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The Code and Politics of Drupal and the Pirate Bay: Alternative Horizons of Web2.0

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**THE CODE AND POLITICS OF DRUPAL AND THE PIRATE BAY:
ALTERNATIVE HORIZONS OF WEB2.0**

by

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Bachelor of Arts, Halifax, Nova Scotia, 2004

A thesis presented to Ryerson University

in partial fulfillment of the
requirements for the degree of

Masters of Arts

in the Joint Programme of
Communication and Culture,

a Partnership of
Ryerson University and York University.

Toronto, Ontario, Canada, 2008

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Abstract

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Code politics investigates the implications of digital code to contemporary politics.

Recent developments on the web, known as web2.0, have attracted the attention of the field. The thesis contributes to the literature by developing a theoretical approach to web2.0 platforms as social structures and by contributing two cases of web2.0

structurations: Drupal, a content management platform, and The Pirate Bay, a file sharing website and political movement. Adapting the work of Ernesto Laclau and Chantal Mouffe on articulation theory, the thesis studies the code and politics of the two cases.

The Drupal case studies the complex interactions between humans and code, and addresses how Drupal functions as an empty platform allowing its users to reconstitute its digital code. The Pirate Bay case demonstrates how a political movement uses code as part of their political platform. Not only does the group advocate file sharing, they allow thousands of people across the world to share information freely. At a time, when most web2.0 platforms act as forces of capitalism, the two cases demonstrate alternative, commons-based structurations of web2.0.

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Table of Contents

CHAPTER 1 - INTRODUCTION.....	1
DEFINING WEB2.0	6
THE POLITICAL ECONOMY OF THE DIGITAL ENCLOSURE	8
<i>Commodification</i>	9
<i>Spatialization</i>	15
<i>Structuration</i>	19
CODE POLITICS	24
<i>The Digital and Modularity</i>	26
<i>Platforms</i>	31
<i>Articulation Theory</i>	35
<i>Tactical Media</i>	37
CONCLUSION	41
CHAPTER 2 – THEORETICAL PERSPECTIVE & METHODOLOGY	43
BRIDGING EPISTEMOLOGIES.....	45
OVERDETERMINATION: THEORIZING POSSIBILITY	48
PRACTICES OF ARTICULATION	52
ENFRANCHISING HUMANS AND NON-HUMANS ALIKE	56
HEGEMONY	62
METHOD	66
CONCLUSION	70
CHAPTER 3 - DRUPAL.....	75
INTRODUCTION.....	75
ENTRY STORY	77
THE PROBLEMS OF THE INTERFACE	84
THE MODULAR INTERFACE OF DRUPAL	88

<i>Modularity & Development</i>	94
CONCLUSION	97
APPENDIX I.....	101
APPENDIX II	102
CHAPTER 4 – THE PIRATE BAY	103
INTRODUCTION.....	103
ARRIVAL STORY	104
THE ARTICULATION OF A POLITICAL MOVEMENT	108
THE DOUBLE ARTICULATION OF THE PIRATE BAY	111
<i>The Beginning of the Pirate Bay</i>	111
<i>Creating an Antagonism</i>	112
LAUNCHING THE PIRATE BAY	114
<i>Keeping Piracy Public</i>	120
<i>Expressing Piracy as a Political Movement</i>	122
<i>Keeping the Antagonism Alive</i>	124
<i>Resiliency of the Platform</i>	126
<i>A Popular Horizon</i>	128
CONCLUSION	129
APPENDIX I.....	132
APPENDIX II	133
APPENDIX III	134
APPENDIX IV	135
APPENDIX V	136
CHAPTER 5 - CONCLUSION	137

Chapter 1 - Introduction

On 31 May 2006, a website running off a server in Stockholm Sweden shut down, three days later, hundreds of people protested in front of the Swedish parliament buildings. The protestors held placards, waved banners, and listened to speeches from politicians and activists contesting the website's shutdown. They stood in support of the *The Pirate Bay* (TPB): one of the world's most popular file-sharing sites, a vocal opponent to copyright and intellectual property, and an infamous source of pirated digital goods. Thousands of people from across the world also showed their support for the protestors and the website through their blog posts, circulation of the story, and assistance of the server's administrators in restarting the website and relocating their servers. Through their collective support and the work of the people behind TPB, the website came back online two days later despite continuing legal pressures to close it down. Although the legal aspects of this case demand attention, the popularity of the site and its success in gaining public support is equally interesting. To the public, the Pirate Bay was a symbol of a different form of exchange and communication. The people who protested around the world wanted to protect this symbol.

Across the globe, one year earlier, another server crashed. This old server could not keep up with the traffic running through its circuits. The site hosted the *Drupal* content manage platform: a free software project that allowed users to create and manage complex websites. The project had become so popular that the server could not keep up with all the users' contributions, the discussions happening on the project's forums, the many offering of technical support from experienced users, and the thousands of people downloading the public goods shared on the site. With little money of their own, the

administrators put a call out on their website asking for help buying a new server that would allow the project to continue. Two days later, over 250 people donated money totaling over \$10,000 dollars to buy a new server. Again, people found the software so valuable they were willing to contribute their time and money to support a public good, in the form of a piece of free software.

The Pirate Bay and Drupal share some common treads. They involve websites and their constitutive digital code that have become an important part of people's everyday lives, to the point that they are willing to donate their time and energy to the projects. Each websites provide the public ways to participate and produce on the world wide web that we now describe as user-generated content (Jenkins, 2006a) and social media (Aufderheide, 2002). The Pirate Bay and Drupal exemplify a development in world wide web in Western post-industrial nations, know as web2.0. Particular configurations of web2.0 give people a platform – a place to build-upon or speak often in shared networked spaces. If politics means “the arrangements of power and authority in human associations” (Winner, 1986, p. 21), then web2.0 platforms and the ways they bring humans together, are inherently political. Both Drupal and the Pirate Bay provide distinct platforms for people – ones whose uniqueness I will develop over the course of this thesis. They demonstrate how code creates conditions for people to operate and how the conditions of code influence human behaviour.

Although my account mixes technology and politics, most accounts of web2.0 keep the two separate. The business literature cites a tangible technological change that drives innovation (O'Reilly, 2005; O'Reilly, 2006a, 2006b). Woe is the business caught using web1.0 strategies. Inversely, the political literature ignores the growing influence of

technology and tries to distill a pure politics out of technical actors (Latour, 2004a, 2004b, 2005). I want to take a more rounded approach to web2.0 and speak about the technical and political aspects simultaneously. I think this approach will give a better account of web2.0. Without the politics, web2.0 mistakenly looks like one unified technical trend; without the technical, the very conditions of web2.0 would be lost. Web2.0 platforms involve a series of simultaneous, diverse, and conflicting processes that structure people and technologies together. My thesis asks how we can theorize the various articulation of web2.0 by looking at the technical and the political simultaneously. To answer my question, I study how humans and computer interact to articulate – in their politics and their code – different platforms of web2.0 using my cases of the Pirate Bay and Drupal.

Drupal and TPB take some of the potentialities latent in web2.0 and *tactically* articulate them into their platforms. Their platforms have political ramifications that constitute distinct forms of production and access. The particular ways the two cases articulate web2.0 demand our attention because their structures enact certain political practices: ways humans behave, and power relations. Each of the websites has their own code politics and to study their political structures. In the following introduction, I will address the commons, code politics, web2.0, platforms, and tactical media in detail.

I situate my work within the field of code politics (Elmer et al., 2007; Foot & Schneider, 2006; Galloway, 2004; Langlois, 2005; Latham & Sassen, 2005): a field of study interested in the political aspects of digital code, such as the world wide web, software, computers, and networks. The field investigates the permeation of digital systems in our daily lives, our political systems, and our cultures by studying code as a

material element that supports or constitutes political economic structures. Code politics investigates human interactions with computers and their underlying functions, algorithms, logics, and instructions. In doing so, research uncovers the powers dynamics of code often overlooked by other fields of study.

TPB and Drupal also face a common challenge. In both cases, powerful forces shut down the sites. In the case of the TPB, many claim the Motion Picture Association of America pressured the Swedish police into taking down the site. In other words, international copyright holders deliberately tried to shut down the Pirate Bay. In the case of Drupal, pure economics shut down the site. It costs money keeping a project free. Market forces, unintentionally or intentionally, push non-market practices out of the public's everyday tactics. One could argue that the many market forces that constitute our contemporary hegemony, a term I define later in this chapter, threaten to close off practices contained. In the TPB and Drupal from the array of practices available to the public. Many scholars argue this threat involves a digital enclosure (Andrejevic, 2002; Bettig, 1997; Boyle, 2003; Dyer-Witheford, 2002): a structuration of the web that deploys certain market logics that commodify information and spatialize the web to perpetuate hierarchy and control. The continued existence of the two cases demonstrates that the digital enclosure remains an incomplete process.

My discussion about new forms of participation, and the digital enclosure would be rhetoric without elaboration. My thesis asks how their code – the way they constitute themselves digitally – of TPB and Drupal provides different structures of production and access. I study the particular contributions of the two cases, and the politics of their code. Thousands of people already recognize the importance of Drupal and TPB. In my own

work, I seek to situate the significance of TPB and Drupal and explore their particular configurations of the possibilities of web2.0.

My thesis is a theoretical discussion of how code and humans interact to articulate certain political structures. We are only beginning to understand how code structures the web and the implications of its constitutive role. I then ask what TPB and Drupal *do* and why they are significant configurations of web2.0 – what possibilities of web2.0 do they emphasize. Through the case of Drupal, I explore the challenge in designing software that reconstitutes its code; in doing so, Drupal provides a way of increasing access to the means of producing web2.0 structures. Although the Drupal code represents an important process on the web, I also need to study the ways political movements deploy code.

While Drupal might have its own code politics, the case of TPB best represents a political movement that uses code as part of their movement. They use code to popularize and include the public in their anti-copyright campaign. Through my two cases, I argue we get a sense of the political deployments of web2.0, new forms of participation, and resistances to digital enclosure. In short, I argue TPB and Drupal demonstrate how web2.0 changes how humans interact with the web and, by extension, with each other.

In the following chapter, I will situate my work, introduce my theoretical perspective, and demonstrate the legitimacy of my two case studies. I begin with a review of the literature surrounding web2.0. The political economic concept of the digital enclosure organizes the review. Next, I move to a discussion of materiality of digital code and how web2.0 modifies the world wide web constitutive code. In response to the changes in code, I argue that articulation theory best addresses web2.0. Finally, I conclude by introducing my cases and define how they contribute to the thesis. Before I

begin, I first need to establish the foundations of my argument and the first concept I need to introduce is web2.0.

Defining Web2.0

As a concept, web2.0 feels a bit like a black hole. Everything gets trapped within its porous conceptual boundaries. If anything, web2.0 refers to the contemporary state of the world wide web. YouTube, Facebook, Wikipedia, and Google have entered our public consciousness to define web2.0 sites and exemplify the larger trends of social media, online video, user-generated content, blogging, social networking, and wikis¹. Web2.0 websites feature rich interactivity, dynamic content, and complex interfaces (Vossen & Hagemann, 2007). In short, web2.0 makes the web behave more like desktop software, albeit in a networked environment, and gives audiences and publics new ways to interact and collaborate by networking them together using different standards, causes, and beliefs.

To understand the politics of web2.0, we first need to situate it within a political theory that will give us some focal points. Gramsci argued that how society organizes itself, particularly the relations between classes, changes historically. Social struggle and change involves a conflict over political configurations and temporary alliances – either to reinforce or erode them. He calls these historical blocs *hegemonies*. By studying the implications of web2.0 to hegemony, we have an opportunity to find “potential critical fissures opening and of possibilities for progressive social and political change” (Elmer, 2006b, p. 163). My thesis investigates alternative configurations of web2.0 as a way of

¹ Thanks to Zachary Devereaux for his insights into web2.0.

looking for potential ruptures in our contemporary hegemony.

