps ensure the neutral administration of the bureau based on a codified body of law (Weber, 1978: 958). Because these laws are universal, explicit, and require the separation of public and private spheres of activity, a state bureaucracy promotes individual autonomy and equal protection for citizens.

Weber's work reminds us of the complexity of the bureaucratic form, and articulates how it is deeply embedded in and constituted by modern values such as equality under the law, meritocracy, and accountability. These are ideal characteristics of bureaucracies, and as such they rarely function in the real world as they do on paper. But, as Weber reminds us, they are also the ideals of the modern legal order. With that in mind in the pages that follow we use Weber's work to take a fresh look at the consensus view of peer production. We do so to not only challenge some of the celebratory core assumptions of the consensus, but also to suggest the ways that the rationalist spirit and bureaucratic power may yet infuse peer production. We detail five of these assumptions below, and bring Weber to bear on each.

Pursuing psychologically gratifying labor within peer production is an unqualified good

For many scholars peer production enables individuals to achieve a form of psychological wholeness unavailable in ordinary organizational life. Given the voluntary nature of peer production and the modular nature of informational tasks, consensus scholars argue, individuals can bring the full range of their passions, skills, and social and professional interests to bear on their labor and choose to participate on their own terms (Benkler, 2006: 69).

These scholars tend to construe the separation of private and professional selves as a social problem that digital networks will finally solve. Yet, Weber argued that bureaucracies evolved in part precisely to overcome the *lack* of distinct spheres in feudal life. Unlike the institutions of feudal society, the modern bureau was physically distinct from the home of the official, and this in turn materially and symbolically separated official and private activity (Weber, 1978: 957). For this reason, the life of the office is governed by a rational ethos distinct from that which governs the home (Weber, 1978: 1404). According to Weber, by fitting themselves into these roles bureaucrats do not so much fracture their psyches as rise above them: the office demands of the bureaucrat an ethos of service which protects the workplace from the individual's personal desires. Nepotism, self-dealing, and other forms of private gain are taboo. The formal, impersonal administration of the bureau produces 'a democratic, equalizing effect ...' (du Gay, 2005: 52). At the same time, this distinction protects the autonomy of private life. The values that make someone good at their job may not be the values that make them a good parent, for instance; thus, while the workplace is rationally organized, the individual is free to pursue private interests elsewhere (Weber, 1978: 957; du Gay, 2000: 21–2).

Many scholars argue that the fusion of public and private selves increases the agency and social power of those who participate in networked collaboration. Yet this may not always be the case. Weber's theorization of bureaucracy points to the ways in which the rule-based functioning of society may in fact be undermined and private autonomy

eroded when distinctions between domains of activity no longer apply. When each individual can act according to private morality, fairness in terms of equal protection under the law is undermined. As private citizens we depend upon professionals to meet our routine needs, and expect the same treatment as other individuals. As professionals we are accountable to those we serve and the rules of the society we live in.

Peer production in particular may undermine our private autonomy by extending our professional lives into formerly private arenas. Thus digital collaboration may tend to privilege commercial actors. Just as peer production makes it easy for individuals to bring together their private and public selves, it also turns formerly private pleasures such as playing games into forms of labor and allows work to enter into intimate domains (Galloway and Thacker, 2007; Illouz, 2007; Kline et al., 2003; Terranova, 2004; Turner, 2009). As this work suggests, the collapsing of public and private boundaries enables peer production to provide psychological and social compensation in lieu of the salaries and benefits associated with the bureaucratic domain of 'work.' Consider the case of book reviewers on Amazon.com. Research suggests that they often falsely imagine that their free reviews will lead to paying positions with professional publications (David and Pinch, 2006). Their fantasies contribute directly to Amazon's bottom line. Moreover, in voluntaristic peer networks where the lines between private and public are blurred individuals may have less ability to imagine themselves collectively standing in a particular relationship to capital. As such, they have few resources to recognize their activities as work and make claims on the value of their knowledge and creative labor.

