

THE UNIVERSITY OF CHICAGO

THE SOCIAL CONSTRUCTION OF FREEDOM IN FREE AND OPEN SOURCE  
SOFTWARE: HACKERS, ETHICS, AND THE LIBERAL TRADITION

VOLUME ONE

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All projects have a catalyst at their beginning and in 1997 there was one person in particular who introduced me to the world of free software. If it were not for Patrick Crosby who literally sat me down one day, out of the blue, to tell me about a novel licensing agreement, the GNU General Public License, I probably would have known very little, if anything at all, about software and hackers today. I am very happy he decided that something dear to him, would be of interest to me. And it was. At the time, I

was nothing short of floored to discover the existence of alternatives to some of our current intellectual property instruments. After months of spending hour after hour online reading about the flurry of exciting developments reported on *Linux Weekly News*, *Kuro5hin*, and *Slashdot*, it became clear to me that I better turn this hobby into my main dissertation topic, or run the risk of never finishing graduate school.

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Hatzmann was also a gracious host, a great biking partner, and now a very close friend. This is also where I met Patrice Riemens (and Diiiiinnno), who are especially kind. I greatly admire Patrice because he shared his abundant knowledge and wisdom so freely with me and others.

I returned to the University of Chicago in the fall of 2003 to actually write the dissertation, only to discover that really I had not clue how to do it. Thankfully there were many others to teach me the ropes. A truly astounding range of people read different parts of my dissertation and gave me helpful feedback. There are a few that went beyond the call of duty. A good portion of chapter 2 derives from a joint effort with Alex “Rex” Golub who taught me more about liberalism than anyone else and also really pushed me to think more systematically. Genevieve Lakier read and gave me really incredible feedback in nearly all of my chapters, performing some last minute magic on chapter 6. I hope that soon I can do the same for you. Alex Choby has always been a steadfast long-distance interlocutor and also went beyond the call of duty for chapter 4. James Rizzo is a fantastic editor with equally fantastic comments and I look forward to following through on them next year. Karl Fogel who was also finishing up a formidable project of his own, somehow found the time to give me essential feedback that came from many years of F/OSS coding and writing about collaboration. Joe Hankins, Joe Feinberg, Jeff Martin, Andrea Muehlebach, Jessica Greenberg, Yarimar Bonilla, and Chris Walker, also gave me copious feedback for this project.

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## ABSTRACT

This dissertation, based on fieldwork conducted between January 2001 and May 2003 on the Debian free software project and among hackers living in the Bay area, is an ethnography focused on the ethics and politics of free and open source hackers. My aim in this dissertation is to evaluate the rise of expressive rights among hackers as a historically and culturally specific practice of liberal freedom that can only be made sensible through the lens of a hacker technical way of life—in which their pragmatics and poetics are given serious consideration. Moving and integrating various levels of analysis: the phenomenology of technical praxis, the sociological creation of an ethical practice that unfolds in the hacker public sphere and the FOSS project, and the historical rise of reflective signification through overt political dissent, I offer a comprehensive account of how hackers have come to value and enact freedom, what they mean by it, and suggest some ideas about the broader political effects of their practices. Instead of an emphasis of self-determination and individuality based on the acquisition of property, hackers have placed emphasis on individuality as a form of critical self-determination that requires unrestricted access to knowledge in order to constantly develop technical skills and to progress the state of their technical art. Important for the purposes of this dissertation is that hackers challenge one sacred realm of liberal jurisprudence—intellectual property—by drawing on and reformulating ideals from another one—free speech.

## PROLOGUE

This dissertation is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.<sup>1</sup>

What was once a fringe and esoteric hobbyist technical practice—the production of free and open source software—has grown exponentially since 1998. This domain is still populated by hobbyists, many of whom refer to themselves with pride as hackers – computer aficionados driven by an inquisitive passion for tinkering and committed to an ethic of information freedom. However, over the last five years, it has come to exceed the boundaries of the hobby of computer hacking and has taken shape as a much broader social phenomenon, one that defies any straightforward categorization. The arena of free and open source software is intriguing and frustrating to a researcher like me, for it can be described (accurately) in several different terms with different social implications: a public, a socio-political movement, a sub-cultural practice, an engineering methodology, an alternative legal regime, and a business model. For example, at the same time that anti-capitalist activists champion free software for providing new legal alternatives to the