A number of works have asked a similar question about the relation to internet and hegemony (Castells, 1996; Dean, 2002; Dyer-Witheford, 1999). One of the most novel discussions of the internet and power involves a concept known as the *digital enclosure*.² The digital enclosure begins with an acknowledgement that the web is significant in comparison to other media, but also part of on-going political processes around media. Dyer-Witheford argues the web is an important medium in comparison to “the more easily controllable older media, such as newspapers, radio, and television, where well known processes of corporate filtering are strong” (2007, p. 196). The concept then relates the enclosure of the feudal commons to the ways market logics and forces deploy on the web. In effect, the web is seen as a commons, a shared, public space, under siege from market forces that want to convert a public resource into a privately-owned one.³

Hess & Ostrom distinguish two sides of the digital enclosure: “the history of enclosure and the history of openness and inclusiveness—that is, democracy and freedom” (2007, pp. 12-13). As a conceptual lens, the digital enclosure helps to divide the literature into a positive description of the web as a relatively free and public medium, and a negative version of the web – one enclosed by the market. In doing so, the term captures the competing, divergent, and overlapping articulations of web2.0.

The digital enclosure is a political concept. By political, I mean “the dimensions

² In this chapter, I combine the literatures on the e-commons, the anti-commons, and the second enclosure.

³ The digital enclosure tends to paint the controversy on the web in fairly stark terms, and a more in-depth analysis of the subject would have to mitigate such black and white language; however, for the purpose of a literature review, the concepts help to quickly structure a central debate in the location of the world wide web in relation to capitalism.

of antagonism ... constitutive of human societies” (Mouffe, 2005a, p. 9). Generally, the digital enclosure involves two political economic forces: capitalism and corporations and the commons and common-ists. Following Mouffe’s definition of the political, the conflict between the two forms constitutes the general phenomenon of web2.0. Commonists and corporations struggle over the direction and future of the web. In effect, they become the political sides of the web that frame my exploration of the politics of the web.

The Political Economy of the Digital Enclosure

At its heart, the digital enclosure focuses on the political economy of the web. Political economy as a discipline focuses on “the social relations, particularly the power relations, governing the production, distribution, and exchange of resources” and the “broad problems of control and survival” (Mosco, 1996, p. 68) (p. 68). Mosco (1996) describes three points of entry into political economy: commodification, “the process of transforming use to exchange value”, structuration, “the process of constituting structures with social agency”, and spatialization, “the transformation of space with time” (Mosco, 1996, p. 138). I will use the three processes to tease out exemplary trends in the literature around the web. I will relate different forms of each process to capitalism and the commons as provided by the digital enclosure. I will begin this review first with a discussion of the commodification of the web. Next, I will review the perspectives regarding the spatialization of the web. Finally, I will move to a discussion of structuration. I argue that structuration defines the other two processes and demands the most attention, particularly for my cases. As a result, I will dedicate my next chapters to exploring alternative structuration of the web. In the conclusion of this section, I will

rationalize my interest in the technical aspects of web2.0, particularly how its technical aspects relate to alternative structurations of the web.

Commodification

Commodification refers to the ways things, ideas, and forms of life become private property tradable on the market. The commodification of the web involves the transition of digital information into intellectual property. The World Trade Organization defines intellectual property as “ideas, including literary and artistic works (protected by copyright), inventions (protected by patents), signs for distinguishing goods of an enterprise (protected by trademarks) and other elements of industrial property”⁴. Digital enclosure involves the “sustained drive to consolidate intellectual property in a digital environment” (Dyer-Witheford, 2002, p. 133) and occurs because capitalism is an expansive force that seeks to assimilate all forms of life including many distinct non-market activities on the web. As David Harvey states “capitalism is expansionary and imperialistic” and as a result “cultural life in more and more areas gets brought within the grasp of the cash nexus and the logic of capital circulation” (Quoted in Bettig, 1997, p. 139). The process involves “the buying and selling of human life-time” that subordinates “all activity to the law of value” (Dyer-Witheford, 1999, p. 9). In a digital environment, the enclosure applies value to immaterial units, such as bits, bytes, and bandwidth.

Applying market value to the web is a challenge because it is an information system. By that I mean, the web encodes, communicates, and renders bits of knowledge. Commodification is a struggle over how information on the web should translate into

⁴ http://www.wto.org/english/thewto_e/glossary_e/intellectual_property_rights_e.htm

property. The market treats information as private property, where commonists treat information as a public property. The two perspectives manifest their own processes of commodification and decommodification. In the following section, I discuss the different processes of creating property in relation to the world wide web.

The imposition of intellectual property regimes attempts to change the information flows of the web to resemble what Mosco (1989) calls a *pay-per society*. For each time a consumer accesses a copyrighted material they would be expected to pay (Bettig, 1997, p. 140). Drahos & Braithwaite argue the result of intellectual property regimes is *information feudalism*, where “individuals everywhere increasingly find that every time they use information in some way they trigger an obligation to pay a fee to an intellectual property owner”(Drahos & Braithwaite, 2003, p. 4).⁵ Their term relates the commodification of information with the feudal system where lords profited by renting out their fiefdoms. Today, corporations have their own fiefdoms of intellectual property. As Lessig states, “the consequence is that we are less and less an free culture, more and more a permission culture” (Lessig, 2004, p. 8). The digital enclosure, thus, seeks to translate information flows into capital flows where bits have value and surfers pay for the information they consume.

The success of information feudalism or a pay-per society depends on successful translation of intellectual properties into digital goods. This translation is problematic because digital environments destabilize the commodity form. Typically corporations

⁵ Take the many ways I repurchase the same song: to listen to the song in my CD player I need to buy the CD, to listen to the song on my computer or iPod I have to buy a digital copy, and finally, to use the song as a ringtone on my phone I have to buy the song in a special format that my phone will recognize. I am expected to pay three times for the same copyrighted work and the same scenario applies for books, and music.

profited by controlling the limited means of production, distribution, and exchange. Scarcity played a major role in this system (Mosco, 1996, pp. 140-145). In digital environments, commodities move from a material or physical existence to an immaterial or digital existence (Doyle, 2002, pp. 154-155; Hardt & Negri, 2000, pp. 179-182; Wark, 2006, pp. 174-177). All digital goods, when recorded as a unique pattern of information, become digital objects that do not have the same value as a material commodity. Since computers operate by reproducing, manipulating, storing, and copying digital objects, immaterial commodities no longer have the same degree of scarcity as material commodities (Galloway, 2004, pp. 72-74). For an industry that depends on making you buy your own copy, the simplicity of sharing digital goods is a legitimate threat. The digital enclosure, in part, refers to the ways capital struggles to protect the commodity form in cyberspace and retain its artificial scarcity (Hirsh, 2001, p. 57) by enclosing digital bits into intellectual property regimes. The communist perspectives differ in their response to the instability of property in a digital environment. Some actively antagonize copyright holders where others try to exist as a third way.

Some communists argue that piracy creates its own commons or *grey commons* that renders all information in the public domain (Rasmus Fleisher & Palle, 2006; Sengupta, 2006). From the extreme of information feudalism, advocates of the grey commons advocate the end of any private intellectual property. To date, piracy continues to impede the establishment of intellectual property regimes on the internet. Strangelove goes so far as to say, “corporations have proven themselves incapable of maintaining control over digital products” (p. 56). A number of authors point to the continued success

of computer piracy⁶ as evidence of digital environment (Bhattacharjee, Gopal, & Sanders, 2006; Dyer-Witheford, 2002; Gopal & Sanders, 2000; Poster, 2007; Shin, Gopal, Sanders, & Whinston, 2004; Strangelove, 2005; Tetzlaff, 2000; Wark, 2006). Piracy refers to the illegal copying of digital goods. By degrading the cost and scarcity of intellectual property, piracy is a decommodification process and a form of resistance to the digital enclosure.

Other commons-based perspectives see the instability of the digital commodities as an opportunity for the increase in public goods without antagonizing the market. As Boyle states, “the threat of overuse of fields and fisheries is generally not a problem with the informational or innovational commons” (2003, p. 41). We both can have a copy of a digital object without adversely each other. Commonists in this camp argue that the web allows for the sharing of public goods in conjunction with private goods. Benkler does not see the commons as a replacement to the market or the state, but rather a third way. Benkler states that social sharing “is a third mode of organizing economic production, alongside markets and the state” (2004, p. 377). The Creative Commons exemplifies the third-way approach. The group writes open terms of use for creators to license their works (Kelty, 2008). The organization estimates that over 130 million works are shared with the creative commons license (Creative Commons, 2008)

Pirates and third-way commonists not only argue that the web encourages the sharing of goods, but also that the web allows for new forms of production. Benkler

⁶ Piracy only appears to have grown in popularity since the arrival of the internet in the early 1990s. Piracy became massively popular with the introduction of Napster in 1999. At its peak, Napster had 60 million users. After Napster was shut down in July 2001, traffic moved to imitators like Kazaa and Grokster (Brown, 2002). Piracy costs the culture industry billions in lost revenues. In 2006, the Business Software Alliance lost an estimated \$39.6 billion in revenue due to piracy (Economist, 2007) and, in 2005, the Motion Pictures studios lost an estimated \$2.3 billion due to piracy (MPAA, 2006).

argues that networked environments encourage the sharing of public goods. He calls ‘sharable goods’ as “a class of resources or goods that are amenable to being shared within social sharing systems rather than allocated through markets” (Benkler, 2004, p. 377). In short, certain goods benefit from being shared, rather than bought and sold. Sharable goods include extra seats in your car shared in carpools, extra capacity on our computers donated to SETI’s search for intelligent life, and free software projects, such as Linux or Drupal, that actually benefit from being freely shared. Many digital sharable goods, such as free software, depend on non-market forms of production. In order to justify his claims about social sharing, Benkler also describes a new model of production. Using networked technologies, publics interact through *commons-based peer production*: “radically decentralized, collaborative, and nonproprietary; based on sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other without relying on either market signals or managerial commands” (p. 60). Commons-based peer production results in networked public goods, such as creative-commons licensed music, free software such as Linux, and free information such as Wikipedia. Many web2.0 sites claim to operate using this model.

Despite the optimism that Benkler exhibits in his work on common-based production, the same systems of participation have also been seen as new processes of commodification. The literature here relates participation and altruism to forms of immaterial labour. Corporations harness the public’s immaterial productivity through web2.0 platforms. We can separate harnessed immaterial activities into two categories of commodification: free labour (Coté & Pybus, 2007; Terranova, 2004) and surveillance (Albrechtslund, 2008; Andrejevic, 2002; Chung & Grimes, 2005; Elmer, 1997).

In regards to surveillance, web2.0 production involves *intrinsic cybernetic commodification* (Mosco, 1996, pp. 150-153). This process refers to the intensification of the extraction of value from consumers beyond their consumption by monitoring and profiling the audience to generate information for sale to advertisers and other industries. In short, the techniques intensify consumption by adding more value to existing relations, such as watching. For example, digital surveillance is a key component of the digital enclosure because it allows companies to extract value from otherwise everyday activities. Through new monitoring techniques, our watching or surfing is watched by companies to generate cybernetic commodities that companies can trade and sell (Andrejevic, 2002, pp. 237-239). Social networking sites exemplify Andrejevic's productive surveillance as the companies profit from monitoring our profiles and socializing on the web.

One could argue that surveillance does not negate the potential of commons production because it depends on a primary activity, such as browsing. We do not use Facebook to be watched by the company. (Although we probably use Facebook just to be watch by our friends). Andrejevic continues that productive surveillance “can be understood as being always parasitic upon another form of labor” (Andrejevic, p. 233). Indeed, web2.0 provides other primary activities, such as uploading videos or hanging out, to justify surveillance. That is why the literature also develops a critique of web2.0 based on corporations' ability to exploit the free labour of audiences (Bendor, 2007; Côté & Pybus, 2007; Terranova, 2004). In this literature, corporations control the dominant platforms of web2.0 so that user productivity – audience labour – flows through corporate channels. Crowdsourcing (Howe, 2006) and the prosumer (Tapscott & Williams, 2006)

are two good examples from the business literature of this type of commodification. Both refer to a new trend in business that tries to rope the consumer into bringing value to the company. Tapscott & Williams argue that web2.0 allows consumers “become “prosumers” by co-creating goods and services rather than simply consuming the end product.” (Tapscott & Williams, 2006, p. 1). For example, YouTube profits because of the user’s productivity that fill the site full of videos. YouTube only provides a platform to share videos, YouTube’s value results from thousands of users uploading videos. The site profits by attaching advertisements to audience-generated video commons.