Peer networks are egalitarian and efficient means of producing information goods

Proponents of peer production often depict voluntary networks as meritocratic while arguing that the specialization, professionalization, and credentialing upon which bureaucracies rely form a barrier to the egalitarian distribution of power and expertise. Yet, as Weber's discussion of bureaucracy helps reveal, the social dynamics that underlie voluntary forms of peer production involve a host of other forms of regulation that are less transparent than bureaucratic forms. Moreover, precisely because it is voluntary and usually temporary, peer production may not support the institutions upon which its own continued success depends.

Theorists of the consensus often imply that credentialing is incompatible with democracy. In many accounts scholars posit that peer production is more democratic than bureaucratic, industrial forms since it allows individuals excluded by credentialing to shape the creation of information. Yet, Weber reminds us that credentialing arose as part of the bureaucratic order when individuals demanded to be treated equally under the law (1998: 224). Under traditional or charismatic authority, a person's background, social connections, and status were the only keys to their future. In contrast, in the ideal bureaucratic form a person could achieve the proper credentials and thus social power whether they came from wealth or poverty, an educated family or an ignorant one (Weber, 1998: 200). In this way, credentialing actually undermines the power of class-based and purely social forms of capital.

At the same time, peer production theorists argue that bureaucratic forms are inefficient with respect to the production of information goods. According to these scholars and the crafters of phrases such as 'wikinomics,' expertise resides not in credentialed individuals, but in the crowds that aggregate and deploy expertise more effectively than individuals and formal organizations (Tapscott and Williams, 2006). However, these arguments overlook the ways that credentialing helps ensure that individuals have the skills they need to fill specialized and professional roles that meet routine social needs.

Yet many contemporary portrayals of peer production fail to account for the ongoing importance of bureaucratic institutions in fostering and preserving knowledge that actually affords peer production. Indeed, Shirky (2008) argues for the power of 'organizing without organizations' while ignoring the role that the university plays in his own analysis. The credentialed educators at universities provide a base set of skills necessary for many forms of peer production. As much recent work suggests, individuals who are attending or have graduated from colleges and graduate schools are the most active on-line (Hindman, 2009). For example, a study of the administrators on Wikipedia found that over 90 percent had at least completed some college courses (with over 30% holding either masters or doctorate degrees) (Baytiyeh and Pfaffman, 2009).

While we do not doubt that peer production would continue in lieu of formal institutions such as the university, it would probably not occur to the same extent and the quality of public information goods would likely suffer. The bureaucratic university often subsidizes the unpaid contributions of faculty and graduate students to sites such as Wikipedia. The previously cited study also shows that 44.3 percent of Wikipedian administrations were either full or part-time students (Baytiyeh and Pfaffman, 2009). Citizen journalists meanwhile can be intelligible to wider publics and achieve recognition precisely because so many of them have attended universities to hone their writing skills, develop critical faculties, and build their understanding of politics. Moreover, universities not only support and train many of the individuals who contribute to production peer networks; they also serve as brick-and-mortar homes for the collective wisdom of the crowd. Through the credentialing of professors and students, bureaucratic universities both vet that wisdom and allow it to accrue over time.

Peer production necessarily realizes ethical relationships between collaborators

Theorists of the consensus argue that rules and regulations make bureaucracies sclerotic over time. Yet, as Weber reminds us, the regulations of bureaucracy also help ensure fairness, accountability, and inclusivity. Bureaucracies strive to operate fairly through a structure of impersonal rules that transcend and constrain the actions of individuals. As Weber put it, authority within a bureaucracy 'is distributed in a stable way and is strictly delimited by rules concerning the coercive means, physical, sacerdotal, or otherwise, which may be placed at the disposal of officials' (1998: 196). This means that regulations hold the whims of individual members in check. On one level, this restraint grows out of the institution's rational pursuit of its goals. On another, bureaucracies are part of a larger modern legal order. States regulate bureaucracies in accordance with social values. The state can reach into the corporate bureaucracy and mandate the way a manager may treat her employees, for instance, giving society a weapon in the fight for workers' rights.

These rules – each explicit, accessible, and ultimately negotiable in the public sphere of politics – help ensure accountability. According to Weber this is fairly straightforward: the official is accountable to the rules of society, the organization, and those that apply to her position. The written and explicit nature of the rules theoretically ensures that those inside or outside of an organization have recourse to explicit mechanisms for dealing with violations (Weber, 1978: 219). If an organization runs afoul of the law in its treatment of workers, there are codified procedures in place to hold it accountable. For example, older, female, and minority workers can sue for wrongful dismissal or a failure to promote. Meanwhile, new regulations can be passed if social values change.

