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Free, Open Source Software Advocacy as a Social Justice Movement: The Expansion of F/OSS Movement Discourse in the 21st Century

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Free, Open Source Software Advocacy as a Social Justice Movement: The Expansion of F/OSS Movement Discourse in the 21st Century

John L. Sullivan

ABSTRACT. This article argues that the rhetorical discourse found among free, open source software (F/OSS) movements is being expanded beyond the traditional constituency of software hackers to encompass a larger group of non-expert users and other advocacy organizations. In so doing, the initial goals of free software advocates are being dramatically expanded to include broader aims of digital freedom and social justice. Utilizing the concept of social movements from political sociology, this article first outlines the key aims and discourses surrounding the free software movement by discussing the emergence and development of F/OSS efforts such as the GNU/Linux operating system and the GNU Public License (GPL). Second, I provide examples of how the free software discourses have been adopted, altered, and expanded by a number of organized groups over the past decade. These groups, such as the Creative Commons, digital privacy advocates, and global development agencies, have adopted some of the core concepts of free software, while greatly expanding their meaning and purpose to suit their own advocacy aims. Finally, I argue that the adoption of free software discourse among these newer groups is also having a recursive effect upon the free software movement by encouraging free software advocates to conceptualize F/OSS as part of a broader movement of digital rights and social justice. In the conclusion, the prospects for the emergence of a larger technological and cultural freedom movement in the future are assessed.

KEYWORDS. Creative Commons, digital rights, free software, Linux, social justice, social movement

The past 15 years have seen an enormous growth in computer systems and devices, most of which are proprietary intellectual products. A group of libertarian-minded programmers have joined a debate about how to short-circuit the rising tide of closed, proprietary computer code that administers the functions of computers and their interactions in cyberspace (Lessig, 2000).

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Free, open source software (F/OSS) advocates have countered the market dominance of closed, proprietary software systems by developing and/or encouraging the distribution of alternatives to these closed systems. Some of the most successful efforts of this movement have been a rival computer operating system (Linux) and other open source software alternatives that are distributed freely over the Internet. This article explores the advocacy of “free, open source software”—meaning software that reveals its source code to the user. I argue here that F/OSS advocacy can be understood as a social movement, and that this movement is beginning to expand both in size and purpose beyond the initial aims of free software advocacy to encompass a broader social justice mission.

The article is divided into two parts. First, theories of social movements from the political sociology literature are outlined, focusing specifically on the rise of computerization movements since the 1980s. Drawing upon recent research into free and open source software programmers, users, and communities, this section explores the philosophy, discourse, and organization of free and open source software movements. Key developments include the creation of the GNU/Linux operating system in the 1990s and the invention of the GNU General Public License (GPL) as an alternative to existing software copyright regimes. The second part of the article introduces the notion of social justice into the discussion of F/OSS as a social movement. Through an examination of various conceptualizations of the notion of “social justice,” including John Rawls’s (1971) classic *A Theory of Justice* as well as more contemporary configurations of the concept, I will outline some of the ways in which the current formulations of free software movement fit this definition. The incorporation of social justice goals into the free software movement is particularly evident in places where the advocacy of free software has expanded beyond the relatively small community of software programmers (or “hackers”) to encompass a larger group of non-expert users and related organizations.

In this second section, I will also outline a number of recent free software projects and

F/OSS offshoot organizations that demonstrate an important shift in F/OSS advocacy; away from simply advocating for free software as an end in itself, and instead advocating for F/OSS adoption, because doing so connects advocates to a wider array of issues such as free speech and digital commons advocacy. The interests of F/OSS advocates have begun to merge and overlap with the interests of the free culture/digital commons advocates in the past half-decade, with increasing cross-fertilization across these two groups. A number of groups have even adopted the discourse of the open source movement in their own discourse, further blurring the lines between F/OSS and other digital rights movements such as anti-copyright and Net neutrality groups. These issues more closely align the current aims of F/OSS with more free culture and digital rights initiatives, suggesting the possible emergence of a larger umbrella movement for cultural and software freedom on the horizon.

COMPUTERIZATION AND SOCIAL MOVEMENT THEORIES

This essay makes two, inter-related claims: first, that free software advocacy is a social movement and, second, that the goals and discourses of this movement have been expanded to address social justice concerns. The first claim is not necessarily new: scholars have begun recently to think of free and open source software advocacy as a coherent, though not necessarily monolithic, social movement. The second claim—that the discourse of free software advocacy is developing in the direction of social justice concerns—is a novel one that will be developed further in the discussion of the discourse, organizations, and the direction of F/OSS advocacy. First, however, to understand how free software advocacy can be understood as a social movement, a brief synthesis of the literature of social movement theory is necessary.

There is a vast body of theory and research into social movements within political sociology, which has approached the definition of social movements from a number of different perspectives (Diani, 2000). Killian and

Turner (1957), for instance, conceptualized social movements broadly as “a collectivity acting with some continuity to promote or resist a change in the society or organization of which it is a part” (p. 223). This definition accounted for the presence of “movement organizations,” but was not necessarily synonymous with them (in other words, social movements can exist and thrive without existing bureaucratic organizations to represent their interests or support their goals). A second, highly influential strand in theorizing social movements, called resource mobilization theory (RMT), focused similar attention on social collectivities, but emphasized the special role of organizations and their importance in securing resources for the perpetuation of social movements (McCarthy & Zald, 1977; Zald & McCarthy, 2002). The key contribution of McCarthy and Zald’s model was that it “reoriented thinking about the structure of social movements by promoting awareness that organizations provide a basis for mobilization” (Caniglia & Carmin, 2005, p. 202). Without the support of organizations, the stability and perpetuation of social movements is extremely difficult, if not impossible.