In this section, I reviewed the processes of decommodification and commodification to describe the practices that produce the web and govern production on the web. To fully understand the tension over commodification, we need to move to the next process of the political economy of web2.0. New forms of commodification flow into the various process of spatialization. In order to manage the flows of information into commodities, the digital enclosure involves different spatial forms that manage commodification. In the following section, I introduce and explore the various processes of spatialization that have been connected to web2.0.

Spatialization

Spatialization refers to the way “capital transforms space, by restructuring the spatial relations among people, goods, and messages” (Mosco, 2000, p. 174)(Mosco, 2000, p. 174). Spatial relations take different vertical and horizontal forms that respectively configure hierarchy and access. Where Mosco (1996) uses vertical and horizontal forms to explore corporate organizations (p. 175-176), we can also use them to explore the different processes of spatialization involved in the digital enclosure as others

have done (Elmer, 2006b; Franklin, 2001). Vertical structures refers to top-down or *trickle-down* relationships, where as horizontal structures refers to peer-to-peer or lateral relationships (Franklin, 2001, pp. 158-160). Verticality refers to the concentration of power in hierarchies; horizontality refers to the decentralization of power. In the following section, I will describe both the literature of the commons and the enclosure in regards to their horizontal and vertical formations.

Let me begin with the linkages between the commons model and an increase in the horizontality of the web. Digital technology is often linked to the concept of *participatory culture*: the acknowledgement that audiences are no longer passive, but actively involved in the interpretation and construction of cultural content (Balkin, 2004; Benkler, 2006; Cover, 2006; Herman, Coombe, & Kaye 2006; Jenkins, 2006a, 2006b; Lowrey & Anderson, 2005). Three historical developments led to participatory culture:

a) New tools and technologies enable consumers to archive, annotate, appropriate, and re-circulate media content, b) a range of subcultures promote DIY [do-it-yourself] media production and a discourse of how consumers have deployed their technologies, and c) economic trends favoring the horizontally integrated media conglomerates encourage the flow of images, ideas, and narratives across multiple media channels and demand more active modes of spectatorship (Quoted in Herman et al., 2006, p. 193)

As a spatializing process, participatory culture involves a general horizontal expansion that includes more people in the cultural production and decreases the vertical barriers to entry. In short, more people become involved in cultural production.

The web and web2.0 have been exemplary topics for proponents of participatory culture. Blogging, Wikipedia, YouTube, and free software projects all exemplify different ways people get involved in production of knowledge, culture, and public goods. A quick survey of the field shows a number of fields influenced by participatory culture, including journalism (Deuze, 2003; Gillmor, 2004; Kahn & Kellner, 2004),

knowledge production (Strangelove, 2005; Sunstein, 2006), software development (Raymond, 2001; Weber, 2005), and political culture (Balkin, 2004; Foot & Schneider, 2006; Trippi, 2004). Lessig captures much of the sentiment about participatory culture when he says, “the internet has unleashed an extraordinary possibility for many to participate in the process of building and cultivating a culture that reaches far beyond local boundaries” (Lessig, 2004, p. 9). Finally, many of the elements of participatory culture have been captured in the popular phrase *user-generated content*.



Figure 1 - Source: <http://www.wired.com/wired/archive/12.10/tail.html>

Andresen provides a rather useful diagram to think about the increase of horizontality on the web. He argues the web overcomes hierarchies and inequities of access because it scales horizontally better than older media. For example, Amazon, a digital bookstore, sells 2.4 million books, where a typical Barnes & Noble, a physical bookstore, only sells 130,000 books. He illustrates the expansive space as a power law curve with a long tail, see figure 1. He argues that the long tail represents the horizontal expansion to include non-mainstream cultures and interests. Anderson further argues that the web decreases hierarchy by linking popular and less popular elements. Referring to Figure 1 he states,

For instance, the front screen of Rhapsody features Britney Spears, unsurprisingly. Next to the listings of her work is a box of “similar artists.” Among them is Pink. If you click on that and are pleased with what you hear, you may do the same for Pink’s similar artists, which include No Doubt. And on No Doubt’s page, the list includes a few “followers” and “influencers,” the last of which includes the Selecter, a 1980s ska band from Coventry, England. In three clicks, Rhapsody may have enticed a Britney Spears fan to try an album that can hardly be found in a record store (Anderson, 2004).

In the digital commons, the metaphor of the long tail illustrates how the increased horizontality of culture increases the plurality of people and practices on the web and lowers the inequities of hierarchy on the web.

In contrast to the optimism exhibited by the commonists, web2.0 also involves spatialization processes that privilege verticality (Elmer, 2006b). As a concept, verticality responds to “the increasingly monopolistic, anticompetitive, and antidemocratic trends in networking innovation, standardization, governance, and commerce” (p. 165). Most vertical arguments tend to agree that digital technologies allow market forces and logics to expand horizontally without decreasing their vertical power. Companies on the web seek to centralize traffic on the web into enclosed corporate portals (Dahlberg, 2005). In effect, the capitalist spatialization involves similar processes as participatory culture without any change in power. The web becomes like a megaphone – reaching thousands, but accessible by few. Google exemplifies this type of enclosure by becoming the point of entry for surfers on the web. The search engine positions itself between us and shared knowledge online (Kirschenbaum, 2000).

Vertical spatial forms also distance the users from any control over their web-software. Unlike desktop software where users could install and remove software, web2.0 users no longer have these options. As Gmail’s Term of Use states, “Google also reserves the right to modify, suspend or discontinue the Service with or without notice at any time and without any liability to you” (“Gmail Terms of Use,” 2007). Users have no ability to

not upgrade or to opt-out. Web2.0 locks users into the *perpetual beta* where the conditions of their software can change without notice (Neff & Stark, 2004). Web2.0 enclosure involves a horizontal expansion in participation while maintaining a vertical concentration of power (Jarrett, 2008; Petersen, 2008).

The literature tends to diverge on how to theorize this form of popular vertical spatialization. Most approaches use a combination of three major traditions. Often concepts from autonomous Marxist thought have been applied to describe web2.0 as a software mechanism to harness human productive power. People work on web2.0 sites and companies exploits this labour to generate a profit (Bendor, 2007; Petersen, 2008; Terranova, 2004). Second, Foucault's work on surveillance and disciplinary societies has been adapted to grasp the erosion of privacy and the increase of profiling in web2.0 (Albrechtslund, 2008; Coté & Pybus, 2007; Jarrett, 2008; Zimmer, 2008). Finally, a few works have begun to apply Deleuze's work on the control society to discuss how power now modulates to adapt to increased diversity and fluidity (Langlois & McKelvey, 2008).

As should be now clear, there remains a great debate over the state of the digital enclosure. As I have shown, both sides of the processes have evidence to support their claims. Therefore, the debate in the literature really occurs in the effectiveness of the digital enclosure. Given the continued existence of information commons and digital enclosures, there is continued need to study the construction of the web as an on-going process. In the following section, I will review the various processes that construct the web before settling on my own work on code.

Structuration

So far, my literature review has explored the different characteristics of web2.0 –

their spatial forms and their productive practices. I argued that both corporations and commonists have created their own version of web2.0; however, I have not explored *how* web2.0 structures occur nor explained how politics manifest into different structures. In the following section, I want to define the process of construction or the *structuration* of web2.0 and then describe some of the locations of structuration of web2.0.

Structuration refers to “a process by which structures are constituted, even as they provide the very ‘medium’ of that constitution” (Mosco, 1996, p. 212). The concept describes the construction and operation of political economic structures. Structures define the possibilities and way of change in society. It is a complex concept because humans exist and operate within structures as they interact and construction them. As Mosco states, “structure provides the medium of which agency operates” (1996, p. 213). Structuration resembles a fish studying water because the fish lives in very medium it studies. He argues that social class, gender, and race all are all examples of structure because they define and are defined by people.

Mosco briefly relates structuration to the work of Laclau & Mouffe (1993 [1985]). Although Mosco criticizes their work, he suggests that their theoretical work relates to the study of political economic structures (1996. p.212). I depart from Mosco’s reading of structuration and use Laclau & Mouffe’s work for reasons that I explain later in this chapter. For this thesis, structuration is identical to Laclau & Mouffe’s work on articulation: a concept I define in Chapter 2. For now, articulation refers to “a political construction from dissimilar elements” (Laclau & Mouffe, 1993 [1985], p. 85). Returning to structures like class, race, and gender, articulation refers to the ways meanings and materials, sexes and skin tones, and roles and productivity come together to define social

agency and order. These orderings have political implications that limit and define the mobility and fluidity of actors and their practices. From my literature review, spatialization and commodification occur through structuration. Different web2.0 sites organize humans and code with different political ramifications.

The structuration of web2.0 occurs in many ways. Building off Dyer-Witheford's work on the digital enclosure, I suggest the digital enclosure is a three-pronged attack that occurs through law and policy, discourse and public opinion, and code⁷. In the following review of the articulation of the web, I will briefly review each area before moving to my own interest in articulations through code.

First, discourses and myths play an important role in structuring the possibilities of the web. Mosco (2004) shows how myth and social imaginaries play a vital role in shaping technologies. Myths, in this sense, refer to the "a principle of reading a given situation" (Laclau quoted in Torfing, 1999, p. 115) and social imaginaries refer to the conditions of "possibility for the emergence of any object" (Laclau quoted in Torfing, 1999, p. 115). These two discursive elements shape how people think about technology. Connecting the web to an information superhighway or digital commons, for example, each involves an act of structuring the web within different discourses. Mosco (2005) argues that the world wide web arrived within a literature on the end of ideology, the end of history, and the arrival of a global village. These myths amplified many of the potentialities of the web as a great equalizer and a virtual community (pp. 13-16). Myths and imaginations also serve to justify legal and code based structurations of the world wide web. Especially, through a series of discursive tactics, corporations pressure

⁷ Thanks to Kenneth Werbin for helping me understand the multiplicity of the social.

government, publics, and policy-makers to create legal enclosures of conduct and behavior online.

I do not have the space or capacity to summarize the various myths about the internet and I would also be duplicating work of Mosco and others (Flichy, 2007; Lovink, 2001; Mosco, 2004). Within the digital enclosure, both camps locate web2.0 within their own distinct discourses that I defined at the start. A few works have tried to summarize the myths involving web2.0 (Allen, 2007, 2008; Scholz, 2008). Often corporations use myths of audience participation and interactivity as rhetoric that justifies their exploitation of immaterial labour.

The second prong of the enclosure involves changing the laws and government policies that regulate the world wide web within distinct legal and governmental regimes. While not an exhaustive summary, some of the legal structurations include debates around internet governance and network neutrality, censorship, file sharing, open and universal access, and copyright and digital rights law⁸. In each case, commonists and capitalist both depend on legal regimes to protect their interests on the world wide web. In the United States, for example, the tensions over copyright exemplify the types of legal structurations taking place. Copyright holders lobby government to legislate strict regimes over digital copying that favour large copyright holder, such as the Digital Millennium Copyright Act. At the same time, commonists use copyright laws to expand the public domain. The Creative Commons is essentially a non-profit organization that provides legal protection for public goods (Kelty, 2004). As a result of all this legal

⁸ In Canada, these cases include: BMG vs. John Doe, 2004, Society of Composers, Authors, and Music Publishers of Canada vs. Canadian Assn. of Internet Providers, 2004, and CCH Limited vs. Law Society of Upper Canada, 2004.

activity, “the ordinary ways in which individuals create and share fall within the reach and refutation of the law, which has expanded to draw within its control a vast amount of culture and creativity that it never reached before” (Lessig, 2004, p. 8). Importantly, law and policy manifest material systems, such as network backbones, internet governance institutions, and enforcement agencies. One of the major ways law manifest on the web is through code.