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<sup>1</sup> This warning is routinely included with F/OSS programs. Usually, it reads: “This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details. Though an entirely serious statement, it is also ironic because many developers derive pleasure from the fact that, even if they cannot legally guarantee a program's “FITNESS,” they know that in reality some pieces of F/OSS are often superior to proprietary software.

global regulatory structure of copyrights and patents, F/OSS has made serious inroads into the corporate sector and continues to do so, largely unscathed by the dot-com bust of 1999. Because of this commercial connection, a select crop of free and open source (F/OSS) projects now receives some form of financial support, and a number of hackers are hired by companies to develop F/OSS. By virtue of its public visibility, partially garnered through its presence in the market, F/OSS has also inspired the establishment of progressive “open source” endeavors in law, journalism, education, science, and even anthropology that emphasize the importance of productive autonomy, volunteer labor, collaboration, and open access to knowledge.

For the hackers who make and use this software, free and open source primarily designates a specific set of technologies, methodologies, institutions, and, especially, legal instruments, the sum of which they treat as the outgrowth and instantiation of the hacker ethical stance for information freedom. Free and open source software refers to non-proprietary but licensed software much of which is produced through Internet-based volunteer-run projects.<sup>2</sup> While this is foremost a technical movement with roots in hacker ethical idioms and methodologies, the single most important political innovation of F/OSS is in the legal sphere. For software to fit the definition of “free” or “open source” it must be released under any one of a number of licenses that keep source code—the underlying directions of all software programs—freely accessible for others to use, modify, distribute, and extend.

It is the practice of technical collaboration and circulation of knowledge, enabled by these licenses and organized through virtual-based projects, that has driven so much of

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<sup>2</sup> Technically, public domain software can also fall under the definition of free software although not all public domain software is by definition free software.

the vibrant popular and academic interest in F/OSS as a site of human creativity and labor. In short, F/OSS has been politically flagged and socially noticed because hackers are willing to produce and freely give away sophisticated programs without the economic- incentive reward structure of traditional intellectual property law or the mandates of capitalist profit. This has come as a great surprise to many economists and classical liberals who tend to treat human motivation and desire as a reflection of fairly stable patterns of natural behavior instead of socially shaped value.<sup>3</sup>

This dissertation covers everything from the “surprise” induced by F/OSS, the meaning of freedom as enunciated by F/OSS hackers, and the broader critique of certain liberal ideals heralded by this hacker practice. While hackers hold multiple motivations for producing free and open source software, I argue that F/OSS hackers are foremost guided by a cultural desire for “productive freedom.” This term designates a constellation of institutions, social norms, legal devices, and moral codes that hackers draw upon in order to build on the work of peers, refine their technical skills, and extend and improve architectural and engineering traditions. This freedom to labor within a legal and social framework of their own making is specifically enabled by licenses that direct copyright law toward the protection of “speech” instead of property.

While many individual hackers are uninterested in the politics of F/OSS (although, more than ever, many of these hackers now recognize the undeniable political face of F/OSS), one of the ironic outcomes of this movement is that the production of F/OSS has inadvertently launched the single most visible and effective political critique of the assumptions justifying the existence of intellectual property instruments. This

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<sup>3</sup> See Epstein (2003) for a discussion on stable patterns of behavior and liberal values.

critique, however, is not formed through didactic argumentation but exists by virtue of the fact that the arena of F/OSS represents a living practice of thousands and thousands of laboring individuals. A visible practice of knowledge production that has thrived without a structure of economic incentive has had the effect of critically challenging one of the sacred tenets of intellectual property law, namely that to induce creation and secure a “marketplace of ideas” for the benefit of a larger, democratic polis, economic incentives are fundamentally necessary.

Important for the purposes of this dissertation is the fact that hackers challenge one sacred realm of liberal jurisprudence, intellectual property, by drawing on and reformulating ideals from another one—free speech. Thus, in its political dimension, even if left unstated by developers, F/OSS represents a liberal critique from within the liberal tradition. More specifically, F/OSS captures the growing fault line between two of America's most cherished sets of rights, both of which have grown in importance and legal scope in the last hundred years: free speech and intellectual property rights.