Rules and accountability in turn help ensure that organizations are inclusive. Within both peer networks and bureaucracies, individuals can decide to associate with whomever they choose, and thus may spend time with and promote the interests of those like themselves. Yet, unlike peer production, bureaucratic forms have a number of powerful mechanisms to mitigate the possible effects of this process. The USA, for instance, has developed a wide variety of legislation to protect people from being discriminated against on the basis of race, age, religion, disability, and gender. These laws protect principles of inclusivity and govern huge commercial and state bureaucracies.

By contrast, consensus theorists celebrate the shared social norms and standards of behavior that help govern networked collaboration. Many argue that the power of individuals to voluntarily join and leave peer production ensures they will be treated equably – if they were not, they would simply choose not to participate. In turn, many argue that concerns for reputation and group norms hold individuals accountable to one another while guaranteeing the flexibility of peer networks.

Looking at peer production through the lens of Weber, however, suggests that these peer governance mechanisms may not be as liberating as many theorists suggest. The absence of formal rules, for instance, allows charismatic individuals to determine who is appointed or dismissed according to fiat. The vesting of certain individuals with the power to govern and determine the forms of peer production pervades networks in cyberspace. Within the LINUX open-source project, for instance, Linus Torvalds has long served as a ‘benevolent dictator’ (Raymond, 1998b) who delegates responsibility, validates other individuals’ contributions, and makes overarching decisions regarding the development path of the code (S. Weber, 2004: 19). While of course these individuals are to some degree accountable to those they govern, without the law or a clear mechanism of accountability those injured by or excluded from peer production processes have very limited recourse. The only alternative for these individuals is to not participate.

The key point for our purposes is not so much that individuals rely on the devotion of their followers as a management tactic. Rather, we wish to stress that peer production is not as radically open in practice as it appears. Gatekeepers can subscribe to opaque governing norms and all too often these norms reinforce broader social patterns of discrimination and power.

Finally, it is worth remembering that criticism of bureaucracies often surfaces when they violate fairness, accountability, and inclusivity – precisely because we value and rely on the rules that enshrine and enforce these principles. We expect bureaucratic rules to guarantee fair processes of hiring and firing. We also expect corporations and the state to maintain clear and equitable procedures for the adjudication of disputes. As Cordella

argues, ‘bureaucracy is important for retaining democratic values’ (2007: 266). Yet, scholars of the consensus would have us believe that by turning away from the very rule-based mechanisms that seek to ensure inclusivity, equality, and fairness we will finally bring about democratic participation in public life.

Peer production is equally suited to all domains of social activity

While many theorists argue that peer production works equally well in such varied domains as politics, journalism, encyclopedia making, and software development, few consider whether there might be limits to this model of organization. As Weber recognized, the persistence and scale of the bureaucratic form make it uniquely suited to serve particular functions that make modern social life possible. Weber was clear on this point, arguing that ‘precision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction, and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration’ (1998: 214). Indeed, it was these very qualities that Weber both admired and feared as the inescapable implements of the rational-legal order. Yet, the noted absence of these qualities in peer production efforts suggests that informational projects may face serious limitations in some social domains, unless they adopt more formalized structures.

While it remains true that, as Weber himself noted, bureaucracies can direct their work toward their own survival, this does not mitigate his claim that they are technically superior in the rationalized pursuit of routine ends (1978: 979). While some may wonder how or even whether an organization defined by a formal chart will survive in a networked environment (e.g. Greenwood and Lawrence, 2005: 495), it is clear that bureaucracies are exceptionally well-suited to meeting recurrent needs. This is clear in the domain of state bureaus, where governmental agencies are responsible for everything from disaster management and monitoring the safety of drugs to regulating the economy. Indeed, it is when bureaucracies fail to effectively perform this otherwise taken-for-granted work that pundits tar them as ineffective.