Finally, the structuration of web2.0 also occurs in code. By code, I mean the software instructions that operate computer hardware. Code has been used as a way to address the material conditions of the digital as computers depend on code to function and code dramatically alters the behaviors of machines. Galloway states “code is the only language that is executable, meaning that it is the first discourse that is materially affective” (p. 244). He means that by writing in code, programmers create, literally bring into existence, digital worlds running on computer infrastructure. As Lessig describes code as the built environment of cyberspace (Lessig, 2006, p. 121). By studying code, we can study the constitution of digital environments and by extension its political economy latent in the politics of code. In sum, code constitutes digital environments by governing the operation of machines and, increasingly, code assembles people, computers, and digital actors together with its confines. The digital enclosure occurs through the industry funds the development of digital locks and exclusionary technologies that would protect intellectual property online, such as copy protection and digital rights management, while pre-empting any unauthorized usages (Dyer-Witheford, 2002, pp. 132-135). Advertising, digital surveillance, and free labour also depend on code to target profiled advertising, produce new cybernetic commodities based on a user’s web usage, and the consolidation

of web traffic into commercial web portals (Dahlberg, 2005, pp. 163-172).

Of the three prongs of the digital enclosure, we need to reconsider the structurations of code in light of web2.0. As Fuller states, structurations in code are “often imperceptible, actuated with little public debate or even platform capable of achieving debate with meaningful affect” (2008, p. 4). Web2.0 is primarily a technical development that has been adopted by different political actors within the digital enclosure. Recent technical developments alter the existence of the web. As a digital environment, code existentializes the web. As a technical development, the best way to study the structurations of web2.0 is through code. However, the literature on the digital enclosure does not delve into the particularity of code. To address this shortcoming in the literature, I will use literature of code politics as a perspective and method to study the structurations of web2.0.

Code Politics

Code politics is a topic within web studies and software studies that addresses the political implications of software and code. The field tries to understand how code behaves like a material system even though it is, by definition, an immaterial system. The field seeks to understand the conditions of code in relation to power, capitalism, and control. Studying code politics means studying how actors have “literally encoded the Web for their political purposes” (Elmer et al., 2007). For example, Grusin (2000) explores the code politics of the computer when he relates an operating system’s desktop with physical real estate that corporations compete to control. He argues that, “whenever you boot up your computer, you are engaging in a commercial transaction in a mediated public space which is being increasingly contested by Microsoft, the USA Government,

and inevitably other governments and corporations as well” (p. 59). Even the matter of your default web browser has tremendous value for corporations⁹. As an example, Grusin demonstrates that the landscape of our desktop has political and economic value and its value depends on its constitutive code. In the following section, I outline the ways scholars have deciphered the politics of code.

A central divide in literature occurs over the entry point of software studies. From the perspective of the user or the *front-end* of the software, software acts as a productive tool that encodes a user’s work into digital form. Works from this point of entry use ethnographic methods to explore the user interface and experience (Cramer & Fuller, 2008; Fuller, 2003; Grusin, 2000; S. Johnson, 1997; Jørgensen & Udsen, 2005; Turkle, 1997). The second point of entry focuses on the software code that acts behind the scenes in the *back-end* of the computer. Code studies ask how software encodes user input. Different studies describe code as: material (Hayles, 2004; Manovich, 2002), discourse (Kittler, 1995), ideology (Chun, 2005), and law or legislation (Grimelmann, 2005; Lessig, 2006). Since software studies are a new field of study, differentiating traditions can be challenging. The thesis will touch upon aspects of many of the themes introduced. In particular, I draw upon the ethnographic methods of studying software interfaces, while focusing on the political ramifications of code’s discursive and material aspects. At the end of Chapter 2, I will explicitly develop my methodological approach after I have described my theoretical perspective. In Chapter 3, I explicitly address the tension between the front end and the back end of software. Finally, software studies have given us some insights into the existence of digital environments. In the following section, I

⁹ See: http://www.nytimes.com/2008/05/26/technology/26firefox.html?_r=1&oref=slogin & http://en.wikipedia.org/wiki/Browser_wars

want to review some of the literature on digital environments to help us address the material conditions of web2.0.

The Digital and Modularity

Cubitt (1998) speaks to the materiality of the digital through an example of image manipulation. Through his example, we can see how code becomes a structure where users operate. Software circumscribes specific operations the user can perform on the image. A user's operations and input are guided "by the constraints of new packages, by the constraints of familiarity with procedures, and the ability of new packages to interconnect with older, more familiar ones" (Cubitt, 1998, p. 81). As a metaphor for the digital, the Photoshop interface exemplifies how digital systems are assemblage of discrete elements, in this case of old and new techniques of image manipulation. In the toolbar (a central point of interface), users access the old *burn and dodge* features that fetishize techniques of manual photographic printing and the new *heal* operation that depends on complex computer code to sample and repair imperfections in the image.¹⁰ The user performs different operations on the image through Photoshop's assemblage of different tools. The resulting product metaphorically speaks to digital life as a cocktail of discrete objects from the Burn and Dodge tool to the latest Photoshop filter.

In digital environments, we are always dealing with strange combinations and assemblages of code objects. In moving through digital environments, we are interacting with digital elements with their own agency and influence. Cubitt continues his description of the digital through a discussion of the computer mouse. The mouse is our

¹⁰ The interface resembles Latour's sense of history: one that is concurrently modern and non-modern (Latour, 1993 [1991], pp. 74-76).

“nomadic and schizophrenic prosthesis” (p. 88) that points “to the modular space of infinite text” (p. 90) and “governs insert point” (p. 91). Although Cubitt references a word processor, the metaphor easily extends to the entire existence of the digital. We shape our desktop by dragging, dropping, selecting, and deleting discrete elements with the touch of a mouse. The cursor becomes a way we articulate in a digital space, but also call us to question the reason for buttons to appear before the cursor. While a beautiful image of user agency, Cubitt reminds us the cursor represents “a shifting relationship between the intensification of office labour and the changing commodity-space, whose contents are dematerialized as information, financial flows and financial services” (p. 89). Thus, the configuration of Photoshop plug-ins is no more mundane than the modulations of capitalism that have been increasingly designed to operate within digital environments. The financial actions that raise and condemn people to poverty become technically equivalent to paintings horns on George W. Bush in Photoshop. Both enacted through the click of a button and could easily appear on the same desktop because they both exist as digital elements, easily related.

Cubitt’s sinister cursor approaches Manovich’s work on new media, albeit Cubitt makes much more political links. Manovich provides five principles of new media: numerical processing, modularity, automation, variability, and transcoding (27-49). From the five principles, we can relate his principle of modularity to Cubitt because they both refer to digital environments as collections or assemblages of smaller, distinct parts. Manovich states, “media elements, be they images, sounds, shapes, or behaviors, are represented as collections of discrete samples” (p. 30). Modularity refers to the form of new media. The term comes from a standard in software design from the 1970s that

assembled complex applications from smaller programs. In reference to the digital, modularity means that a digital environment combines modular components (Manovich, 2002). The Photoshop interface is a modular assemblage of different operations. In this way, any one digital existence is a modulation of the possible combinations of digital code. Deleuze defines modulation as a “cast that will constantly change from one moment to the other, or like a sieve whose mesh will transmute from point to point” (p. 4). Modulations, in this case, refer to the distinct formations within digital environments.

With all this talk of modularity, one could be forgiven for thinking the digital has no structure at all. In response, authors have focused on particular modulations of the digital in order to find more tangible objects of study. The world wide web is one such modulation and, through the work of Alexander Galloway, we can start to explore the particularities of the internet as digital formations built through code.

For Galloway, the internet is a series of technical, institutional, and cultural *layers* cooperating to produce the web. The layered model of the web, depicted in Appendix I, originates from the actual schematics of the internet. Each layer refers to parts of computer or the network that interconnect to form a digital communication system. In software and web studies, technical layers intertwine with cultural layers. A website becomes a complex assemblage of layered technologies, such as browsers, protocols, codes, and languages, working in relation to humans (Elmer, 2006b; Galloway, 2004; Langlois, 2005; Mackenzie, 2006a). As Elmer et al. (2007) state the internet is:

a medium of layers which control — and most importantly interconnect — relationships between users, their computers, screens, and the seemingly limitless number of services and content stored and facilitated by the network of remote servers and routers. The languages embedded within the Web page therein serve to highlight, govern, and control such inter-connections and functions

Galloway traces these layers back to transmission control protocol and internet protocol

(TCP/IP). A protocol is “a language that regulates flow, directs netspace, codes relationships, and connects life-forms” (Galloway, 2004, p. 74). Protocols as code languages allow computers to communicate in a decentralized network. Without TCP/IP, computers could not talk to each other.

Galloway runs with the concept of protocol to explore the general conditions of the internet. Galloway argues that the rules and limits of TCP/IP define the possibilities from control and resistance on the internet and the world wide web. In this sense, “protocol is synonymous with possibility” (Galloway, 2004, p. 244). The concept of protocol helps define the possibilities of the web. Often web studies get carried away the horizontal activities of following links so as to suggest the surfer has unfettered control over their experience (Elmer, 2006b). The approach places too much emphasis on the activity of the surfer without addressing the implications of code, architecture – the structures of the web. Protocol addresses the ambiguity of the digital by returning us to the rules of a particular modulation of the digital, the world wide web.

The web is an example of protocol. Web1.0 is often described as “a vast global hypertext... supported by the global networking files collectively called “the Internet” (which also support email, electronic files transfers, and other services” (Kirschenbaum, 2000, p. 132). As a protocological space, hypertext markup language (HTML) defined the possibilities of the web. By hypertext, I mean, “electronic text organized as a non-sequential system of links and destinations” (Kirschenbaum, 2000, p. 120). The hypertext system depended on the hypertext markup language that tagged text to “convey information about how the text should be render and displayed by the web browser” (Kirschenbaum, 2000, p. 132), as well as define the link that connect web pages. Using

Galloway's argument, HTML becomes the definitive language of the web.

The transition from web1.0 to web2.0 changed the language of the web. Web2.0 builds on the networked aspects of HTML, but diversifies the types of elements available. HTML is no longer the dominant language on the web. The medium now includes code languages typically only seen on the desktop. The dominant language on the web changed from a markup language to multiple code languages. Many web studies appear to have just added the languages to a list without really recognizing the difference. As a technical system once defined by HTML, the linguistic change requires us to rethink the material conditions, the protocol, of the web¹¹.

The dramatic increase of code, operating systems, programs, languages, and browsers in the application layer reduces the applicability of protocol to fully encapsulate the conditions and possibilities of web2.0. As a diagram of decentralized power, the concept continues to have great value, but as a map of the possibility, the value of protocol becomes eclipsed. The problems begin because Galloway remains unclear whether we can reduce all activity on the web down to TCP/IP or whether protocols co-exist. In other words, does his layered model reduce all action down to the working of one layer or do the relations and inner workings of each layer need to be studied as a technical assemblage of various technical and social actors? I raise the question because it gets to the heart of the problem with protocol: if protocol determines the limits of possibility, a claim Galloway repeatedly makes, and the number of protocols increased dramatically, then we need an answer to how different protocols interact. We no longer

¹¹ To be clear, the linguistic change does not determine the usage of the web, but changes the possibilities of the web. We can continue to draw upon the literature of the web, while trying to take stock of what this technical change means for society and politics.

need a theoretical approach that describes the web as a product of TCP/IP, but an approach that describes the web as an assemblage of TCP/IP, HTML, and a multitude of heterogeneous actors. Here the concept of protocol falls silent. Galloway never really deals with the topics of modularity and assemblies to address the relations between protocols. As a result, I am left looking for a way to theorize web2.0 that can explain the reasons, tactics, and politics being socio-technical configurations on the web.

