

Two Bits: The Cultural Significance of Free Software by Christopher M. Kelty. Durham, NC: Duke University Press, 2008. 400 pp. ISBN 978-0822342649.

The Internet feels and operates the way it does today because of Free Software. Free Software (also known as Open Source), is a result of a social movement committed to the practice of sharing source code so that users may modify, change, and improve programs/software utilities. *Two Bits: The Cultural Significance of Free Software* shows us how Free Software reorients power and knowledge through the modification and engagement of its users/public. By understanding this reorientation and the cultural significance of Free Software we can make sense of a flurry of other phenomena that have emerged in and alongside the Internet.

For Christopher M. Kelty, the history, existence, and proliferation of Free Software is a story of an exemplar *recursive public*. A recursive public is a public invested in maintaining an affinity—an imaginary of a moral and technical order that brings people together and is “constituted by a shared concern for maintaining the means of association through which they come together as a public” (p. 28). In the case of Free Software, it is this affinity towards the modifiability of its existence that makes its grouping as a public possible.

Kelty is quick to show that the Internet alone is not a recursive public. Instead, the Internet is a medium for which a public can come together: it is infrastructure. Infrastructure is said to have three main components: artifacts or devices that convey information; activities or practices that involve engagement or sharing; and social arrangements or organizational forms that develop around the first two (Lievrouw & Livingstone, 2003, pp. 2-3). *Two Bits* presents Free Software as a kind of “collective technical experimental system” amongst/built by “geeks” that is made up of five ongoing and embedded practices (p. 15). In the book, Kelty discusses how geeks have “figured out” these practices as a recursive public and how the practices have spread/proliferated into other online projects like Connexions (an academic commons community). Listed respectively, the five practices that make Free Software recursive are: (1) fomenting the (open source software) movement, (2) sharing source code, (3) conceptualizing open systems, (4) writing licenses, and (5) coordinating collaborations.

These five practices are tied to a collective imaginary that binds geeks together and creates a moral and technical order around technology (standards, protocols, and software) and ideas about collective action, contribution, and change. These practices, particularly copyright licenses, have changed the way we think about where a work begins and ends on the Internet. These practices of Free Software have thus bled into the ways that Internet users conceptualize the knowledge found online.

Open Systems and Social Systems

So if the infrastructure of this experimental system is the Internet, and geeks have figured out how to use and continue to make use of these five practices to make a recursive public, how has Free Software impacted our society and how does it shift our understanding of publics? It is these techniques of sharing, modifiability, coordination, and openness which are embedded into the project of Free Software that unsettle historically stabilized ideas about works, but they are also integral to how we make sense of the Internet and the digital future/present.

Ideas about publication, ownership, and intellectual property have been shaken up since the implementation of Free Software and the Internet. Associating and acting through the Internet enables recursion: the abilities to modify, copy, change, and build works have not been afforded to us before (thereby changing knowledge and power). Take for example, as Kelty does in the first chapter, a message posted on a listserv about openness (p. 54). It is a private conversation in a public place but it is also a published opinion that is free to be accessed by anyone, can be stored and archived in any number of places, and can be searched for and found anywhere with a computer with Internet access. It may be published under a Creative Commons license and be copied, disseminated, and reused (as long as it is attributed). It is easy to see how a work that is published online is different from one in print because it continues to have a life; the possibilities of its use are embedded because recursion is built into the infrastructure of the system. By looking at Free Software in this way, *Two Bits* shows us that our existing definitions of self-governing publics are insufficient for understanding contemporary shifts of knowledge and power that have come as a result of the Internet. It is also easy to see how these embedded structural effects of Free Software (share, modify, copy, disseminate) are built into how we make sense of most online content like movies, television shows, and music, and why we are beginning to see these values of openness reinvigorate/prompt/engage our ideas about new practices that we do in tandem with the digital environment, like online learning and teaching. Because there are levels of recursion built into Free Software, people/collaborations and systems (technology) are collapsed.

Layers

Two Bits is made up of three parts. The first part considers the concept of recursive publics by looking at geeks. Kelty, who is an anthropologist trained in science and technology studies, begins by looking at Internet standards and Napster circa 2000.

His analysis shows how geeks maintain and modify technology as they build it, use it and share it. One might expect that Kelty would ask who these geeks are, but instead he asks why they associate with one another. Kelty's ethnographic angle looks closely at the words, tools, and stories that this international community uses to tell itself about its past and progress.

The second section of the book historically situates Free Software and its relation to the Internet. It is a careful, detailed account of the events, people, technologies, and practices that led to the emergence of Free Software. Beginning with Netscape's announcement to give away source code for its browser, this part of the book discusses the history and significance of the UNIX operating system, open systems, copyright law, the singularity of the Internet, and the coordination of source code and people. These stories show how the Internet is different from Free Software and contextualizes the practices of conceiving, creating, and maintaining openness and open systems.

The third part picks up the ethnographic thread from the first section and looks at two Open Source projects that Kelty has participated in and argues that they have taken up the practices of Free Software, modulated them accordingly, and exist as/have become recursive publics. Connexions is a textbook commons project at Duke University and Creative Commons is a non-profit organization that creates copyright licenses. Both projects use the practices of Free Software in new ways and the author is adept at clarifying these modulations (see especially one telling anecdote that causes the ethnographer to fall out of his chair). Each project applies the principle of sharing source code to non-coded objects like traditional works or licenses.

Requests for Comments

As other reviewers will point out elsewhere, this work is important because most literature published about Free Software and its movements have been written for geeks, by geeks. There is a dearth of literature that speaks to the proliferation of Free Software practices and how these shape the shifting practices of life that happen in and as a response to the Internet. The author, an anthropologist of science and technology, who has recently moved to UCLA's Center for Genetics and Society gives a convincing argument for how Free Software will help scholars looking at new practices of association/(publicness/sharing/recursion) that come as a result of online publics and knowledge production in a digital age.

Recently a Digital Humanities Manifesto was published online and the fifth point reads, "The digital is the realm of the open: open source, open resources, open doors."¹ This book will be meaningful for scholars and professionals who think, live, and work in contexts of openness. Information

professionals such as academic librarians and digital archivists charged with opening doors to knowledge will be pleased to see how recursion is built, modified, and modulated through the infrastructure of the Internet and elsewhere. For scholars of intellectual history, publics, and technology trying to locate the significance of Free Software and how it will change the future of knowledge production, exchange, and management, the book will be a welcome contribution. The book itself is a product of Free Software and this openness. Published under a Creative Commons license, it is available for free at www.twobits.net where it can be discussed, downloaded, and modulated.

Note

¹ Accessed on January 13, 2009 at <http://dev.cdh.ucla.edu/digitalhumanities/2008/12/15/digital-humanities-manifesto/>

Reference

Lievrouw, L. A. & Livingstone, S. (Eds.). (2002). *Handbook of new media: Social shaping and consequences of ICTs*. London: Sage.

Reviewer

Amelia Acker is the Ralph J. Bunche Archivist in the Department of Special Collections of the Charles Young Research Library at UCLA. She reads and writes about the cultural significance of ordering, standardizing, and archiving new forms of information.