It is precisely the characteristics that ensure that bureaucracies can perform these functions that peer production may most be lacking. Comparatively ephemeral peer networks simply cannot concentrate and consistently deploy the resources that bureaucracies can with their goal-oriented routines, professionalized staff, and stable operating procedures. Indeed, yet again there may be an affinity here between peer production and charismatic forms, which are ‘the very opposite of the institutionally permanent’ and for that reason are ‘fated ... to give way to the powers of tradition or of rational socialization’ (Weber, 1998: 248–53). For example, while we recognize the economic and technological value produced by some peer production projects, there have been some significant failures. Many efforts to implement forms of peer produced citizen journalism proved more complicated than originally anticipated (Rosen, 2007). Howard Dean’s campaign for the democratic nomination in 2004, a genuinely innovative effort where online peer collaboration helped the candidate become the frontrunner for a time, collapsed after the 2004 Iowa caucuses in large part because it could not effectively manage a field operation (Kreiss, 2010).

While there are many factors at play in each of these examples, we mean only to suggest that peer production may perform well in some domains, but not all. Quality journalism depends on a host of resources that may well be best concentrated in formal, bureaucratic organizations. These include human expertise, money, and a newsroom culture that supports aggressive, critical reporting on matters of public concern. Likewise, political campaigns must function in a complex institutional environment that holds them accountable to many other actors. Furthermore, as Duguid (2006) points out in the context of three open source cultural projects, peer processes that work well in the manufacture of software may work hardly at all in other domains. In sum, by looking to a common technological denominator consensus, scholars mask the very different work peer efforts do in varied settings and the different institutional terms under which these projects must operate.

Indeed, many consensus scholars overlook the ways that a number of peer production efforts have institutionalized processes that were formerly defined by freely-associating individuals. As Loubser and den Besten (2008: 2) argue, Wikipedia has increasingly turned to ‘administrators and bureaucrats’, along with a host of technical features, to help manage peer collaboration and ensure that the effort is sustainable.

Peer production is nonmarket and nonproprietary

Many analysts proceed as if peer production networks are by their very nature nonmarket, nonproprietary, and fundamentally antagonistic to large-scale industrial bureaucracies. We disagree. While peer production may at times have these characteristics, this description of the form only works if analysts abstract it from the economic institutions within which it is embedded. Yet, Weber’s body of work clearly cautions us against this. There is simply nothing to suggest that peer informational projects must be nonmarket and nonproprietary, that other economic forces cannot leverage what they produce, or that they will not become part of bureaucratic systems. As Berry argues in his insightful review of *The Wealth of Networks*, if networks ‘are indeed so wealth-generating, they will be co-opted into mainstream “industrial” ways of production. To paraphrase Steve Jobs, the corporate world may soon provide peer-production for the rest of us’ (2008: 369). To say this is simply to reiterate Weber’s broader point about the ‘iron cage’: the rational-legal spirit and its organizational form are not only still with us – they have proven remarkably adaptable.

This accords with the findings of a recent body of work that looks at the interactions between peer and bureaucratic forms – and the ways peer production is embedded in a market for both free and cheap labor and used to produce proprietary goods. In many cases peer production is not so much replacing bureaucratic forms as co-evolving with them. Both macro- and micro-studies in a variety of fields consistently show how and why formal organizations utilize digital peer production. At the macro level, scholars of the network economy suggest how the free labor of peers is commodified by those formal organizations that, through their relationship to capital, extract value from them (Terranova, 2004). Schäfer, for instance, even argues that peer participation is better conceptualized in terms of an ‘extended cultural industry’ (2008: 17). At a more micro level an emerging body of literature examines the mechanics by which for-profit

institutions engage with and make use of technologically-enabled social worlds (van Dijck, 2009). For example, Zittrain (2008) documents how powerful organizations outsource profitable and ultimately proprietary tasks to cheap or even free networked labor. In the process, peer laborers pursuing granular tasks are alienated from the informational projects they are working toward and even often unaware as to whose ends they serve (Zittrain, 2008).