In response, I suggest that protocols act like modular elements that can be assembled as part of different web2.0 platforms. They become components in a larger technical structure. As a result, I argue that web2.0 represents a return to modularity, in that the multiplication of code actors requires us to think of digital environments as heterogeneous assemblages of modular elements. However, we are not back to square-one. Web2.0 involves a concentration of protocols each with their own particular logics. Therefore, I am not returning to an entirely open digital environment, but a particular modulation of the digital with its own unique characteristics. Although web2.0 might be a highly dynamic space, in the following section I will define some of its properties.

Platforms

I suggest resurfacing a concept in software studies, the platform, as a way to re-think web2.0. In computing, a platform means “a hardware and/or software architecture that serves as a foundation or base”¹². The technical innovations of web2.0 bring the web into the league of Microsoft Windows and Apple OS X. Web2.0 depends on long-standing web protocols that converged to create a stable platform capable of running

¹² <http://www.answers.com/platform&r=67>

complex software similar to a desktop operating system. The web2.0 platform exists among a network of different computers. A programmer can now write one application that anyone on the web can use. In the history of computing, web2.0 actualizes the universal platform, a constructive space independent of hardware, imaged by the Java project. Sun Microsystems tried to achieve a universal platform for Java by creating a virtual machine that would run on any computer platform. Java's question was "how to make software amidst ensembles of machines" (Mackenzie, 2006c, p. 447). The Java project was meant as a platform. Where Java failed to network enough of its actor to stabilize the platform, web2.0 has created a platform by drawing in a variety of standards and actors into its network. Web2.0 involves HTML, XML, JavaScript, AJAX, PHP, databases, browsers, developers, and users that behave as a platform capable of being the grounds for a new class of websites (Vossen & Hagemann, 2007, pp. 38-48). In this thesis, a platform is a convergence of different systems, protocols, and networks that people connect in different and particular ways.¹³ A platform becomes a concentration of possibility. Web2.0 is a platform because it is a concentration of protocological spaces.

While web2.0 is a platform, we can also situate the technology among many other platforms. In my thesis, the platform is a nebulous concept that typifies structures of

¹³ Platforms are similar to protocols. They both function like *distributed network*. As Galloway says, "distributed networks have no chain of command, only autonomous agents who operated according to certain pre-agreed "scientific" rules of the system" (Galloway, 2004, p. 38). Protocols and platforms ensure the compatibility of different systems. Platforms are the commons grounds. Protocols are the common languages. However, platforms are not protocols. Protocol facilitates communication. Platforms facilitate construction. They both co-exist and interact in a layered computer system. In the case of computers, if protocols are links than what does protocol connect? Galloway (2004) refers to the computers as the nodes of a network created by TCP/IP protocol. Protocol connects computers. Yet, these computers are distinct. Computers are platforms. In order to communication, each computer, each platform needs to implement the TCP/IP protocol according to its own specifications. To exist, protocols need platforms. As Mackenzie states, "new media forms such as the world wide web or email depend on hardware and software platforms" (Mackenzie, 2006b, p. 449).

code. Web2.0 is one very distinct platform among many, including hardware platforms (Intel or PowerPC), virtual platforms (web2.0 or Java), and web2.0 software platforms (Facebook, Drupal, or the Pirate Bay). This concept will run throughout my thesis as a theoretical perspective and, through my cases, I will link the concept back to forms of resistances to the digital enclosure. Web2.0 is a highly productive platform, almost a meta-platform, that allows programmers and other highly technical users to articulate their own version – their own web2.0 platform atop the web2.0 meta-platform. In other words, the modularity of web2.0 creates the possibility for specific structurations. Each web2.0 platform articulates elements of the web2.0 platform into distinct modulations. By classifying platforms, we compare their different political economic characteristics. As a word, platform bridges the technical and the political because both discourses use the word similarly. Through platforms, I move between code and politics.

Now that we have a rough idea of a platform, we can now describe its functions. Lash (2002) makes a direct link between the platform and Latour's laboratory (Latour, 1993 [1991], pp. 20-22). The lab exists as a distributed generic space shared by all scientists. This space is not shared physical space, but a shared set of institutions, practices, and myths that reproduce similar conditions across multiple sites. Hypothetically, any scientific experiment can be replicated in any laboratory. For example, we can imagine a typical laboratory with a lone scientist at work. She stands before a periodic table of elements about to conduct an experiment. The periodic elements, standard across all labs, become her building blocks. By standing in this lab, the scientist enters into a constructive platform – a convergence of possibilities. Now picture, web2.0 as a similar laboratory. We now have a lone computer programmer in

front of her computer. On her cubicle is a list of various possibilities found in a web language, perhaps a list of HTML codes or PHP functions. Through her computer, she puts the code elements together to build a web2.0 application. In each case, the platform becomes a space of construction full of possibilities.

From my example of the scientist and the programmer, we can identify two aspects of a platform. **First, a platform is productive.** The periodic table or web software endows us with certain abilities. Software can be a platform depending on how its secondary agency endows the user with a productive capacity. Platforms give us a *‘grounds’ to build upon* and their productive capacities modify our own agency. The word *‘grounds’* gets me to my next point that, **second, platforms are also spatial.** They may create space or facilitate the passage of our articulations into space. Lash suggests that platforms resemble Latour’s concept of networks (Lash, 2002). Technological networks “are composed of particular places, aligned by a series of branchings that cross other places and require other branchings in order to spread” (Latour, 1993 [1991], pp. 117-118). Microsoft Windows is a network of millions of computers. Machines running Windows do not communicate with each other directly; rather, they share the commons values and standards to produce a unified platform in computing. So platforms give us productive capacity and relate us to spaces.

The two characteristics of the platform also relate back to the different processes of the digital enclosure. The productivity of a platform relates to the commodification of the web because platforms encode user input in specific ways. One platform might try to sell its users’ input, where the other might keep it as a public good. The spatial characteristics of a platform relate back to the processes of spatialization. As I introduced

in the initial review, different spatializations have different vertical and horizontal formations. One could characterize platforms as different spatial forms. A platform might give you access to a space conditional on you watching advertising or assuming a different subject position. Different platforms have different modulations of spatialization and commodification. In essence, platforms are structures. By studying platform as a category, we can explore the different possible articulations of web2.0.

Articulation Theory

In moving from protocols that outcomes based on singular rules to platforms that theorize the assemblage of discrete elements, we need a new set of theoretical tools to address the act of construction. Following others in software studies (see Langlois, 2005; Slack & Wise, 2005; Johnson-Eilola, 2005). I borrow the concept of articulation from cultural studies to theorize the constructivism of the platform. However, where most studies return to Stuart Hall's work on articulation, I use Laclau & Mouffe's post-Marxist version of articulation because of their work's political nature. No theory provides a better understanding of modularity. Their work on articulation reconciles political interest in power with the modularity of web2.0. Laclau & Mouffe also represent one of the few approaches to political heterogeneity and modularity that traces the concepts from its philosophical lineage to everyday practices to contemporary politics. They provide "a theoretical analytic in the Foucauldian sense of a context-dependent, historical, and objective framework for analyzing discursive formations" (Torfing, 1999, p. 12) (Torfing, p. 12) that goes from the root to the fruit. Their work guides my entire approach.

Articulation theory hits its stride when describing the assemblage of discrete

elements and the conditions of assemblage. The theory evolved as a way to re-think the unlikely alliance of the Thatcher and the working class, and to theorize new possibilities for social struggles beyond only class cleavages toward including identity politics (Wenman, 2003, 584-585). Laclau & Mouffe recognize that “there is therefore nothing inevitable or natural in the different struggles against power” and as a result they develop a theory “to explain in each case the reasons for their emergence and the different modulations they adopt” (Laclau & Mouffe, p. 152). Their resulting theory becomes an ideal means to address the politics of modular configurations.

Laclau & Mouffe do have limits. Articulation theory in post-Marxism never really deals with the internet. Critics of post-Marxism claim it focuses too much on the production of meaning and fails to account for material conditions, in my case, the immaterial conditions of code (Angus, 2000; Dyer-Witheford, 2007; Geras, 1987; Wark, 2006). Dyer-Witheford points out that post-Marxism has been strangely silent about new technologies (Dyer-Witheford, 2007, p. 195). I share his concern and, as a result, I look elsewhere for applications of articulation theory and technology. Following Langlois (2005) and Slack & Wise (2005), I look to Bruno Latour’s work on articulation theory developed in the broader concept of actor-network theory (ANT). In Chapter 2, I flush out a combined articulation theory that incorporates materials and subjects in a way that compatible with the digital. I will use Laclau, Latour, and Mouffe to describe the double articulation¹⁴ of politics and code.

I mix the best parts of Laclau, Latour, and Mouffe to theorize the double articulation. The approach lacks a method of conceptualizing communication systems,

¹⁴ Thanks to Ganaele Langlois for helping me express this concept.

like the internet, and the ways a communication system silences or vocalizes different groups in society (Dyer-Witheford, 2007, pp. 194-197). In one hand, post-Marxism struggles to address the code-side of articulation. In the other hand, actor-network theory ignores the political and neutralizes social critique (Haraway, 1997; Mallavarapu & Prasad, 2006; Sturman, 2006). By linking ANT to post-Marxism, I prop the two theories up – using the strength of post-Marxism’s theorization of politics to strengthen ANT’s apolitical tendencies and using ANT to resolve post-Marxism’s problems in accounting for code in structure. In the end, Laclau, Latour, and Mouffe capture the double articulation of code and politics.

Based on our understanding of articulatory practices, we can think of web2.0 sites, such as Facebook, Drupal, and the Pirate Bay, as particular articulations using the web2.0 platform. As I will explore in Chapter 2, we can think of each case as a distinct modular formation related with its own code politics. Aspects of the commons or capitalism manifest in the structures of different web2.0 sites. My two cases detail different articulations of code from the commons-perspective. The two cases involve a double articulation of politics and code. In other words, my thesis explores the politics implications of code-based structurations. In the following section, I will conclude by briefly reviewing the literature on code-based struggles, and then finally introduce my cases to my review so far.

Tactical Media

The literature on code politics has developed a few taxonomies of social actors who use code politically. They include Jordan & Taylor (2004) who discuss the different types of computer hackers and hacktivism, Dyer-Witheford (2002) and his seven-headed

hydra-like resistances to e-capital, Arquilla & Ronfeldt (1996) who introduce the idea of net-war, and Wrey's (1998) mapping of 'extraparliamentarian direct action net politics'. Since I do not have the time to fully address each of the literature, I want to point out a common trend. Despite some differences, the literature sees code as *tactical media* (Certeau, 1984; Critical Art Ensemble, 2001; Galloway, 2004; Garcia & Lovink, 2001; Lovink, 2002, 2008). By tactical media, I mean "those phenomena that are able to exploit flaws in protocological and proprietary command and control, not to destroy technology, but to sculpt protocol and make it better suited to people's real desires" (p. 176). Using media tactically means finding the opportunities and potentialities within media and exploiting them through creative and rebellious ways to resist power and control. Thinking tactically about the world wide web recognizes that digital environments are "permanently under construction" (Lovink, 2008, p. 186). The literatures unite in their shared sense that code presents new opportunities for resistance to market forces and, by extension, the digital enclosure.

For my thesis, tactical media is an act in the articulation of a political struggle. In their theory of struggle, Laclau & Mouffe argue that political formations always provide opportunities for resistance. I will explore the theoretical reasons for their belief in Chapter 2 and in Chapters 3 and 4, I will provide specific each examples. For now, let us assume that political formations can never completely unify political antagonism. For example, corporations depend on excluding or marginalizing commons-based production from the web and channeling productivity into their enclosures. Excluded elements never disappear and through articulations by social movements, they return to counter and weaken hegemonic formations. For example, piracy and peer-to-peer networks

demonstrate how excluded elements haunt hegemonic formations because they continue to reappear despite numerous take-downs and law suits. In this way, social struggle becomes tactical as social movements depend on exploiting weaknesses of hegemonic powers. Tactical media refers to a similar process because practitioners first identify elements of media advantageous to their cause and, second, sculpt selected elements to their own ends. Thus, using media tactically becomes a component of the articulation of social struggle.