Melville Nimmer (1970) was one of the first legal scholars to formally evaluate the tension between these two sets of rights as conceived constitutionally and deliberated by the courts. Copyright law limits the public use of certain forms of expressive content and thus inherently curbs the deployment of copyrighted material in other expressive activity. However, the predominant legal rationale for the state sanction of intellectual property instruments is that they are necessary mechanisms by which to secure a marketplace of ideas and that any negative consequences of censoring speech are far outweighed by this purported public benefit.<sup>4</sup> This position was affirmed in a 1985

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<sup>4</sup> Boyle (1996) has perceptively examined the broader liberal contradiction in liberal society over the treatment of information in public vs. private realms. He argues that various types of information are

Supreme Court case asserting that copyright law represents an acceptable restriction on speech because it is the basis for “marketplace of ideas.” Sandra Day O'Connor delivered the majority opinion in the following terms: “copyright is intended to increase and not to impede the harvest of knowledge. . . The rights conferred by copyright are designed to assure contributors to the store of knowledge a fair return for their labors. . . The monopoly created by copyright thus rewards the individual author in order to benefit the public.”<sup>5</sup> This rationale continues to hold tremendous sway within the context of a heightened neoliberal expansion of IP rights, making already existing tensions between expressive and IP rights more palpable and acute than ever (Benkler 1999).

Given this context, the ample use of F/OSS licenses acts as a very peculiar response and alternative to the current, restrictive intellectual property regime, dubbed by one legal scholar as the “second enclosure movement” (Boyle 2003). From the moral and logical perspective of F/OSS licensing, IP instruments are seen not as the pivotal stimulus for a marketplace of ideas but as a form of restriction so fundamental (or at least poorly

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legally and societally treated distinctly depending on whether they are conceptualized as pertaining to public or private matters. He suggests that the distinction so integral to copyright law between “idea” and its “expression” and the highly individuated and disembedded notion of Western authorship represent an attempt to mediate the various tensions between privacy and publicity. Thus the “idea” belongs to and is for the public while its “unique” expression is the private property of the author who created this nugget of expression through an act of pure self-creation.

<sup>5</sup> Harper & Row, Publishers, Inc. v. Nation Enterprises, 471 US 539, 545-546 (1985). This Supreme Court case deliberated whether the publication *The Nation* was entitled, under the fair use doctrine, to publish, in a 13,000 word article, a 300 word excerpt from President Ford's 20,000 word memoirs. The court ruled in favor of the publisher of the memoirs, upholding a purported and long standing liberal ideal that property rights promote a public benefit by inducing creation. For an overview of the case see, <http://www.oyez.org/oyez/resource/case/1647/>. Within the liberal legal tradition, there are, to be sure, various variations on this theme, a notable and influential one deriving from the Chicago school of law and economics. The basic line of thinking among these economists and lawyers is that strong property rights are necessary for economic efficiency and wealth maximization (cf. Coase 1960; Kitch 1977). Underlying this neoliberal approach is a belief that minimal governmental intervention and maximal private interests will drive us toward an increasingly free and affluent society. See Lemley (1997) for a discussion on the influence of the “Chicago School” on general trends in intellectual property law, in which there is now an overwhelming tendency to “propertize” everything alongside granting more power to proper owners to control and manage those property rights.

executed) that they need to be counteracted through alternative legal agreements that treat knowledge not as property but as speech to be freely shared..

However, since F/OSS licenses work by simultaneously using and inverting copyright law (to make software “open source” or “free software,” one first asserts a copyright and then adds any one of a number of F/OSS licenses, which then disables the restrictive logic of copyright law), the use of these F/OSS legal artifacts denaturalizes the assumption that conventional IP instruments hold a singular relationship between means and ends, a relationship that can only be established by “institutions of authority”, notably the U.S. courts and Congress.

In much the same way that a hacker derives great pleasure from “hacking” the formal logic of any system in order to solve a pressing or interesting problem (and blatantly disrespecting any technical barrier or institution of authority that may stand in his way), Richard Stallman, when devising the first free software license in the mid 1980s, approached the American intellectual property legal system as, above all, a hacker. For Stallman, IP laws represented an inefficient system that nonetheless, by virtue of being a logical system, could be understood and thus transfigured with a good enough solution—the execution of which brings to surface the predominant meaning of individuality and creativity among hackers: discriminating ingenuity. His solution, the GNU General Public License (GPL), captures the pragmatics of hacking in the sense that hackers routinely use a system, piece of code, or technological artifact for more than what they were invented for; within constraint, they innovate, and enjoy the challenge of outwitting constraint. Thus, while my discussion here attends to the connections between liberalism and hacking that are a major focus of the dissertation, these alone are insufficient to grasp the social and political nature of F/OSS. It also requires a detailed

examination of hacker technical pragmatics and aesthetics; in other words, the technical way of life that has shaped the contours of this movement