While each of these conceptualizations of social movements places a slightly different emphasis on the construction and maintenance of these movements, they all share these fundamental components: collective or joint action, change-oriented goals (or the expression of these goals at the very least), some degree of organization or non-institutional collective action, and some degree of “temporal continuity” (Snow, Soule, & Kriesi, 2004, p. 6). For the purposes of our discussion of F/OSS, therefore, the following definition will be used:

Social movements can be thought of as *collectivities acting with some degree of organization and continuity outside of institutional or organizational channels for the purpose of challenging or defending extant authority, whether it is institutionally or culturally based, in the group, organization, society, culture, or world order of which they are a part.* (Snow et al., 2004, p. 11; emphasis in original)

This conceptualization of social movements is broad and inclusive, referring to collectivities that are both highly bureaucratized and also more anarchic and diffuse. Free and open source software advocacy is more on the diffuse end of the spectrum in terms of its goals and methods (something which will be discussed in detail later), but it nevertheless relies on a number of key organizations in order to pose a challenge to “extant authority,” as outlined in Snow et al.’s definition.

There are, of course, many types of social movements, differing in kind, scope, and purpose. Technological movements are particular kinds of social movements in that they centralize the adoption and utilization of technological devices. Computerization movements are a particular subset of these, and in general, advocate for the adoption of computers (or specific types of computer hardware or software) in order to achieve some larger societal goals. Elliott and Kraemer (2008) define a computerization movement as “a type of movement that focuses on computer-based systems as the core technologies, which their advocates claim will be instruments to bring about a new social order” (p. 3). Here the goal of social transformation typical of most social movements is brought about by the use of computers or other forms of technology. Like other social movements, computerization movements rely on resources and discourse in order to mobilize adherents and to spread their message.

Social movements are sustained by a number of different means, including but not limited to monetary resources, organizational support, member enthusiasm, and exposure in the media. A number of social movement scholars have further specified the processes by which social movements are created and sustained over time, citing not only access to material resources (such as labor, capital, and communication links) but also the types of ideas that serve to define and mobilize these movements (Benford & Snow, 2000; Gamson, Croteau, Hoynes, & Sasson, 1992; Snow, 2004; Snow & Benford, 1988). This “framing” perspective

views movements as signifying agents engaged in the production and maintenance

of meaning for protagonists, antagonists, and bystanders. Like local governments, the state, representatives of the authority structures, the media, and interested publics, social movements are regarded as being embroiled in “the politics of signification.” (Snow, 2004, p. 384)

Framing describes the process by which actors in a social movement “assign meaning to and interpret relevant events and conditions in ways that are intended to mobilize political adherents and constituents, to garner bystander support, and to mobilize antagonists” (Snow & Benford, 1988, p. 198). The public articulation of these “collective action frames,” argues Snow (2004), can have a transformative effect for a social movement in the sense that it defines the meaning of the movement for both insiders and outsiders, thereby providing the movement with a sense of identity and group cohesion. In fact, the creation and survival of social movements largely hinges upon the collective contributions of individual members who become involved with the movement because it “resonate[s] with their personal values and beliefs” (Caniglia & Carmin, 2005, p. 205). Framing directs scholars’ attention not only to the internal discourses among members of social movements about their own activities and motivations, but also to the rhetoric in the media about these movements. Attracting the attention of the press is often a critical strategy for social movements to gain traction and achieve their goals, though inexperience and naiveté when dealing with the media can sometimes backfire and hurt the movement’s image and viability (see Gitlin, 2003, for a powerful example of this).

Previous scholarship in computerization movements has demonstrated that the framing perspective can be quite useful in understanding the degree of success and cohesion in these types of movements as well. As Kling and Iacono (1988) pointed out in their initial article on the subject, computerization movements are not simply guided by a desire for the expanded use of computers—instead, they “communicate key ideological beliefs about the links between computerization and a preferred social order which helps legitimize computerization for

many potential adopters” (p. 227). These core motivational ideologies are regularly communicated from movement leaders and luminaries to the faithful, as well as among and between members of the movement. These beliefs may even be institutionalized into structures that maintain and propagate them in time. In their early groundbreaking work, Kling and Iacono (1988) lay out a number of core ideological beliefs that lay at the heart of computerization movements, each of which associates computerization with a larger utopian ideal toward which society should strive. Some of these beliefs include the following:

- Computer-based technologies are central for a reformed world.
- Improved computer-based technologies can further reform society.
- More computing is better than less, and there are no conceptual limits to the scope of appropriate computerization.
- No one loses from computerization.
- Uncooperative people are the main barriers to social reform through computing.

Throughout the 1990s, Iacono and Kling (2008) further developed the notion of computerization movement (CM) frames by eventually combining the notion of “collective action frames” and what Orlikowski and Gash (1994) refer to as “technological frames” (p. 174). Technological frames, according to Bijker (1997), are ways of describing how social meaning is attached to technical artifacts by attaching social actors together in particular types of working relationships. These social dynamics exist only through discourse, argues Bijker. Iacono and Kling (2008) combined these two ideas to create the concept of “technological action frames.” They defined these as “multi-dimensional composite understandings—constituted and circulated in language—that legitimate high levels of investment for potential users, and form the core ideas about how a technology works and how a future based on its use should be envisioned” (Iacono & Kling, 2008, p. 75). These frames are then circulated via public discourse and may then become institutionalized within organizations and groups. Thus the remaining

two elements of their model include “public discourse” and “organizational practice.” The circulation of these frames in society is recursive, with each of them potentially affecting the other in a continual feedback loop.