In this sense, peer labor seems to both depend on and, at times, extend existing concentrations of resources. This goes beyond the economic realm to the role of peer production in democratic and cultural practice. Many scholars simultaneously theorize and call for networked democracy without examining the processes by which commercial, civilian, and governmental worlds come together in digitally mediated spaces. For example, many scholars of the political process argue that digital networks facilitate new forms of collective action in the electoral process and governance. However, scholars often overlook the ways that elite and bureaucratic interests convene and structure peer production toward their own ends – often through hiring political consultants who specialize in mobilizing online niche publics. As Hindman's analysis of 'open source politics' reveals, much of political peer production is premised on 'investments by traditional players, the dominance of a few collaborative efforts over all the rest, and the elite nature of emergent participants in the system' (2007: 193).

Conclusion

Many of us who study new media still proceed too often from the assumptions that peer production is radically participatory, egalitarian, efficient, and psychologically fulfilling. As a result, we all too easily echo the line that peer production is revolutionizing the way that we produce and consume information, democratizing culture, and fostering a robust public domain. And in that way, we join a long line of engineers and marketers of new technologies. The personal computer, the early Internet, and of course, the airplane, the railroad, and the telegraph before them, were all hailed as having much the same egalitarian potential.

For these reasons, we believe that scholars need to revisit Max Weber. Although he wrote a hundred years ago, Weber raised a series of issues with strong contemporary implications. For example, Weber noted not only the dangers of bureaucracy, but also the social values the form upholds and the functions that it serves. Today, we need to consider peer production not only as a challenge to bureaucratic forms, but as a complement and, at times, even an extension of their missions.

We also need to examine peer production with the same rigor that Weber applied to the bureaucratic form. For one thing, we might demand of peer production the same kinds of attention to inclusivity and accountability that have long characterized bureaucracies. For another, we might begin to have a critical conversation around whether the blurring of public and private life online and off does in fact lead to greater social satisfaction. We might also begin to explore the ways in which networked modes of expertise depend on persistent, institutionalized modes of credentialing and knowledge production. We could ask under what conditions participating in peer production constitutes a form of voluntary activity and under what conditions it represents a quietly coercive expansion of the

workplace into everyday life. Finally, we might begin to ask whether peer production may not simply be a break from, but also an extension of, previous forms of social and economic organization.

Like many scholars, we are amazed at the ubiquity and power of peer production. Yet, we doubt its *revolutionary* potential and fear that in some respects it is taking us in the wrong direction. To explore these issues, scholars need to interrogate peer production through a new set of research questions. What are the consequences of peer production's failure to develop institutional mechanisms that secure bureaucratic values such as inclusion, explicit rule-making, accountability, and institutional persistence? What are the social implications of the fact that digital technologies seemingly give new energy to charisma-driven clans? What ideological work does the illusion that everyone can share equally in the spoils of peer production perform? How do digital networks exist within the institutional matrix of everyday life? Finally, how may peer networks serve less as alternatives to Weber's iron cage of rationalization, than as implements of its diffusion?

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Notes

1. There are differences between Benkler's conceptual approach and other theories of networked production. Peer production does not require any 'ties' at all between people, which is the focus among theorists of 'social networks.' Peer production also includes individuals acting alone and on many one-time projects. This distinguishes it from what organizational sociologists describe as networked exchange, which entails 'repeated, enduring exchange relations' (Podolny and Page, 1998: 59) or 'indefinite, sequential transactions within the context of a general pattern of interaction' (Powell, 1990: 301).
2. For a detailed analysis of the scholarly uptake of Weber's work on bureaucracy, see Roth (1977).
3. See, for example, special issues of *Organization* (2004: 11(1)), which looked to understand the role of bureaucracy in the information age, and *Organization Studies* (2005: 24(4)), which examined Weber's contributions in light of new theoretical developments in the field.

References

- Anderson C (2006) *The Long Tail: Why the Future of Business is Selling Less of More*. New York: Hyperion.
- Barabási A (2002) *Linked: The New Science of Networks*. Cambridge, MA: Perseus.
- Bauwens M (2008) The political implications of the peer to peer revolution. *Knowledge Politics Quarterly* 1(2): 1–24.
- Baytiyeh H, Pfaffman J (2009) Why be a Wikipedian? *Proceedings of the 9th International Conference on Computer Supported Collaborative Learning* 1. New York: ACM, 434–43.