Along with its direct challenge to the assumptions of IP law, I argue that the F/OSS arena has also become a broader icon for openness and collaboration. It has attained a robust socio-political life as a touchstone for other social groups seeking to build, justify, and extend like-minded projects in art, law, journalism, and science.<sup>6</sup>

Given its challenge to traditional legal norms and its productive transportability, one might suspect F/OSS developers of employing a deliberate political agenda. But when asked, most developers invariably maintain a strong stance of political neutrality or indifference. As one developer responded to a suggestion that the Debian project (one of the largest F/OSS volunteer projects<sup>7</sup>) held some important political import outside that of free software:

. . . look, when I signed up for this project and agreed to adhere to the Social Contract, it didn't say anything about Christianity, genetically modified beef, Microsoft, war in Iraq, or anything else like that. It said we agree to work on Free Software. That's the \*only\* common belief you're guaranteed to find among Debian developers. (Debian Mailing List)

This statement accurately depicts a conviction among F/OSS hackers that traditional party politics or more confrontational acts of direct action should be checked in at the metaphorical door of the technical project (Coleman 2004; Kelty 2002). While many

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<sup>6</sup> There are literally dozens, upon dozens of examples. A few of the more prominent are: *The Creative Commons* at <http://www.creativecommons.org>; see “Dyke to Open BBC Archive” at [http://news.bbc.co.uk/1/hi/entertainment/tv\\_and\\_radio/3177479.stm](http://news.bbc.co.uk/1/hi/entertainment/tv_and_radio/3177479.stm); MIT’s Open CourseWare Project, <http://ocw.mit.edu/index.html>; and The Biodiversity Commons <http://www.dlib.org/dlib/june02/moritz/06moritz.html>. See *Wired Magazine* November 2003 for a front cover article on the influence of open source outside of technology.

<sup>7</sup> Debian, a non-commercial distribution of the Linux operating system, is the largest F/OSS project in terms of number of volunteers, with nearly 1000 developers from around the world who coordinate technical development over mailing lists and Internet Relay Chat. See <http://www.debian.org>. I conducted a significant portion of my fieldwork on the Debian project. Chapter 6 will provide a detailed account of the project's organization and how it acts as a site for the grounding of embodied ethics.

developers fully recognize the political nature of F/OSS, and some are primarily motivated by explicit political goals (Escher 2004), there exists a strong pressure to separate official political identification from technical production if it is unrelated to matters of software freedom. For some developers, this is because political activity is seen as a polluting enterprise, entirely uninteresting in comparison to the real thrill in life, technical hacking. Most hackers, however, recognize that since each developer has personal opinions about politics, it behooves them not to attribute a universal political message to their work as this may lead to unnecessary project strife and interfere with the task at hand: the production of superior software.

The Debian developer quoted above, however, did overlook one of the most common beliefs now held among programmers, developers, hackers, and computer scientists of the F/OSS public—one which informs their disavowal of official politics: the *sanctity* of liberal expressive rights. Free speech principles that are entrenched in licensing are echoed loudly among F/OSS hackers. As a value that runs deeply among these hackers, I will argue this free speech sensibility informs their cultural notions of agency, individualism, authorship, and politics. In fact, though F/OSS developers eschew the classical liberal subject of “possessive individualism” (Macpherson 1962) as well as the romantic author that is implied in IP law (Rose 1993; Woodmansse 1994), they elevate another ideal of individuality: the virtuous individual of discriminating thought who must be given the *liberty* to cultivate their selves, presupposed in free speech doctrine. As I will argue in chapter 4, the intellectual roots of this ideal are to be found in the liberalism of John S. Mill (Stone and Bollinger 2002; Passavat 2002; Fish 2002; Marcuse 1965) and more recently extended in the work of John Dewey (1935).

For F/OSS hackers, their understanding of technical selfhood is usually unrelated to hoarding property, consumerism, or economic exchange, and is first and foremost a form of self-determination that arises out of the ability to think, speak, and create *freely* and *independently*. I use these two terms distinctly and deliberately, for they capture the two predominant ideas of freedom operating among F/OSS hackers. On the one hand, hackers should be *free* from any restriction imposed by government, corporations, or social norms to regulate speech; but it is still seen as incumbent on individuals to *independently* develop their capacity for critical thought and technical talents within a community of peers who are equally invested in an ongoing cultivation of their technical selves. Thus, if we can say that F/OSS, as a social domain, represents a place where the tension between two sets of Constitutional rights are being played out, it is also a cultural “location” (Gupta and Ferguson 1997) where competing visions of what constitutes “individuality” in the liberal tradition are under negotiation.