F/OSS ADVOCACY AS A SOCIAL MOVEMENT

Free software programmers, users, businesses, and advocacy organizations can be described as part of a larger social movement that advocates for the increasing adoption of free and open source software by end-users, businesses, governments, and other organizations. While the research corpus in this area is certainly not huge, there have been a number of recent studies that have examined free and open source software communities through the lenses of social movement theory. For example, Elliott (2008) examines the history of free and open source software movements, drawing directly upon the work of Kling and Iacono (1988) as well as the broader social movement literature. In particular, she outlines how the technological action frames specific to F/OSS movements contribute to the success of these movements. She also utilizes a sociological framework offered by Dawson and Gettys (1935) to track the development of F/OSS through the four stages in the life of social movements: social unrest, popular excitement, formalization, and institutionalization. Dedrick and West (2008) examine the discourse regarding F/OSS among three different constituencies: free software advocates, open source advocates, and businesses. They found that the “movement ideology” of access to the source code and more choice for users was found among the true believers of the free software and open source advocates, but not among organizational adopters, who expressed more pragmatic goals via their use of F/OSS. Elliott and Scacchi (2008) also examine the F/OSS movement as a larger whole, utilizing a wealth of empirical data gathered from IRC (Internet Relay Chat) logs among software developers, e-mail discussions, and Internet-based artifacts associated with the Free Software Foundation (FSF) and the GNU

Project, as well as interviews with F/OSS developers at software conferences. They utilize the framing concept to outline three distinct eras within the history of the F/OSS movement. Their research will serve as an organizational touchstone for the current overview of F/OSS below.

In spite of these scholars’ conceptualizations of F/OSS as reform-oriented social movements, other who have studied F/OSS communities have expressed doubts on this point, finding that individuals who work on open source software projects are mostly apolitical in the traditional sense (Coleman, 2004; Weber, 2004). More specifically, open source software developers and hackers are chiefly interested in utilitarianism—making sure that the technology is freely available and able to be altered to suit their own individual needs and desires (Raymond, 2001), irrespective of larger debates about intellectual property rights or freedom of speech. That the broader F/OSS movement is not necessarily “political” in nature (in other words, closely involved with electoral politics or grassroots political organizing) does not negate its potential as a force on issues such as digital software rights and digital commons advocacy.

In fact, a number of scholars who have conducted in-depth observational analyses of F/OSS communities have discovered numerous ways in which these collectives have become politically mobilized. Perhaps the most pervasive politicized aspect of F/OSS collectives is simply what we might term “F/OSS evangelism”—encouraging individuals, organizations, and governments to adopt open source software alternatives. McInerney (2009), for example, cataloged the development and expansion of the “circuit riders,” a group of politically progressive computer enthusiasts who in 1996 began offering technology expertise and consulting to nonprofit grantees of the W. Alton Jones Foundation. As McInerney (2009) writes, these “circuit riders bring F/OSS into their field-level politics by making claims on behalf of the software platform, associating certain ideals of the open source platform with certain ideals of the nonprofit sector” (p. 214). Likewise, Hess (2005) concluded that the open source movement worked toward a wholesale shift in

property ownership from private-sector firms to nonprofit and public sector entities.

Free Software Movement Discourse: Origins and Development

As outlined above in the discussion of the social movement literature, such movements are initially constituted and mobilized via the success of motivating discourse frames. These frames help to communicate a sense of purpose to nascent movements, which can assist in recruiting new adherents and can potentially galvanize wider support from the public. Often, embryonic social movements are propelled forward due to the efforts of a small circle of passionate and charismatic leaders. In these respects, the rise of the free software movement in the 1970s and 1980s was typical of many other reform-oriented social movements.

The notion of free software originated with an MIT computer programmer Richard Stallman. Stallman had been working at MIT during the formative years of the 1970s, when other computer programmers or “hackers” were experimenting heavily with UNIX-based systems and developing software tools that were passed around among users, who admired the skill in writing the code and suggested further improvements (Levy, 1984). Although the term “hacker” has become something of a pejorative, referring to a dangerous individual who breaks into secure computer systems in order to steal valuable data, its “old” meaning from the 1970s and 1980s was a quite positive one, referring to a technologically savvy, intelligent individual who worked against a centralized authority and the rigid enforcement of property boundaries (Coleman & Golub, 2008). As Nissenbaum (2004) explains about the early hacker movement,

If there is something political that ties together these descendents of early hackers, it is protest—protest against encroaching systems of total order where control is complete, and dissent is dangerous. These hackers defy the tendencies of established

powers to overreach and exploit without accountability. With their specialized skills, they resist private enclosure and work to preserve open and popular access to online resources, which they consider a boon to humanity. Ornerly and irreverent, they represent a degree of freedom, an escape hatch from a system that threatens to become overbearing. (p. 212)

Stallman and other programmers at MIT embodied these anti-authoritarian and communitarian ideals in the work that they performed on the university’s computer systems. Each time one programmer came up with a useful program (or “hack”), it was quickly distributed to others who would read and admire the code, and then promptly alter it to create new software programs that fulfilled another utilitarian need.

The camaraderie and communitarian ethos at the MIT lab began to unravel, however, when the U.S. Department of Defense became interested in utilizing these projects to develop its own applications, insisting that these software projects become closed to outsiders to protect national security. Additionally, private companies became less interested in sharing their source code with university programmers and computer science students, since new business models for software were emerging, and many of the best minds at these universities were being hired by these firms (one of which was Bill Gates’s fledgling startup company called Microsoft).