- Benkler Y (2002) Coase's penguin, or, Linux and the nature of the firm. *The Yale Law Journal* 112: 367–445.
- Benkler Y (2006) *The Wealth of Networks: How Production Networks Transform Markets and Freedom*. New Haven, CT: Yale University Press.
- Benkler Y, Nissenbaum H (2006) Commons-based peer production and virtue. *The Journal of Political Philosophy* 14(4): 394–419.
- Berry D (2008) The poverty of networks. *Theory, Culture and Society* 25(7–8): 36–7.
- Bruns A (2008) *Blogs, Wikipedia, Second Life and Beyond: From Production to Produsage*. New York: Peter Lang.
- Carr NG (2008) *The Big Switch: Rewiring the World, From Edison to Google*. New York: W.W. Norton.
- Castells M (2007) Communication, power and counter-power in the network society. *International Journal of Communication* 1: 238–66.
- Chadwick A (2009) Web 2.0: New challenges for the study of e-democracy in an era of informational exuberance. *I/S: A Journal of Law and Policy for the Information Society* 5(1): 9–41.
- Cordella A (2007) E-government: Towards the e-bureaucratic form? *Journal of Information Technology* 22(3): 265–74.
- David S, Pinch TJ (2006) Six degrees of reputation: The use and abuse of online review and recommendation systems. *First Monday* 11(6), URL (consulted 10 Jan. 2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1315/1235>
- de Valk G, Martin B (2006) Publicly shared intelligence. *First Monday* 11(9), URL (consulted 10 Jan. 2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/1397/1315>
- DiMaggio P, Powell WW (1983) The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review* 48(2): 147–60.
- du Gay P (2000) *In Praise of Bureaucracy*. London: Sage Publications.
- du Gay P (ed.) (2005) *The Values of Bureaucracy*. New York: Oxford University Press.
- Duguid P (2006) Limits of self-organization: Peer production and 'laws of quality'. *First Monday* 11(1), URL (consulted 10 Jan. 2010): http://firstmonday.org/issues/issue11_10/duguid/index.html.
- Galloway AR, Thacker E (2007) *The Exploit: A Theory of Networks*. Minneapolis: University of Minnesota Press.
- Gerth HH, Mills CW (1998) Introduction: The man and his work. In: Gerth HH, Mills CW (eds) *From Max Weber: Essays in Sociology*, London: Routledge, 3–76.
- Gillmor D (2004) We the media: Grassroots journalism, by the people, for the people. URL: <http://www.authorama.com/we-the-media-1.html>
- Goodsell CT (2004) *The Case for Bureaucracy: A Public Administration Polemic*. Washington, DC: CQ Press.
- Greenwood R, Lawrence TB (2005) The iron cage in the information age: The legacy and relevance of Max Weber for organization studies. *Organization Studies* 26: 493–9.
- Hindman M (2007) 'Open-source politics' reconsidered: Emerging patterns in online political participation. In: Mayer-Schönberger V, Lazer D (eds) *Governance and Information Technology*. Cambridge, MA: MIT Press, 183–211.
- Hindman M (2009) *The Myth of Digital Democracy*. Princeton, NJ: Princeton University Press.
- Illouz E (2007) *Cold Intimacies: The Making of Emotional Capitalism*. Malden, MA: Polity Press.
- Jenkins H (2006) *Convergence Culture*. New York: New York University Press.