The hacker commitment to expressive ideals should not be considered obvious or a straightforward manifestation of broader currents of liberal thought; rather it should be treated as an outgrowth of the intersection between the social, historical, and technical particularities of hacker praxis and a long-standing liberal debate over the nature of selfhood. While Mill's formulation of liberty and individualism offered a critique in his own time of the logic of the utilitarian economism (Donner 1991), F/OSS hackers are also currently engaged in a similar debate. However, there are two key differences: hackers articulate their position in this debate implicitly through technological production and through their legal artifacts rather than through explicit political voice ; and, second, despite a continuity with the Millian dilemma, its expression is closely hinged to current

historical, economic conditions and events, notably the aggressive neoliberal expansion of IP law.

The hacker commitment to expressive rights motivated them to momentarily discard their distaste for traditional politics and to vigorously take to the streets between the years of 2000-2003. Hackers across the nation, the world, and of course, on the Internet, mobilized in various traditional and imaginative guises to protest the arrest of two young programmers, Jon Johansen and Dmitry Sklyarov. These two programmers were arrested on separate incidents and under different laws, but both for releasing and discussing similar software technologies. Jon Johansen was arrested for his release of a short program called DeCSS, which was capable of decrypting content on a DVD disc that was encrypted using the Content Scrambling System (CSS). Dmitry Sklyarov's arrest occurred in the United States immediately following a popular hacker conference because of his purported violation of a restrictive copyright statute, the Digital Millennium Copyright Act (DMCA). Passed in 1998, this statute outlaws the manufacturing or "trafficking" in technologies capable of circumventing technical protection measures used to restrict access to copyrighted works.

F/OSS hackers received the news of the arrest of these two hackers as serious infringements of programmers' expressive rights to write software and they responded with potent dissent. Night vigils, nationally-coordinated protests, petitions, fund raisers, and "hackish" forms of civil disobedience, such as the release of illegal source code as art, were levied against what they perceived as unjust legal applications.

I raise the exceptional and anomalous case of "hackers in protest," in light of hacker free speech commitments and a neoliberal period marked by intellectual property driven information enclosures, to introduce the overarching question that motivates this

dissertation: How and why have F/OSS hackers come to signify their technical pragmatics as a form of freedom and one specifically worthy of First Amendment protection? The broader question this in turn raises is how other social actors have used the legal and technological artifacts of F/OSS to enact social transformation, especially in the realm of the law.

The first question focuses on the meaning of, stabilization, and reflective politicization of cultural values for information freedom among computer hackers in the last decade and within the context of F/OSS development. The very recent and particular free speech character of F/OSS, treated as obvious or politically uninteresting in nearly every discussion on its socio-cultural life (cf. Kollock 1999; Castells 2001; Himanen 2001; Barbook 1998; Weber 2004; Galloway 2004),<sup>8</sup> warrants an account of the social, historical, and cultural context under which hackers have come to self-reflexively describe their technical pragmatics as a form of liberal, expressive freedom.<sup>9</sup> The assertion that source code is a form of speech worthy of First Amendment protection dates only to the early 1990s. Why is this liberal conception of expressive freedom so

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<sup>8</sup> Notable exceptions are Walker (2000) and Kelty (2005).

<sup>9</sup> It is important to appreciate that the conception of source code as free speech is historically recent although there is a more complex history among programmers that will be covered in more depth in the next two chapters. To my knowledge, it first appeared as a published argument in a paper among programmers in the early 1990s (Salin 1991). It increasingly became a prevalent association in the later writings of Richard Stallman, the founder of Free Software Foundation. In quite a few FSF documents, Stallman now asserts that free software is about “free speech,” not “beer.” Moreover, it was during the “encryption wars” among cryptographers in the mid-1990s where the legal battles to assert source code as speech first emerged juridically. To date only a few judges have granted free speech protections to source code, although more cases advocating this position are being brought to the legal system. The fact that computer code is copyrightable acknowledges implicitly that this medium can embody expressive ideas. However, it was not until *Karn v. United States Department of State*, 107 F.3d 923 (D.C. Cir. 1997) that code was accepted to have expressive components. *Bernstein v. United States Department of Justice*, 176 F.3d 1132 (9<sup>th</sup> Cir. 1999) was the first case to successfully argue that source code is a form of speech that deserves First Amendment protection and was a case closely followed by the hacker community. For other relevant court cases see *Universal City Studios, Inc. v. Corley* 111 F. Supp. 2d 211 (S.D.N.Y. 2000), *Universal City Studios, Inc. v. Corley*, 273 F.3d 429 (2001).