Stallman worked to preserve the “hacker ethic” he had once experienced at MIT by resigning his position there in 1984 and devoting himself to the advocacy of what he called “free software.” Stallman founded the Free Software Foundation (FSF) as a nonprofit organization that would be able to support the development of free software projects. Free software, according to Stallman’s vision and the tenets of the Free Software Foundation, comprises four essential freedoms (Free Software Foundation, 2009a):

1. The freedom to run the program, for any purpose (freedom 0)
2. The freedom to study how the program works, and change it to make it do what

- you wish (freedom 1). Access to the source code is a precondition for this.
3. The freedom to redistribute copies so you can help your neighbor (freedom 2).
 4. The freedom to improve the program, and release your improvements (and modified versions in general) to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

In essence, then, free software allows users to run, copy, distribute, and change or improve existing software without being prevented from doing so by the originator of the software. This does not mean, however, that financial transactions are anathema to the free software movement: in Stallman's words, "free" simply meant free as in free speech, not as in free beer. In fact, some of the earliest businesses to be created around open source software offered technical support for these tools—something which Stallman himself strongly supported. This initial period of rebellion by Stallman, crystallized in the belief that a new form of computer freedom advocacy was required, is described as one of "social unrest" by Elliott (2008, p. 367). During this time, the dominant discursive frame utilized by Stallman and the FSF was the "freedom frame" (Elliott & Scacchi, 2008, p. 20).

Institutionalization of the Free Software Movement: GNU/Linux and the GPL

Advocates involved in social movements work to increase the reach and longevity of those movements by creating organizational structures that will serve as institutional anchors for the movement. Described by Elliott (2008) as the "popular excitement" stage of the F/OSS movement, Stallman began working in the late 1980s to develop an entirely free computer operating system that could be downloaded, utilized, and changed by anyone. Stallman's training was in the UNIX operating system, one of the most widely used operating systems for large mainframe computers at universities and government laboratories at the time. The problem, however, was that UNIX was a proprietary operating system (owned at the time by AT&T) and could

not be distributed to other users without the threat of copyright infringement. Stallman and a group of programmers therefore took it upon themselves to begin re-writing the UNIX operating system from scratch, one application at a time. Between 1985–1992, they succeeded in replacing almost every UNIX application that programmers relied on. Stallman playfully referred to this new collection of programs as GNU, which stood for "GNU's Not UNIX"—a recursive acronym. Despite the usefulness and popularity of some of these reconfigured programs among computer hackers and enthusiasts, they remained a loose collection of applications that did not cohere together as a full operating system. It was a young Finnish computer science student named Linus Torvalds who in 1991 actually finished the GNU operating system by creating the kernel for a version of UNIX called Minix (Weber, 2004). Armed with his new operating system, which he dubbed "Linux," along with Stallman's GNU tools, he began to distribute an entirely free operating system that would develop throughout the 1990s and 2000s into a viable alternative to Windows and other proprietary operating systems.

The development and maintenance of an alternative computer operating system is no small feat. It required hundreds and hundreds of hours of work on behalf of numerous individuals, and while Stallman and Torvalds had made the initial contributions to create GNU/Linux, its survival ultimately depended upon the collective efforts of hundreds of volunteer software programmers. The primary distinction between proprietary software development and that of volunteer, networked hackers has been outlined by hacker activist Eric S. Raymond (2001) as the distinction between "cathedrals" and "bazaars." Raymond argues that proprietary software is designed from the top-down to meet a specific set of goals identified by a few senior managers or organizational figureheads, with the only involvement from the public or market emerging when the information product has been fully completed. This is the cathedral model. In contrast, open source hacker communities offer an organizational model more akin to a bazaar, where individual programmers work simultaneously on different, and sometimes interrelated, projects with little or no supervision or input

from any centralized authority. Often, programmers are motivated to write pieces of software code to satisfy a particular need of the moment, such as allowing a specific peripheral device such as a printer or scanner to work with another type of operating software. The quality of the finished product is then judged collectively by the hackers who download and use the software, who then may in turn offer suggestions, file bug reports, or even improve on the code themselves and upload the results of their efforts for other hackers to see. Raymond's notion of the bazaar suggests that the more programmers choose to work on software code and improve it, the better the ultimate quality of the code will be (and the quicker it will be debugged).

Participation in open source software projects, therefore, is voluntary. In his overview of the sociology of the open source movement, Weber (2004, p) notes that "the key element of the open source process, as an ideal type, is voluntary participation and voluntary selection of tasks. Anyone can join an open source project, and anyone can leave at any time. . . . There is no consciously organized or enforced division of labor" (p. 62). Voluntary participation, however, does not mean that open source projects are anarchic and aimless. Instead, many open source projects work continuously and often swiftly toward a common set of goals and purposes that are mutually agreed on by the project participants.¹

Many F/OSS projects, including GNU/Linux, have progressed beyond simple "adhocrasies" and bazaar-style organizations to create sophisticated institutional structures of their own. These infrastructures have not only regularized the development of open source software, but have also provided an organizing structure for nascent F/OSS social and political movements. A critical aspect of new organizational self-awareness is the self-definition of Linux hackers, F/OSS developers, and open source software users as free speech advocates in opposition to the closed, proprietary software that is in widespread use on personal computers today. The legal cornerstone of free speech in open source software communities is the GPL, or GNU General Public License. Stallman's vision for new technologies free from the

confines of proprietary software would have been only an idealistic fantasy if it attempted to survive under existing copyright regimes. Consequently, Stallman initiated a substitute system for copyrighting software. Rather than protect the property rights of the individual creator, Stallman's version turns the notion of copyright (which links specific lines of computer code with individual property) on its head by keeping software in the public domain in perpetuity, something that he playfully refers to as "copyleft." In essence, the GPL ensured that the four essential software freedoms would remain intact whenever free software was modified and redistributed by other users. If the end-user decides to change GPL-protected software and distribute that new software code to others, then another provision of the open source definition comes into play: that new software code must be distributed under the same terms as the original software, that is, with the source code revealed and the opportunity for those new users to modify and redistribute the software (Open Source Initiative, 2009). It also prevented users from adding proprietary software to GPL's software and then obtaining a restrictive license for the newly created program, making it impossible to "combine a free program with a non-free program *unless* the entire combination is then released as free software under the GPL" (Free Software Foundation, 2009b; Weber, 2004). The GPL was a major innovation in Stallman's battle with multinational corporations like AT&T (which owned the rights to the UNIX operating system) since it turned "copyright law against itself, limiting its reach and carving out a legally protected zone to build and protect the public domain" (Bollier, 2008, p. 30).