From the literature above, we can distinguish two trends in the tactical usages of code as part of the social struggle: studies of tactical code and studies of social movements using code. In regards to the former, the two cases detail how code behaves to resist digital enclosures and provides alternative practices to the public. Wrey (1998) gives the example of the Electronic Disturbance Theater who developed a tool to stage virtual sit-ins. The description of the software focused on how the tool worked to enable a protest-style direct action on the web. In regards to the later, the literature focuses on how social movements deploy code as part of their social movements. The Zapatista movement in Mexico provides the best example. Through email and the web, the indigenous movement from Chiapas captured international attention. Holding the spotlight became a means the Zapatistas prevented a violent response from the Mexican government because the regime did not want to damage its international reputation (Dyer-Witheford, p. 150-153). The literature on the Zapatistas focuses not explicitly on the code, but how the movement acted through code and software.

The web2.0 platform is a fertile ground for tactical media practitioners because of the variety of openings found in by its modularity. Although there has been a lot of work

on commercial web2.0 platforms (Albrechtslund, 2008; Boyd, 2006; Boyd & Ellison, 2007; Côté & Pybus, 2007; Jarrett, 2008; Petersen, 2008; Rosen, 2007; Scholz, 2008; Zimmer, 2008), few works study tactical usages of web2.0. The most notable exceptions are studies of Wikipedia (Langlois, 2007; Langlois & Elmer, 2007), online file-sharing sites (Andersson, 2007), and a few studies on Drupal's use in the Howard Dean presidential bid (Hynes, 2005; Lebkowsky, 2005). My thesis addresses this gap in the literature by providing two cases of tactical structurations of web2.0 by commonists. I selected my cases using the two approaches to code outlined above. The cases weave together all the topics concerned in this chapter, including spatialization, commodification, articulation, platforms, and tactical media.

I need both cases to fully capture the processes of alternative structurations of code. Drupal gives me a way to address the particular challenges in developing an empty platform available for people that want to create their own version of web2.0. I use Drupal to explore the alternative ways of participating on the web. I could have chosen an easier example, such as the bit torrent protocol or Wikipedia, but these examples would not have captured the complexities of developing a progressive and decentralized platform. The Drupal case only goes so far. The case's emphasis on code does not address how political movements deploy code. To address the chapter's shortcomings, I use the next chapter to explore how code platforms become political platforms for commonists. I selected the case of the Pirate Bay, one of the most vocal and significant opponents to the digital enclosure today. Although one could easily study their code alone, I explore their double articulation of code and politics. Their example gives me an opportunity to see how they use code tactically to resist the digital enclosure. In sum, my

first case looks at the politics of code and my second case looks at politics through code.

Conclusion

The chapter explored some of the processes related to web2.0: commodification, spatialization, and structuration. In other words, web2.0 is taking shape and the chapter explored its different shapes. Of the three processes, structuration needs the most attention, primarily structuration involving code. Digital environments have materials characteristics that constitute social structures with their own politics. The *platform* theorized the conditions of web2.0: its code and politics. I introduced articulation theory as a means to address platforms and modularity. Finally, *tactical media* situated my general concern over code and politics within an existing literature on the politic uses of code. Two themes in tactical media justify my two cases: studies of politics *in* code and politics *through* code. The two cases become the means to dive deeper into the realities of web2.0.

With a general introduction in hand, I now can outline the larger movements of my thesis. It has three chapters that each addresses different aspects of code politics of web2.0. In Chapter 2, I develop a version of articulation theory that updates the key works in the field to understand web2.0, the agency of code, and the role of platforms. My next two chapters apply my theoretical approach to two aspects of the code politics of web2.0. My chapter on Drupal focuses explicitly on the relationship between software, modularity, and the interface that structures a user's interaction with a platform. The limitation of the Drupal chapter is that I do not address how a political movement articulates their own version of web2.0. My next logical step is the Pirate Bay: a group

that deploys code as part of their political struggle. Through a discussion of their tactical use of bittorrent and their efforts in running a bittorrent tracker, I describe how code enacts their politics and gives them a platform to articulate their broader political message. In short, I show how code becomes their ally in a political movement.

In the end, I hope to answer why the two cases are significant, why they our demand attention, and why people from across the world think they are significant enough to donate money and protest in their support. I have stated that thousands of people believe in the two sites; I now want to make clear why scholars in critical communication studies need to take note of how Drupal and TPB exploited the possibilities of web2.0 to create commons-based structures of the web. In the end, the two cases speak to the possibilities of creating new platforms using the web2.0 and make a valued contribution to a literature dominated by corporate for-profit examples of web2.0.

Chapter 2 – Theoretical Perspective & Methodology

My thesis contributes to the literature by theorizing alternative structurations of web2.0. I argue that code has material effects that I likened to political economic structuration. In the following chapter, I develop my theoretical approach to structuration – an act I defined in Chapter 1 as articulation. My argument depends on being able to theoretically address the relation between code and human agency in a way comparable to other structures, such as law or myth. I need to demonstrate that code has material effects that influence our capacities when acting in/through digital environments. In short, I need to explain the double articulation of code and politics. The question that sounds so simple actually presents a great theoretical challenge to traditional articulation theory. To this end, I outline my epistemology that updates articulation theory to theorize code and methods devoted to conceptualizing agency and changes in a digital environment. This epistemology focuses on understanding the social as a relational network or discourse of meanings and structures modified by practices of articulation. I propose a sense of the double articulation of the web – an articulation that occurs in code and in politics.

The concept of articulation began as a way for cultural studies to understand agency in the construction, maintenance, and erosion of structures (Hall, 2005 [1990]; Philips & Jorgensen, 2002; Slack, 1996; Slack & Wise, 2005). As suggested in Chapter 1, I am revisiting the work of key figures in articulation theory: Ernesto Laclau, Chantal Mouffe, and Bruno Latour. Much of the chapter finds the linkages between their works,

between post-Marxism (Laclau and Mouffe) and actor-network theory (Latour)¹⁵. Laclau (1996; 2005), Mouffe (2005b), and Latour (1993 [1991]; 1996; 1999) each contribute to this concept and their respective work on the concept of articulation describes how structures occur through code and politics found in our practices, myths, and institutions. Laclau and Mouffe focus on articulation as a means to describe political action and social movements. Latour uses articulation to explain the interaction between humans and things. By combining their respective works on articulation, I am able to study the double articulation of code and that structures different modulations of web2.0.

Articulation theory is an exciting concept to use. While this chapter will involve technical language, I do not want to lose sight of why articulation is an important concept for us and for web2.0. The web is in motion being formed. It is being built, assembled, and cemented everyday by people articulating its elements together. Articulation theory gives us a way to understand the fascinating political and technical decisions behind our everyday assumptions and practices. The concept expresses the very act of creation and becomes a resource of creativity among structures. By thinking of everything in pieces – by cutting through our Gordian knot of monoliths – we reveal the fragile complexities that breathe life into the structures we thought to be lifeless. Using articulation theory to explore code further demonstrates its capacity to enliven our understanding of structure. Where web2.0 seems so technical, articulation theory gives us the means to move past the

¹⁵ My argument is a perilous journey. First, I am working with two theories that are not completely compatible. The ends of Laclau's and Mouffe's post-Marxism and actor-network theory do not join nicely. ANT concerns itself more with structure where post-Marxism focuses about meaning. I try to be strategic when tracing their linkages. Specifically, I focus on incorporating aspects of Latour's concept of the *actor-network* into Laclau & Mouffe's articulation theory. The second tension is that both theories use vague language. I rely on some secondary sources to fill in some details. Finally, I do not have the space to address the specific contexts that both these traditions evolved. Laclau & Mouffe come from a Marxist tradition, where Latour comes from the social studies of science and technology. Both theories answer very different questions and distinct schools have criticized their answers.

dry technicalities to understand the politics of the structure and meaning of the many assemblages of human and computers.

Bridging Epistemologies

I want to begin by briefly describing some of the basic assumptions of articulation theory – that there is a tremendous amount of power in the how people, ideas, and things become connected by bodies of knowledge and material structures. Social elements only acquire meaning in relational formations – in structures – known as discourse (Laclau & Mouffe, 1993 [1985], p. 106; Philips & Jorgensen, 2002, p. 35-36). Most discourse theory describes how knowledge becomes power because it mediates our access to reality. We can only understand the world through the web of related meanings in our head. The study of discourse involves the study of assemblages of knowledge and materials. A discursive formation is “an ensemble of differential positions... a configuration” (Laclau & Mouffe, 1993 [1985], p. 106).

Laclau & Mouffe’s definition of discourse resembles the contemporary concept of a network prevalent in ANT. Latour’s defines discourse as:

Discourse is not a world unto itself but a population of [actors]¹⁶ that mix with things as well as with societies, uphold the former and the latter alike, and hold on to them both. Interest in texts does not distance us from reality, for things too have to be elevated to the dignity of narrative. As for texts, why deny them the grandeur of forming the social bond that holds us together (Latour, 1993 [1991], p. 90).

Latour’s definition of a discourse emphasizes the interrelations between social elements.

Discursive assemblages structure the relations between objects and subjects to assign meaning and agency. Philips & Jorgensen (2002) describe discourses as fishing nets

¹⁶ In the original quote, Latour used the word actant. He prefers this term to actor; however, they mean the same thing. (See Latour, 1999)

because nets are made of relations between knots (p. 26). Society is a discourse because the institutions, practices, subjects, and objects interrelate in such a way to give everything involved a specific meaning, structure, and agency.

Post-Marxism and ANT share a common semiotic approach to discourse. Semiotics is “the study of the social production of meaning from sign systems” (O’Sullivan, Hartley, Saunders, Montgomery, & Fiske, 1994, p. 281). Semiotics began as an approach to study linguistics, but now refers to the general study of signs. Linguistics uses Saussure’s concept of *difference* to describe the sign. The concept denotes how different combinations of uttered sounds distinguish different signs. Each word comprises a set of utterances. For Saussure, language is a totality of differences. Signs acquire their meanings only *negatively*, by being different from other signs in a closed system (O’Sullivan et al., 1994, pp. 89-91).

This approach may seem dated in regards to modularity of web2.0. As I introduced in Chapter 1, web2.0 involves a concentrations of possibilities and, by extension, digital elements possess a multiplicity of configurations that seemingly challenge a rigid sense of the relation between a sign and its significance. For example, the hyperlink very much derives its meaning in part from its context. A link to another page could mock or support that other’s content or in a web2.0 environment the link could become attached to some code that it launches. In short, traditional semiotics does not address the modulations of web2.0.

Laclau & Mouffe also move away from strict linguistics to develop an original nomenclature toward a mixed semiotics. First, they reject the essential relationship between the sign and its meaning. They move away from a preoccupation between sign

and signified and toward a study of the relations between elements that produce meanings and structures. As a result, meaning and context is contingent, rather than essential. Fragile contextual significance replaces rigid linguistic totalities (Laclau & Mouffe, 1993 [1985], p. 112-113). Second, they affirm that any material reveals a constellation of linguistics and non-linguistic differentiated positions. Their version of semiotics not only deals with linguistic signs, but materials assembled in signifying relationships. When discussing materialism, they state, “the linguistic and non-linguistic elements are not merely juxtaposed, but constitute a differential and structured system of positions – that is, a discourse. The differentiated positions include, therefore, a dispersion of very diverse material elements” (1993 [1985], p. 108). In short, linguistics and extra-linguistics elements create discourses. Their version of semiotics moves away from linguistics to describe a heterogeneous environment.

Laclau & Mouffe’s compliments actor-network theory’s interpretation of semiotics. Akrich & Latour describes semiotics as “the study of how meaning is built, but the word “meaning” is taken in its original nontextual and nonlinguistic interpretation...semiotics is the study of order building or path building and may be applied to settings, machines, bodies, and programming languages as well as texts” (Akrich & Latour, 1992, p. 259). ANT emphasizes the importance of context in forming identity, but instead focuses on positive relationships between elements. As Law states, “entities achieve their form as a consequence of the relations in which they are located” (Law, 1999, p. 4). ANT uses semiotics to trace networks between elements. By focusing on elements in context, semiotics provides a means to account for the polysemic identity that fluctuates between discourses.