lively to hackers, and in what ways and where have they made this liberal language their own? Answers to these questions will help us evaluate how the materialization, and especially the visibility, of these cultural values in social institutions, technical methodologies, social practices, and licensing engendered broader social transformation

With these guiding questions in place, let me provide a brief overview of the main arguments of my dissertation. I argue that the F/OSS movement is a culturally specific instantiation and articulation of a broader liberal tradition. It is a social movement that has, *partially* and largely unintentionally, challenged certain liberal and neoliberal economic policies and ideologies through the accentuation of other liberal ideals, notably that of free speech. Questions about the scope of political authority, the role of consent, and the rule of law have been central to liberal creeds. These creeds, which seek to justify limited governmental intervention, rely heavily on procedural law and legal deliberation to secure the right to property and promote civil liberties. Because of this focus, liberal governance requires the constant renegotiation of the divisions between publicity, privacy, and property (Warner 2002; Rose 1999; Bolye 1996; Taylor 1994). F/OSS practices and legal techniques reflect a similar preoccupation with demarcating the appropriate relationship between personal privacy, property, and public access. However, they challenge an unrestricted commitment to the right for property in favor of one that idealizes and cherishes an unrestricted flow of knowledge.

Because hackers have come to regard the open circulation of software as necessary to both technical progress and the conditions for personal pedagogy and self-expression, they combine utilitarian and romantic rationales for freedom. The right to produce for the sake of knowledge and self-expression is valued over the freedom to make and own intellectual property. This enunciation, however, is not an absolute and

radical critique of the general ideas of property, capitalism, or consumerism, but is specifically critical of property only when it is seen to limit one's expressive rights to access and learn from information.<sup>10</sup> Through the performance of technical activity, the predominant rationale for IP, economic incentive theory, has been left on the wayside, and has prompted a larger social and legal reevaluation of the role and meaning of IP law for the protection and treatment of knowledge.

Though we must give attention to how hackers generously draw from liberal discourses on freedom to signify their technical pragmatics, this alone is insufficient to understand how they conceptualize and actualize their ideals. Because their notions of freedom are also fundamentally shaped by their technical methodologies and social interactions, the second half of this dissertation devotes attention to their particular *technical way of life* and the places and practices of its constitution, such as virtual F/OSS projects, the geek public sphere (Kelty 2005), and the hacker conference. Through free software development efforts and discursive participation in a public sphere, hackers come to connect their practice with liberal ideals of freedom, connections that change through time and are a dialogical response to much broader historical conditions and events. If the particular association between speech and source code has been under formation among hackers since the early 1990s, I argue that it was only stabilized recently during a period of crisis and struggle between 2000-2003 that prompted an explicit political response best represented through protests launched against the Digital Millennium Copyright Act.

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<sup>10</sup> This partiality and unintentionality is important to differentiate from the ideals and political commitments of leftist counter-globalization activists that hold a more overt, and total challenge to consumer freedom and free market capitalism. In my conclusion, we will see how these activists deploy F/OSS as a tactic to further their political missions and goals.

Despite the hacker protests against the DMCA, I argue that F/OSS developers formally divorce the domain of software production from “official politics” through their particularized and heightened exercise of free speech, a principle predicated on an ideal of political impartiality. In other words, political denial is culturally orchestrated through the articulation of free speech principles grounded in licenses that inform the very content of permissible political discourse among hackers. This form of political disavowal facilitates the broad mobility of F/OSS as artifacts and signs and thus lays the groundwork for its *informal*, though potent, political scope: its key role as a catalyst by which to rethink the assumptions of intellectual property rights through its use and inversion.