The GPL and the attempt to redirect the restrictive practices of copyright law as it pertained to computer software was the first step in expanding the boundaries of free speech beyond the specific interests of computer hackers to encompass much broader concerns about the restriction of culture in a networked society. By creating a legal alternative to copyright, Stallman "provided the rudiments of a rival liberal legal vocabulary of freedom, which hackers would eventually appropriate and transform to

include a more specific language of free speech” (Coleman, 2009, p. 424). Increasingly, open source communities are also becoming more sophisticated in their facility with the legalities of copyright law, becoming ersatz copyright lawyers in their use of various software licensing schemes in order to challenge the existing intellectual property regimes. As Coleman (2009) explains in her overview of legal and political activism among F/OSS developers, “Developers construct new legal meanings by challenging the idea of software as property and by crafting new free speech theories to defend this idea of software as speech” (p. 421). In particular, Coleman describes how new developers for Debian, a version of the Linux operating system and the largest open source software project in the world, must complete an extensive application that asks them detailed questions about different sorts of software licenses under the GPL, including how to “correct” some existing software licenses to bring them into compliance with the Debian Free Software Guidelines (DFSG) or the GPL. These practices not only maintain the integrity of the Debian operating system, but they also help to form a coherent social movement by “transforming technologists into informal legal scholars who are experts in the legal technicalities of F/OSS as well as proficient in the current workings of intellectual property law” (Coleman, 2009, p. 422). The development of the GPL and other copyleft software licenses represents a third distinct phase in the progression of the free software movement: formalization. Formalization occurs when “a movement becomes more clearly organized with rules, policies, tactics, and discipline. . . . Without the volunteer efforts of programmers to complete the code, the F/OSS movements would not have reached the institutionalization stage” (Elliott, 2008, p. 370).

Along with these activities among hacker communities, a number of key nonprofit organizations have taken shape in the last 15 years that have bolstered the legal power of open source software licenses, including the GPL. Richard Stallman’s decision to resign from the artificial intelligence laboratory at MIT and to start the Free Software Foundation (FSF), for instance, gave a public face to the movement

and allowed him to begin soliciting donations to support the development of free software tools. The FSF has continued to support the cause of free software both by channeling donations and by bringing attention to some of the perils of proprietary software. Their “Bad Vista” campaign from 2006–2009, for example, helped to focus media attention on the fact that Microsoft no longer sold their operating system to end users; instead, the software was only “licensed” to these users, which gave Microsoft the ability to potentially remotely disable a user’s computer through the use of a so-called “kill switch” (Free Software Foundation, 2006). More recently, the Software Freedom Law Center (SFLC), a nonprofit organization founded in 2005 to support F/OSS developers with legal advice on software licensing and to offer “license defense and litigation support,” is in some ways analogous to the American Civil Liberties Union (ACLU) in that it serves as a watchdog for GPL-licensed software and will file injunctions and engage in other court actions to prevent the “contamination” of open source software with proprietary code (Software Freedom Law Center, 2009a). In December 2009, the SFLC filed suit against major consumer electronics companies and retailers such as Samsung, Westinghouse, JVC, and Best Buy for releasing proprietary products that utilized GPL-protected software called BusyBox (Software Freedom Law Center, 2009b). This action is only the most recent in a string of incidents in which proprietary software developers (one of them was Microsoft) have been informed by the SFLC that they have violated the terms of the GPL. In 2007, the merger of the Open Source Development Labs (itself created in 2000) and the Free Standards Group (FSG) created the Linux Foundation—a nonprofit consortium dedicated to providing financial support for the work of Linus Torvalds so that Linux could continue to innovate and provide a real alternative to Microsoft Windows (The Linux Foundation, 2011).

The existence of visible organizations such as the SFLC, the FSF, and the Linux Foundation, among others, has given the F/OSS movement a centralized public identity and has protected the existence of the digital commons from incursions by profit-driven electronics and software

companies. These organizations also serve to shape the very definition of free, open source and act as sources of contact for the media, all of which are critical institutions that fashion a notion of self-identity for the F/OSS movement. The case of Linux is an example of a F/OSS project that has achieved the final, fourth stage in the development of a social movement: institutionalization (Elliott, 2008). By the time a social movement has achieved this stage, "It has developed a fixed organization with dedicated personnel and a business structure to carry out the goals of the movement" (Elliott, 2008, p. 375). The current state of the GNU/Linux operating system has clearly attained this level of social and financial stability and, indeed, has become a source of interest not just for hobbyist and movement enthusiasts, but for businesses as well.

F/OSS ADVOCACY AS A SOCIAL JUSTICE MOVEMENT

Having laid out the case for F/OSS as a social movement, I now turn to the argument that F/OSS is expanding its initial constituencies of software hackers and users to tackle broader social justice aims. Social justice issues have been at the core of the free software movement ever since Stallman crafted the notion of the communitarian ethos that prevents many software projects from being removed from the public domain by introducing copyright restrictions. Since the mid-1990s, however, these core values have expanded to include more organizations that are only peripherally connected to the free software movement, yet they have adopted much of Stallman's rhetoric as a tool to advance their own social justice aims, thereby broadening the ideological reach of the F/OSS movement to incorporate issues of consumer sovereignty, digital rights, and information commons.