ANT and post-Marxism share a semiotic epistemology concerned with the outside when describing identity. This approach has important implications for the structuration of the web2.0. In the next section, I want to introduce the concept of overdetermination – the logic and mechanism that accounts for fluid contexts. Although Laclau & Mouffe use overdetermination to talk about the social in general, I am using the concept to discuss the concentrations of possibilities of web2.0. The concept captures the uncertainty and unpredictability of the digital environment.

Overdetermination: Theorizing Possibility

Overdetermination, as a concept, begins with Freud, but Althusser popularized the term to describe the overflow of meaning in society.¹⁷ Subjects and objects do not contain their social significance; rather they are drowning in a sea of significance outside them (Laclau & Mouffe, 1993 [1985], pp.97-99). Depending on the context, different elements have a different significance and a different function. As a concept, overdetermination explains the multiple meanings and configurations of web2.0 elements.

Poster argues the web is overdetermined so much so that we introduced a new concept of *underdetermination* to describe the fluidity of virtual elements. He contends,

that certain social objects that I call virtual (hypertexts, for example) are overdetermined in such a way that their level of complexity of indeterminateness goes one step further. Not only are these objects formed by distinct practices, discourses, and institutional frames... but they also open to practice; they do not direct agents into clear paths; they solicit instead social construction and cultural creation (Poster, 2001, p. 17)

Poster argues that the meanings of a hyperlink, for example, are not contained within the

¹⁷ While Althusser brings the concept to the table, in later works he abandons the term in favor of more economic determinism (Laclau & Mouffe, 1995 [1985], pp. 97-98).

hyperlink, but its context on the web. Technical developments have overdetermined the possible meanings of the hyperlink. Beyond linking pages together, hyperlinks now become points of interactivity. A link can launch scripts that reformat web pages, communicate with servers, and resituate the page in various information networks. In the end, the meaning of a link depends on its context within a larger technical object.

Based on our understanding of web2.0, overdetermination means that “society and social agents lack any essence, and their regularities merely consist of the relative and precarious forms of fixation which merely accompany the establishment of a certain order” (p. 98). Since meaning depends on context, the significance of any element floats widely depending on its discursive location. The multiplicity of meanings and locations of an object overdetermines its possibilities. Discourses pull certain meanings together, while pushing out other meanings. Surplus meanings wait on the outsides of discourses. As Laclau & Mouffe state, “every ‘society’ constitutes its own forms of rationality and intelligibility by dividing itself; that is, by expelling outside itself any surplus of meaning subverting it” (Laclau & Mouffe, 1993 [1985], pp. 136-137). Laclau & Mouffe locate all excess meanings in the *field of discursivity*.

The term signifies the infinite reservoir of excess meanings. It “emphasizes the contingency and the fundamental openness of all social phenomena” (Philips & Jorgensen, 2002, p. 56; Laclau & Mouffe, 1993 [1985], pp. 111-112). The concept implies that power is incomplete and fragile because it cannot gather the entirety of meanings in the field. Excluded elements haunt discourses from the outside as they can be used tactically to erode discursive formations. There is no way an order can overcome the antagonism between an element’s competing meanings to provide a complete social

totality (Laclau & Mouffe, 1993 [1985], pp. 122-127; Latour, 1993 [1991], pp. 70-71; Wenman, 2003, pp. 584-591).

The field of discursivity helps to model the lack of scarcity in web2.0. Using a modular element does not remove the other possible usages of that element.¹⁸ One program using the Java language does not preclude other programs from using Java. Modular elements, like a links or code languages, might lose their excessive meanings within a certain configuration, but surplus meanings wait on the outsides as excluded potentials. This is particularly true because computers have no troubles in defining multiple instances of the same event. The nature of digital code means that two users can act on the same webpage, do different things, and create different meanings without limiting the possibilities of the other user. As Shields (2000) states:

web pages are not browsed as static texts, but in motion... [T]he web must be understood as dynamic. It is not a timeless, ambient space in which "action takes place" but rather a vectoral space that does not exist from the action of calls out to remote servers and files and linkages from one page to another" (p. 146).

Shields quote only emphasizes my point. The web is not a singular book, but a *vectoral space* that co-exists in the multiple presents of a site's concurrent visitors. The field of discursivity captures the surplus of meanings and structures produced in web2.0.

Discourse selects particular meanings from signs that have multiple meanings (Philips & Jorgensen, 2002, p. 27). Articulation creates discourse through the simultaneous of including certain meanings and excluding others. As discourse can never incorporate all potential meanings, they can never be complete. Overdetermination means no discursive formation is a total power. Their theory is a boon to tactical thought as

¹⁸ Although one could argue that proprietary software limits modularity by removing code from public circulation.

“there is no social identity fully protected from a discursive exterior that deforms it and prevents it becoming fully sutured” (Laclau & Mouffe, 1993 [1985], p. 111). The implication is that power can never be complete or omnipotent.

Laclau & Mouffe have been frequently criticized for their depiction of the social as being fundamentally open. The same criticism can apply to web2.0. Angus (2000) criticizes Laclau & Mouffe for failing to recognize the *taken-for-granted* background of a discourse or hegemony that defines the conditions of articulation. He has a point and we should think of the field of discursivity as a lens to think about the uncertainties of power, not as a general rule of the social. This concept gives us a way to call attention to everything we ignore. Articulation theory presents a way to engage with hegemony without being overwhelmed by it. The field of discursivity provides a reservoir of creative thinking and helps to pick apart elements of hegemony and distinguish the floating and potential elements from the rigid nodal elements (p. 172-179).

In conclusion, overdetermination and the field of discursivity becomes another way to talk about the modularity of web2.0. The open conditions require modular elements be configured to take on meaning. Configurations are multiple and overlapping. Overdetermination helps account for the open conditions of web2.0 by recognizing the multiple planes of identity and alliance, and opens the imagination to the diverse locations of the struggle against digital enclosures. The field of discursivity helps to captures the excess of possibilities on web2.0. Neither concepts rejects structure, they only reject the absolute power of structure to wall off a sea of possibilities even if they seem too remote to matter. The next question is how to explore agency with this concept. To answer, my question I define the act of articulation.

Practices of Articulation

Having established a ground work, I want to move on to describe a theory of the production of structure using Laclau & Mouffe's version of articulation theory developed in their book Hegemony & Socialist Strategy. The choice of Laclau & Mouffe might seem odd choice given the variety of perspectives in articulation theory. Laclau & Mouffe influenced a number of thinkers, such as Stuart Hall, Lawrence Grossberg, McGregor Wise, and Daryl Slack. The fact remains that the work outlined a comprehensive analytical framework for articulation. I would be hard pressed to find another definition of articulation approaching the sophistication of Laclau & Mouffe.

Hegemony & Socialist Strategy's major contribution to articulation theory lies in its attempts to pluralize political actors. The work responded to a crisis in the Left in 1980s brought about by the demise of the Soviet Bloc, the success of the right wing to align with the working class, and the growth in particular social movements, such as gay rights, feminism, and minority rights. Many tradition left-wing political concepts did not address the political turmoil at the time (Wenman, 2003, pp. 584-585). Stepping up to the challenge, Laclau & Mouffe argued that political studies needed to recognize the diversity of political movements against power structures and understand how seemingly incompatible social cleavages come together into a unified movement. Articulation successfully describes how the working class and the right could unite or how women could be seen as an important political actor in their own right. Hegemony & Socialist Strategy's concern over relationship predates many contemporary political concerns about balkinization, fragmentation, and diversity. As a consequence, social movements and alternative politics now occupy a place in many discussions about political struggle.

Laclau & Mouffe's theory of articulation contributes to political studies by expressing a means for the formation and unraveling of discursive formations. In other words, the concept describes the creation and destruction of social structures. As Angus states,

The concept of articulation is concerned with the politics of common sense in which discursive interventions modify the field of power. Thus, legitimations of the social order succeed, not so much by repressing already formulated alternatives, but by preventing their formulation or, later, by recuperating formulated alternatives within the domination articulation and thereby, of course, changing their meaning (2000, p. 170).

Articulation theory explores how and why social actors can modify discourse and how social orders prevent the possibility of articulation. The study of discourse questions the reasons and implications behind an articulation. If the practice of articulation seems broad in scope, it is because Laclau & Mouffe argue all social practices include an act of articulation (Laclau & Mouffe, p. 113). Every day, we engage in articulatory practices and, as I will argue, using the web is an act of articulation. Articulation is a productive act similar to the Marxist concept of labour¹⁹. The social and the political exist as the product of articulations.

Laclau & Mouffe's articulation theory has a precise terminology that unfortunately they introduce all at once. They define articulation as:

any practice establishing a relation among elements such that their identity is modified as a result of the articulatory practice. The structured totality resulting from the articulatory practice, we will call discourse. The differential positions, insofar as they appear articulated, we will call moments. By contrast, we will call element any difference that is not discursively articulated (p. 105).

In the following section, I expand on the terms: elements, moments, and nodal points.

While I have been using the terms *things* or *signs* to describe the units of discourse, Laclau & Mouffe use the term *elements*. Elements are polysemic. As

¹⁹ Thanks to Rosemary Coombe for this insight.

discussed, overdetermination states that unarticulated elements have multiple competing meanings. Discourses, by incorporating elements, cast aside the element's surplus meanings. Laclau & Mouffe use the term *moments* to describe elements that have had one of their meanings privileged in a discourse. Elements never completely become moments because the excess meanings are never lost. Moments, as the name suggests, only fix one aspect of a fluid element. Signs are at once elements and moments. Further, privileged moments become *nodal points*. Articulation organizes discourses around nodal points; they are at the centre of the formation and the privileged signifiers that modify other included or excluded elements (pp. 105-113).

Discursive orderings are never neutral. The point here is that discourses give elements particular meanings that have political implications (Laclau & Mouffe, 1993 [1985], p. 106). If elements are Lego blocks, discourses are particular ways of putting pieces together and we must ask why. There is always an act of power involved in articulation. To study discourse means to study social struggle over its articulation.

Articulation involves different stages and states. We can think of articulation as a process that moves from elements to moments to nodal points. Latour describes a similar movement as *stabilization*. Integrating an element into a discourse stabilizes its identity: the more integrated an element, the more stabilize their identity (Latour, 1993 [1991], p. 85-88). As elements become drawn in, the identity of an element begins to stabilize (Latour, 1996, pp. 44-46). This movement of stabilization occurs through articulation. Nodal points lie at the end of the process: the identities that have become unquestioned objective knowledge (Philips & Jorgensen, 2002, pp. 36-37). Meanings, excluded from nature and society, remain at the beginning. In this way, articulation becomes the process

by which possibilities turn into realities.

Angus (2000) makes a crucial contribution to the process of articulation. He suggests that articulation involves the process of thematization and combination. Returning to his prior critique of Laclau & Mouffe's failure to address *taken-for-granted* nature of a discourse, he suggests that thematization brings-forth elements from the background. As he states, "articulation practice not only forges linkages, but also focuses on, foregrounds, selected elements" (Angus, 2000, p. 185). So articulation occurs, first, by the thematization of elements and, second, by combining selected elements together into a discursive formation. In this articulation allows for identification of new and important areas of hegemony (Angus, 2000, p.174-176).

Thematization resembles tactical thinking. When the tactical practitioners face a seemingly insurmountable power, they choose their battles carefully. In other words, they pick certain elements or meanings in the field of discursivity to articulate into their movements. In this paper, tactical action refers to an act of thematization. In the case of TPB, the site's developers decided to use the bittorrent protocol from a variety of other file-sharing protocols. Their decisions need to be seen as important because "protocols do not exist in a vacuum; they are deployed by particular actors to both include and exclude, open or close new media possibilities" (Elmer, 2006b, p. 161). From this example, we see that the decision to include or exclude elements needs to be seen as an important part on an articulation.