As F/OSS recalibrates the relationship between free speech and intellectual property law it exposes assumptions embedded in both sets of legal rights. This political disorientation, however, is only made socially effective in a broader sense via public apprehension and its productive extension by other social groups. While there are multiple critiques and messages that can be read into F/OSS that could span multiple dissertations, my interest resides in the conceptual, sociological, and historical means by which F/OSS has heralded critique and social change. As Michael Warner stresses in his recent study on publics and counterpublics, we must evaluate the formal and historical conditions under which a public can behave politically—in the broadest sense of historical transformation; that is, evaluate when and how its actions come to “count in a public way, to be transformative” (2002: 63).

The witnessable set of F/OSS practices—for instance, the priority given to collaborative production over consumption, and the innovative deployment of licenses—conveys a cultural critique through its contrast to and collisions with the normative

treatment of knowledge, information, and consumption. As significant is F/OSS' legal and collaborative methodology is *semiotically* and *materially transposable*, and has thus historically served as a pragmatic template by which many other social groups have modeled and directed their endeavors. The wider effect of this circulation, visibility, and translatability within the technological context of the Internet, has been to open up a social space for other groups to fashion similar legal and collaborative possibilities. In unison with F/OSS, this has produced a material and moral challenge to the neoliberal logic underlying the expansion of intellectual property rights; a “logic of freedom” that makes property out of everything and at this historical juncture, seemingly out of very little, often in the name of consumer choice and market freedom.

While much of my dissertation examines the liberal face of F/OSS, it is also written to disturb the implied double (and connected) teleology found in many accounts on liberalism, governmentality, neoliberalism, and globalization. Too often, they construct history as an unproblematic movement in and through discrete eras—for example, from the age of liberalism to the age of neoliberalism or modernism to postmodernism, changes in the political economy having the effect of reverberating easily into “personhood” to create uniform subjects who then serve, *nolens volens*, to uphold the power structures of these economic formations (cf. Baudrillard 1984; Castells 1996; Jameson 1991; Rose 1999, 1996; Burchell 1996).

These works, at their best, conveniently ignore the issues of local forces of differentiation, such as the complex social configurations of class, ethnicity, gendering, sexuality, generation, and subculture. At their worst, they obscure some of the more pressing questions about the historical workings of domination, challenge, resistance, accommodation, and transformation. For example: how and why are liberal and

neoliberal constructs made compelling to certain social groups; how are a set of values particularly and politically deployed (and thus often revalued) within complex, multicultural societies; what is the role of historical contingency in the emergence of social movements?

Even those critical scholars who brand themselves as activists, using the medium of critique to forge paths for new political imaginaries, far too often fall into a trap of constructing desirable politics in simplistic trans-historical terms in which political activity is judged for purity by virtue of how cleanly it breaks with existing ideologies (Haraway 1985; Negri and Hardt 2000; Galloway 2004). In this line of thought, any adherence to dominant ideologies is deemed problematic or seen to lack the authenticity and self-consciousnesses seen as the necessary basis for “radical” alternatives. In doing so, they overlook significant sources of change that are often less dramatic and more piecemeal than they could account for or imagine, in part because they are looking for a form of political activity that exists more rarely (if at all) detached from culturally situated modes of being and entirely free of dominant ideologies. Here, I emphasize the political dimensions of F/OSS, that while clearly are “not a clash of titans” should be, as John Kelly and Martha Kaplan remind us, seriously judged not according to general ideals of resistance but by examining the local circumstances that shape the nature of political response (1994: 127).

In fact, F/OSS is an ideal object of analysis with which to complicate the teleological tendencies of critical capitalist scholars because it runs against the grain of many of the discursive and material elements that mark this age of high neoliberal consumerism. Without question we are, in many respects, witnessing a period in which self-fashioning and identity occur through consumptive practices that “re-vision persons

not as producers from a particular community but, as consumers in a planetary marketplace” (Comaroff and Comaroff 2000; also see Rose 1999; Appadurai 1996; Jameson 1991). Yet within this very milieu, in which social identity and even politics are produced through the consumption and presentation of style, F/OSS has acted as a partial, though potent, challenge to the dominant neoliberal discourses of freedom and property rights through alternative licensing and a visible praxis. Hackers see self-fashioning, cultural value, and progress as fundamentally derived through a type of never-ending DIY (do it yourself) creative production—a form of value that is nonetheless fashioned along accessible liberal tropes.

In order to give some specific grounding to the prologue, I now turn to the historical instances of hacker protests that serve as an initial historical and ethnographic point of entry to this dissertation. At the end of this introductory chapter, I will provide a short overview of the dissertation chapters.