Definitions of Social Justice

Movements for social justice operate as a particular subset of the types of social movements described earlier. What distinguishes these movements from other types of single-issue

ones is that they adhere to a set of broad principles that result in a diversity of causes and missions. In general, social justice refers to a broad-based cultural, political, and economic egalitarianism with a redistributive urge as its ideological centerpiece. Liberal philosopher John Rawls's two-pronged definition of justice provides the conceptual foundation for modern notions of social justice. Rawls (1999) argued in 1951 that the concept of justice required the satisfaction of two basic principles:

First, each person participating in a practice, or affected by it, has an equal right to the most extensive liberty compatible with a like liberty for all; and second, inequalities are arbitrary unless it is reasonable to expect that they will work out for everyone's advantage, and provided the positions and offices to which they attach, or from which they may be gained, are open to all. These principles express justice as a complex of three ideas: liberty, equality, and reward for services contributing to the common good. (p. 48)

The overriding notion here is that justice is defined by the greatest possible equality for each individual person, which can only be trumped when a greater common good is achieved. Building upon this notion of justice, Bradley (1996) describes *social* justice as

the directing and shaping of society's laws and institutions (e.g., the economy, medical care, social systems, unemployment insurance, etc.) to achieve an equal level of fairness and just treatment for all members of society; a system in which just conduct within a society toward all members of that society is guided by moral principles of truth, reason, justice and fairness. (p. 373)

The notions of fairness and impartiality are at the core of the Rawlsian concept of justice.

Amartya Sen's (2009) recent reassessment of the notion of justice credits Rawls with the intellectual innovation of fairness, but critiques the idea that social justice can be understood in

singular terms. There is not necessarily a single universal standard for what is “just,” argues Sen, but instead a series of competing value systems in human societies that frustrate any attempt to achieve fairness for all. In particular, he notes that the differential access to resources around the world complicates individuals’ efforts to achieve the utopian ideal of fairness: “Rawls judges that people have through the means they possess, without taking into account the wide variations they have in being able to *convert* primary goods into good living. . . . There is, thus, a strong case for moving from focusing on primary goods to actual assessment of freedoms and capabilities” (Sen, 2009, p. 66).

Here Sen points to differential access to resources (income, education, health, etc.) as part of the reality of human experiences, which need to be taken into account. The universal standard that Rawls sets for justice is also questioned by Sen. In essence, by whose standard shall we pursue fairness? How can the distribution of income or other resources be achieved when we might all disagree about the relative importance of the redistribution criteria? Rather than adhere to a universal utopian standard, Sen argues that we can begin to achieve a broader justice by first focusing on those injustices on which everyone can agree. Thus, Rawls’s principle of justice as fairness is not abandoned, but simply placed within the more relevant context of human beings’ everyday activities and life situations.

The Freedom Discourse of F/OSS and the Free Culture Movement

Stallman’s orientation to free software was about more than preserving the collaborative atmosphere among computer scientists at MIT. Instead, his definition of free software outlined the philosophical underpinnings of a larger social movement to transform the tools that were to become vital conduits of commerce, information, and artistic expression. As Weber (2004) describes:

Software for [Stallman] was not just a tool to run computers. It ultimately was a manifestation of human creativity and

expression. . . . Traditional, exclusionary property rights do not incentivize people to write good software, as mainstream intellectual property rights law would have it. Rather, imposing traditional property rights on software makes “pirates” out of neighbors who want to help each other. (p. 47)

Stallman’s notion here is that digitized information and computer software is not simply utilitarian but is instead an outgrowth of the creative capacities of human beings. Additionally, as social creatures, it is part of our inherent nature to form collectives and to cooperate. These fundamental aspects of the human experience, however, have been artificially curtailed by the restrictive code that is inserted into proprietary software, making “pirates” out of “neighbors.”

Stallman’s emphasis on reinvigorating a sense of common good via artistic and other cultural expression has become the philosophical foundation for the larger “free culture” movement. Lawrence Lessig (2004), one of the most visible proponents of the free culture movement, credits Stallman as the primary inspiration for his concept of free culture. In a passage that directly channels Stallman’s philosophy, he writes: “The opposite of a free culture is a ‘permission culture’—a culture in which creators get to create only with the permission of the powerful, or of creators from the past” (Lessig, 2004, p. xiv). Likewise, some scholars have associated Stallman’s exhortation to retain access to computer source code as a fundamental push to protect freedom of speech from government and corporate control. As anthropologist Chris Kelty (2008) argues,

Coding, hacking, patching, sharing, compiling, and modifying of software are forms of political action that now routinely accompany familiar political forms of expression like free speech, assembly, petition, and a free press. Such activities are expressive in ways that conventional political theory and social science do not recognize: they can both express and “implement” ideas about the social and moral order of society. (p. 8)

The FSF argues, therefore, that F/OSS movements encompass a much broader range of social and political issues such as information access and control.

The efforts of software hackers and open source advocates to emphasize the collective, communitarian ethos of the Internet has also inspired activists to expand the notion of the public domain to include all information and creative works. The rallying cry of free software advocates for openness in both the code and the content of new media on the Internet has also dovetailed with the broader free culture movement, which has worked to circumvent the restrictions of copyright law in order to reserve the rights of individuals to use, modify, and redistribute cultural materials. The aims of the free culture movement read like a social justice manifesto as well. As Lessig (2004) writes: “So uncritically do we accept the idea of property in culture that we don’t even question when the control of that property removes our ability, as a people, to develop our culture democratically” (p. 261). Modeled on Stallman’s GPL, Lessig and two colleagues created an alternative copyright regime for cultural materials in 2002, the Creative Commons (Creative Commons, 2009). In essence, Creative Commons “was conceived as a private ‘hack’ to produce a more fine-tuned copyright structure, to replace ‘all rights reserved’ with ‘some rights reserved’ for those who wished to do so. It tried to do for culture what the General Public License had done for software” (Boyle, 2008, p. 182).