- Johnson DR, Crawford SP, Palfrey, JG, Jr (2004) The accountable net: Peer production of internet governance. *Virginia Journal of Law and Technology* 9(9): 6–33.
- Kaufman H (1981) Fear of bureaucracy: A raging pandemic. *Public Administration Review* 41(1): 1–9.
- Kline S, Dyer-Witford N, and De Peuter G (2003) *Digital Play: The Interaction of Technology, Culture, and Marketing*. Montréal: McGill-Queens University Press.
- Kreiss D (2010) Taking our country back? Political consultants and the crafting of networked politics from Howard Dean to Barack Obama. Dissertation, Stanford University, Department of Communication.
- Lessig L (2004) *Free Culture*. New York: Penguin Press.
- Loubser M, den Besten M (2008) Wikipedia admins and templates: The organizational capabilities of a peer production effort. Paper presented at the 2008 European Academy of Management Conference in Ljubljana and Bled on 14–17 May 2008, URL (consulted 10 Jan. 2010): <http://ssrn.com/abstract=1116171>
- Ondrejka C (2008) Education unleashed: Participatory culture, education, and innovation in second life. In Salen K (ed.) *The Ecology of Games: Connecting Youth, Games, and Learning*. Cambridge, MA: MIT Press, 229–52.
- Podolny JM, Page KL (1998) Network forms of organization. *Annual Review of Sociology* 24: 57–76.
- Powell WW (1990) Neither market nor hierarchy: Network forms of organization. *Research in Organizational Behavior* 12: 295–336.
- Raymond ES (1998a) The cathedral and the bazaar. *First Monday* 3(3), URL (consulted 10 Jan. 2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/578/499>
- Raymond ES (1998b) Homesteading the noosphere. *First Monday* 3(10), URL (consulted 10 Jan. 2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/621/542>
- Rheingold H (2003) *Smart Mobs: The Next Social Revolution*. Cambridge, MA: Perseus.
- Rosen J (2007) What I learned from assignment zero. PressThink, URL (consulted 10 Jan. 2010): http://journalism.nyu.edu/pubzone/weblogs/pressthink/2007/10/09/what_i_learned.html
- Roth G (1977) Introduction to the new edition. In Bendix R, Turner BS (eds) *Max Weber: An Intellectual Portrait*. Berkeley: University of California Press, xiii–xxxvii.
- Schäfer MT (2008) Bastard culture! User participation and the extension of cultural industries. Dissertation, University of Utrecht Department for Media and Culture Studies, URL (consulted 10 Jan. 2010): <http://www.mtschaefer.net/entry/defending-my-bastard-culture/>
- Shirky C (2008) *Here Comes Everybody*. New York: Penguin Press.
- Surowiecki J (2004) *The Wisdom of Crowds*. New York: Little, Brown.
- Tapscott D, Williams AD (2006) *Wikinomics: How Mass Collaboration Changes Everything*. London: Portfolio.
- Terranova T (2004) *Network Culture: Politics for the Information Age*. Ann Arbor, MI: Pluto Press.
- Turner F (2009) Burning Man at Google: A cultural infrastructure for new media production. *New Media and Society* 11 (1–2): 73–94.
- van Dijck J (2009) Users like you? Theorizing agency in user-generated content. *Media, Culture & Society* 31(1): 41–58.
- Viégas FB, Wattenberg M, and McKeon MM (2007) The hidden order of Wikipedia. In: Schuler D (ed.) *Online Communities and Social Computing, 2nd International Conference, HCII 2007*. New York: Springer, 445–54.

- Watts DJ (2003) *Six Degrees: The Science of a Connected Age*. New York: W.W. Norton.
- Weber M (1978 [1925]) *Economy and Society: An Outline of Interpretive Sociology* (Roth G, Wittich C, eds). Berkeley: University of California Press, 212–99, 956–1003, 1381–462.
- Weber M (1998) *From Max Weber: Essays in Sociology* (Gerth HH, Mills CW, eds). London: Routledge, 3–76.
- Weber M (2003) *The Protestant Ethic and the Spirit of Capitalism*. New York: Dover Publications.
- Weber S (2004) *The Success of Open Source*. Cambridge, MA: Harvard University Press.
- Weinberger D (2007) *Everything is Miscellaneous*. New York: Henry Holt and Company.
- Witt L (2006) Constructing a framework to enable an open source reinvention of journalism. *First Monday* 11 (6–5), URL (consulted 10 Jan. 2010): <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewArticle/1338/1258>
- Wriston MJ (1980) In defense of bureaucracy. *Public Administration Review* 40(2): 179–83.
- Zittrain J (2008) Ubiquitous human computing. *Philosophical Transactions of the Royal Society* 366: 3813–21.

Daniel Kreiss is a Fellow, Information Society Project and Postdoctoral Associate at Yale Law School. His research focuses on the interaction of digital media and American political practice.

Megan Finn is a PhD Candidate at University of California, Berkeley's School of Information, who studies post-disaster information environments. Her dissertation research focuses on information practices following earthquakes in California's history. [email: megfinn@ischool.berkeley]

Fred Turner is Associate Professor of Communication at Stanford University and the author of the book *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network and the Rise of Digital Utopianism*. [email: fturner@stanford.edu]