The ultimate goal of alternative copyright systems such as Creative Commons and the GPL is to preserve the ability of individuals to both share and build upon each other’s knowledge, artistic creativity, and expertise. This not only reduces barriers for individuals to participate with one another in communal projects, but it also works to equalize access to information for all members of society, which is a core aim of classic redistribution theories of social justice. New forms of value and innovation are created through this new form of networked creativity, which have been collectively dubbed “the commons.” The commons is

a vehicle by which new sorts of self-organized publics can gather together and exercise new types of citizenship. The commons can even serve as a viable alternative to markets that have grown stodgy, manipulative, and coercive. A commons arises whenever a given community decides that it wishes to manage a resource in a collective manner, with special regard for equitable access, use, and sustainability. The commons is a means by which individuals can band together with like-minded souls and express a sovereignty of their own. (Boyle, 2008, p. 4)

New means of modular, collective, cultural production thrive on a vibrant public domain. Since this is increasingly under threat, F/OSS projects that release their software under the GPL are advancing a critical 21st century goal toward collectivism, which is at the forefront of the social justice purpose. One simply has to look at the motivations behind most forms of cultural production to realize the historical shift in perspective. Under the traditional systems of copyright, the end goal of artistic and intellectual creation is to generate private property, which, while it may be experienced by others, ultimately serves to benefit the creator. Under “copyleft” regimes like Creative Commons and the GPL, the goal of cultural production is to add value and creativity to a set of resources to which everyone has free access. This not only encourages more creativity, which can then be fed back into the collective commons, but it creates new incentives for intellectual production that go beyond the accumulation of capital.

F/OSS and 21st Century Cultural Labor Consciousness

As a result of the possibilities for innovation offered by the collective commons, new forms of cultural production are also being created, many of which challenge the existing wage-labor system of post-industrial capitalism. Like software engineers in general, along

with teachers, artists, and others who work in the cultural industries, open source hackers are knowledge workers. What is less obvious about hackers is the fact that their efforts lie outside the traditional realm of the capitalist economy, since the goal of the software they code is to be freely available to computer users around the world. Absent the profit incentive, there are a number of other motivations that typify hacker involvement in F/OSS. Instead of a work environment structured by institutional or market-based demands, free software communities are often loosely organized and centered around the contributions of lines of code in order to solve specific problems. Since the computer code written by hackers is an abundant resource, writes hacker anthropologist and spokesperson Eric Raymond (2001), the social and economic model of open source communities most closely resembles a *gift culture*. Raymond writes that “abundance makes command relationships difficult to sustain and exchange relationships an almost pointless game. In gift cultures, social status is determined not by what you control but by what you give away” (p. 81). Giving or uploading useful code to the community not only provides others with a gift, but it also establishes one’s reputation as a successful hacker through positive recognition from the hacker community. For Castells (2002), this suggests that a “techno-meritocratic” culture develops among online hacker communities. He writes:

Naturally, money, formal proprietary rights, or institutional power are excluded as sources of authority and reputation. Authority based upon technological excellence, or on an early contribution to the code, is respected only if it is not seen as predominantly self-serving. In other words, the community accepts the hierarchy of excellence and seniority only as long as this authority is exercised for the well-being of the community as a whole, which means that, often, new tribes emerge and face each other. But the fundamental cleavages are not personal or ideological: they are technological. (p. 48)

In this utopian vein, Castells and other scholars of the post-industrial transition suggest that technological prowess creates new possibilities for autonomy, individuation, and freedom from wage capitalism that emerges from the networked interfaces of the post-industrial economy (Bell, 1973; Hardt & Negri, 2001). F/OSS movements fit somewhat naturally into this vision because the tools to rewrite the basic operating code of networked computers are readily available on the Web for anyone with access and patience to master them. The power to change the technological course of society, therefore, is effectively taken out of the hands of industrial elites and reclaimed by individual hackers who choose to work on open source projects to fulfill their own goals and desires. This devolution and redistribution of creative power from powerful software corporations to the people is one of the primary social justice appeals of the greater F/OSS movement.

Some scholars have investigated F/OSS communities as labor forces, emphasizing their distinction from traditional wage-labor theories of value and potential for radically altering the balance of power between capital and intellectual labor (Banks & Humphreys, 2008; Dafermos & Söderberg, 2009; Söderberg, 2008). Similarly, though from the perspective of economic analysis, others have noted the unique “networked” characteristics of F/OSS labor practices, which have institutionalized new, decentralized forms of value creation that are more strategically nimble and ultimately more innovative than traditional institutionalized forms of capital creation (Benkler, 2006; Von Hippel, 2005, 2009).

F/OSS as Inspiration and Tool for Other Global Social Justice Efforts

The adoption and evangelism surrounding free software has recently moved beyond the small core of highly skilled computer programmers and “hackers” to include a much broader constituency of users, many of whom have little knowledge of computer hardware and software. While these new users may have come to F/OSS via different avenues than software engineers and other technologically savvy users,

they nevertheless may come to share some of the same goals as F/OSS advocates, such as (a) advocating for long survival and perpetuation of free software; (b) protecting free software from becoming controlled by proprietary licenses and copyrights; (c) encouraging others to adopt free software (F/OSS evangelism); and perhaps even (d) recognizing the links between software code and free speech. It is common for social movements to generate momentum and interest from the public by enlisting even tacit support from as broad a constituency as possible. In their article about democratic media activism, for example, Carroll and Hackett (2006) describe a social movement as a series of concentric circles wherein different stakeholders are found. Although their model concerns media reform advocacy movements, it can be easily adapted to describe free software advocacy. In the center one finds individuals and organizations directly affected by the existence of free software, such as software engineers, freelance hackers, and computer hardware and software corporations, as well as other organizations with a vested interest in free software (such as FSF, SFLC, and the Linux Foundation, for example). The second circle

comprises subordinate social groups, whose lack of social, cultural, economic or political capital is paralleled in the mass mediated machinery of representation, and whose interests sometimes bring them into conflict with the social order—particularly when they are organized in the form of social movements that need access to public communication in order to pursue their political project. (Carroll & Hackett, 2006, p. 85)

In the case of F/OSS, this circle would represent individuals and organizations that utilize free software for their own uses and at times adopt the rhetoric and goals of F/OSS as tools to their own ends. These second-tier organizations are where we see a significant recent expansion in the discourse (and use) of F/OSS.

There are numerous examples of F/OSS being utilized in order to achieve larger social justice aims. One such project is Ushahidi, a

nonprofit technology company that was initially developed to map reports of political violence in Kenya in 2008 (Ushahidi, 2011). Meaning “testimony” in Swahili, Ushahidi grew from an ad-hoc core of volunteers into an organization that is further developing this open source software tool for crowdsourcing information. Their target users are primarily human rights advocacy organizations around the globe. Most recently, Ushahidi was utilized to help relief organizations better target areas in the most need of food, medical, and other types of assistance in Haiti after the devastating earthquake there in 2010 (<http://haiti.ushahidi.com/>). Similarly, the Sahana project is a free, open source software disaster management system that aims to help critical coordination problems among volunteers, governmental authorities, aid organizations, and other NGOs during natural disasters (Sahana Software Foundation, 2011). This software tool was successfully utilized to help coordinate relief efforts during the 2004 Asian Tsunami crisis. The use of F/OSS to help alleviate suffering around the globe has even spawned its own advocacy organization, The Humanitarian FOSS Project (The Humanitarian FOSS Project, 2011). Projects like these are encouraged by other grassroots efforts like “Penguin Day,” an annual event begun in Philadelphia in 2004 that attempts to bring together open source software developers and nonprofit organizations in order to encourage these nonprofits and NGOs to adopt and utilize F/OSS (<http://www.penguinaday.org/>). A similar conference that connects open source developers with social justice organizations called “Web of Change” is held annually in Canada as well (Web of Change, 2011).

The low-to-negligible costs of free software projects are making it possible for these projects to make inroads into the educational sector in developing countries. Between 2000 and 2009, a project entitled SchoolNet Namibia trained teachers and students in Namibia on how to use free software tools as the Internet was being introduced to schools throughout that country (SchoolNet Namibia, 2011). The potential utility of F/OSS for assisting developing nations in their educational and computerization goals is enormous (Ghosh, 2003).

CONCLUSION

This article has outlined the argument that free and open source software advocacy can be fruitfully conceptualized as a social movement. From its roots in the rise of microcomputing in the 1970s and 1980s, the free software movement has identified a set of core ideological beliefs and discourse about the basic freedoms of computer software. This social movement, initially conceptualized by Richard Stallman and a small group of like-minded hacker enthusiasts, has grown substantially since that time and is now supported by a full-fledged operating system (GNU/Linux) and the support of a legal regime (the GPL) and support organizations (such as the FSF and SFLC) that provide consistency, coherence, and a basis of financial support for the movement.

I have also argued that the free and open source software movements can be described as movements for social justice. There are several compelling reasons for this claim. First, issues of information freedom and communitarianism have always been at the heart of the free software movement, and this “freedom discourse” has been adopted by the free culture movement as one of its key concerns. As a byproduct of the collective efforts of volunteer free software hackers, open source computer programmers and users are increasingly connecting their own activities to larger philosophical issues of free speech and democratic information access. Indeed, F/OSS movements have catalyzed interest in issues of excessive copyright protections enjoyed by corporations, which has expanded the reach of these movements beyond computer programmers and technology geeks. The development of F/OSS has made significant inroads in the last 20 years because of the creation of some core institutions (such as the FSF and SFLC) that serve to further the interests of free software, and because of new “copyleft” regimes such as the GPL and the Creative Commons. The free software movement has also spearheaded the development of an alternative form of cultural labor—one which harnesses the power of collective labor via the Internet, which exists parallel to, and often in opposition to, the wage-labor system of post-industrial capitalism.

Finally, evidence of the links between the free software movement and social justice issues can be seen via the plethora of nonprofit relief and development organizations that have adopted F/OSS technologies and, along with it, the shared ethos of the free software movement.

In light of these efforts to integrate free software projects into a larger constellation of social justice projects around the globe, one central question emerges: Will these social justice movements that utilize F/OSS and core F/OSS advocates find common cause and unite under some of the core issues of information freedom, equality of information access, and the responsibility of a shared cultural commons? Clement and Hurrell (2008) argue that the potential for the emergence of a broader coalition is real, especially since the Internet is “bringing these previously non-CMs into greater contact with CMs, allowing the two sets of groups to organize around common goals” (p. 353). They see a number of core ideological similarities between movements for community networking, F/OSS, and informational privacy, all of which could potentially form a broader coalition around the core issues of “the information commons and information ecologies, as well as the broader information environment and ‘infosphere’” (Clement & Hurrell, 2008, p. 354). Although the goals of these movements have yet to be fully realized, the coordinated efforts of these loosely organized volunteers and hackers have already begun to change the ways in which we think about information and computers in a networked society.

NOTE

1. The exact nature of collaboration among open source software developers is the subject of a good deal of sociological work. The forms of these collaborations range widely from loose “adhocracies” to sophisticated democratic projects (such as Debian) with mutually agreed-upon rules for development of software. Finally, some open source projects, like the development of the Linux kernel, are essentially benign dictatorships, in that they are controlled centrally by a single developer (in this case, Linux founder Linus Torvalds) who personally selects each and every individual who contributes to the development of the project.

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