At this point in my argument, I have run into the limits of the traditional reading of articulation theory. In my last quote, I mention the agency of protocols – of code – to define the possibilities of new media. Although Laclau & Mouffe explicitly state the

materiality of discourse (See Laclau & Mouffe, 1987), they do not properly describe the agency of things in the articulation of things, such as protocols. To demonstrate my point, let me return to Poster's quote about the *underdetermination* of the web. He suggested that links really have no meaning or agency without a context. Elmer (2006) criticizes Poster for overstating the web's transparency and fluidity (p 160-161). Poster reduces hyperlinks to mere signs. Poster's claim, by extension, would negate my entire argument because he seems to think that code has no bearing on human agency. How can we address the implications of code if we only grant agency to humans? In short, how can code or things articulate? Code structures, in this case, would crumble; however, code does have material effects. In another work, Elmer argues that:

that hyperlinks serve as deitic signs, meaning they not only point to — or signify — other documents and resources, they enable material effects, for example, taking us to other signs, or in the case of web browser cookies, storing a remote ID file on our own PC hard drives (2006a, p. 16).

Hyperlinks not only signify they also *enable material effects*. Rather than following Poster down a muddled web, in the following section I face up to some of the challenges of articulation theory. I answer how to think of elements as actors as well as signifiers. To do so I introduce Latour to Laclau and Mouffe.

Enfranchising Humans and Non-Humans Alike

I argue that Laclau & Mouffe do not give materialism sufficient attention in their articulation theory. Latour makes a similar point. He rejects semiotics because it brackets off “on one hand, the question of reference to the natural world and, on the other, the identity of speaking and thinking to subjects” (p. 63). Latour contends, that semiotics only give speaking rights to subjects and silences objects. To resolve Latour's concern, articulation theory needs to acknowledge the presence of objects. In order to do this, I

define how elements can act.

First, I want to clearly define the idea of a double articulation. While implicit in Laclau & Mouffe's work, it is never clearly stated that *both structure and meaning mutually constitute each other*. In other words, articulation occurs at both the level of significance and the level of structure. Placing the American flag on the moon not only signified American power, but also physically connected a national symbol with celestial body. The meaning and the material actions intertwine. In my case, I suggest that code and politics intertwine. For example, the decision to use a web2.0 platform influences the way in articulate our political platform on the web. The software platform influences the political platform. Double articulation reminds of us concurrent levels of structure and meaning.

To include the agency of the objects, I need to stop referring to them as raw signs. ANT's description of the social actor helps theorize the agency of objects. ANT decentralizes agency into a network. The actor, hence the hyphen, is a network (Law, 1999, p. 5). The definition of a network is surprisingly similar to prior definition of a discourse. The network²⁰ is not the dominant form of the actor, but emphasizes that the actor is made up of relations, like a net (Latour, 1999, pp. 15-16). For ANT, the networks is an exemplary form used to recognize "the character of links, the character of invariant connection, the character of possible relations, and so the character of possible entities" (Law, 1999, p. 7).

²⁰ The term network, when developed, did not have the same connotations as they do today (Latour, 1999, pp.; 15-16 Law, 1999, pp. 6-9). Indeed, Hardt & Negri (2004) describe the network as the dominant *isomorphism* of today; it is the shape seen in everything (p. 142). ANT is indeed caught in the great success of the term. By having so many everyday examples, the significance of the form is lost. Descriptions benefit by deploying the everyday networks, but suffer when that **description** standardizes explanations.

Here is where ANT makes a major contribution to articulation theory. In ANT's perspective, humans and non-humans have agency. I am suggesting using the *actor-network* to expand on Laclau & Mouffe's *elements* to provide a way of attributing agency to humans (politicians, activists, rebels, and citizens) and non-humans (code, modules, protocols, scripts, and robots). The actor-network is a term that can describe human, non-humans, and those in-between,²¹ but I avoid a return to essential thinking by defining actors as discursive formations. The element moves from being a raw sign to a constellation of meanings and materials that we refer to as a singular object (Latour, 1993 [1991], pp. 85-88). My logic here follows Angus who also claims that "elements must be conceived as pre-existing the discursive formations into which they are articulated, since articulation is not a creation but a practice of linking" (Angus, 2000, p. 181). In Laclau & Mouffe's theory, I endow elements with the power to articulate. Similar to articulation, an actor-network is "any element which bends space around itself, makes other elements dependent upon itself, translates their will into a language of its own" (Callon & Latour, 1981 quoted in Slack & Wise, 2005, p. 118). Both action and articulation describe social agency.

The term *actor-network* describes any element involved in the articulation of discourse. The term helps explain the materiality of discourse by showing how both humans and non-humans are competing to articulate elements and intertwine during an articulation. Non-humans structure and order humans, just as humans structure and order non-humans (Latour, 1993 [1991], pp. 136-145). In Chapter 3, I will elaborate on this

²¹ Following, the openness of discursive formation and hybridity, theory needs to be aware of the continuum of possible *beings*. Cyborgs are an example of an actor of a quasi-human or quasi-non-human. (See Harroway, 2005 [1991])

example to address the nuances of the interaction between code and the user through the example of Drupal. The chapter works through the points of interaction and the political aspects latent in different actors. For now, I only want to use a much simpler example.

Latour gives the example of a man getting a gun as an example of a double articulation. Depending on the man's disposition and the gun's capacity, the articulation takes a significantly different meaning. The man's initial intent can be called a *preposition*. By picking up the gun, the man proposes a possible assemblage of man-with-gun. His motivations would be translated into a new actor-network. However, the gun affects this *translation*. If the gun is jammed, then despite the man's preposition, he creates a network of man-with-broken-gun. The gun does not work and thereby does not modify his agency in the way he had hoped. Latour refers to this final actor-network as an *articulation* (Latour, 1999, pp. 176-180). For our purposes, the articulation is the final discursive formation.

From this example, we now have a list of useful vocabulary to address a heterogeneous approach to articulation. A preposition refers to the initial intentions and ideas of an articulation, and translation refers to the meanings and ideas manifest when connected with other elements. The terms depend on Latour's argument that agency is distributed. This follows logically from describing an actor as a network because each element or part of the network modifies the network's agency. By articulating and introducing other elements, an actor-network modifies its own structure and thereby its own agency. Since elements have some agency in this process, they can modify the articulating actor-network. Articulation now occurs with multiple rather than single actors. In effect, we need to recognize the uncertainty of any one actor-network resulting

from having distinct elements involved in the same process.

In later works, Laclau flushes out two additional concepts only touched upon in Hegemony and Socialist Strategy: floating signifiers and empty signifiers. The two terms expand the range our taxonomy for the agency of elements.

Floating signifiers involve elements with multiple meanings that have been articulated into competing discourses. Depending on the strength of the discursive linkages, floating signifiers can or cannot be decoupled from their discursive formation. Social struggle often occurs through a fight over floating signifiers. For example, the Pirate Bay attempts to decouple piracy from a discourse that make it seem criminal and rearticulate the term into their anti-copyright movement (Laclau, 2005, pp. 129-138).

In the same work, Laclau also introduces the concept of an empty signifier. The term is the most complex and forms an integral part of his political work. Empty signifiers refer capable of being a nodal point in a chain or chains of equivalence. They do not contain the signified, but become the grounds for the unification of distinct actors under a common banner. In my cases, I will further define the empty signifier as the concept helps to conceptualize the projects of Drupal and the Pirate Bay. For now, the empty signifier becomes both the grounds for articulation, in that they provide empty signs to attach meanings, and an articulatory project that needs to be constructed. For example, national flags act as empty signifiers in that they signify something to a diversity of citizens, and has been constructed and designed to induce such signification (Laclau, 1996, pp. 36-46, 2005, pp. 69-77). The two terms compliment the nodal point as the degrees of agency for an element.

Elements vary in their agency. The agency of an element ranges from powerless

raw signs to stronger floating to powerful nodal points. This admission does not negate the fluidity of the social because overdetermination still means that excess meanings erode the stability of elements; however, the degree of overdetermination varies depending on the element. Angus's suggestion of thematization reminds us that articulation occurs at first through foregrounding relevant elements. Recognizing the agency of a selected element helps in deciding the tactics of an articulation. The differences in the quality of elements get us to the fundamental realization that we are not articulating with atoms or even Lego blocks, but complex, distinct, and independent actors. Articulation, in this light, is less a fluffy concept of the fluidity of the social truth and more a growing awareness of the heterogeneity of materials, relations, and practices in the digital.

I want to conclude by applying the concept of articulation to the web. Returning to the concept of the layered web developed in Chapter 1, we can begin to see the model helps conceptualize the articulatory process through the web. Latour argues "there is only transformation. Information as something that will be carried through space and time, without deformation, is a complete myth" (Lovink, 2002, p. 155) and, in a sense, the translation from the user's preposition to the final articulation involves various transformations through servers, protocols, code, and platforms. In short, the various layers each translate preposition. Articulation theory on the web needs to get a handle on the transformative power of technology. Langlois (2005) already begins such a project by integrating the layered model of the web into actor-network theory. As she states:

the bricolage is important here as the process whereby technocultural assemblages that form the World Wide Web act to represent data and in that sense establish the rule of discourse – "not only the expressive value and formal transformation of discourse, but its mode of existence" (Foucault, 1979, p. 137) (Langlois, 2005, p. 579)

The web is both a discursive formation that structures agency and the material conditions of existence in a digital age. In the next section, I want to continue my argument by defining the concept of hegemony and how to include nonhuman actors. My discussion of the double articulation has, thus far, focused on the element and not its context. To address this omission, I define the concept of hegemony.

Hegemony

I chose to ground my research in post-Marxism because Laclau & Mouffe's redefine discourse theory to better account for possibilities. They do so by separating discourse from ideology. Where ideological theory privileges total systems, Laclau & Mouffe emphasize that discourses are always incomplete. They call this new type of discursive power: *hegemony*. Unlike the totalizing logic of ideology, hegemonic power can never be complete because of the overdetermination of elements and the field of discursivity (Laclau & Mouffe, 1993 [1985], p. 93). Actors operate within a social where they have more agency and are not reduced to simple victims of ideology.

In Marxist thought, the concept of hegemony describes power as created by a historical bloc of essential classes. Laclau & Mouffe accept the basic premise of hegemonic power, but drive the idea to the fiery wreckage of essential classes. Hegemony means an unpredictable association of elements that embody social power. They contend that there are no essential classes or actors, such as the bourgeois or the proletariat. Instead, they state, "political practice constructs the interests it represents" (p. 120). Unlike immanent traditions, hegemony does not preclude certain actors from playing an important social roles, it embodies power by collecting elements and closing off their meanings in a particular ways (Laclau & Mouffe, 1993 [1985], p. 65-89). The

term becomes particularly relevant when exploring the heterogeneous social landscape of web2.0.

Laclau & Mouffe introduce hegemony as “a political *type of relation, a form*, if one so wishes, of politics; but not a determinable location with a topography of the social. In a given social formation, there can be a variety of hegemonic nodal points” (p. 139). Globalized capitalism is a hegemonic formation. As Laclau states,

We can no longer understand capitalism as a purely economic reality, but as a complex in which economic, political, military, technological, and other determinations – each endowed with its own logic and a certain autonomy – enter into the determination of the movement of the whole. In other terms, heterogeneity belongs to the essence of capitalism, the partial stabilization of which are hegemonic in nature (Laclau, 2005, p. 230)

The social becomes a hegemony that excludes meanings so that, included meanings become natural and common. Hegemony acts as “the background against which any historical figures emerge” (Angus, 2000, p. 171). For Laclau & Mouffe, the social, the political, and all power results from hegemonic formations. We, as people, exist within hegemony.

Articulation is integral to the explanation of hegemonic power. Everyday our articulations reproduce and re-enforce power. Whether conscious or un-conscious, people through their articulations reproduce the structures, meanings, and practices that stabilize the elements that constitute hegemonic power. Discourses constitute social power by relating or excluding elements together in particular ways. Power always exists in a discourse. As Philips & Jorgensen (2002) state, “power is not something you make disappear; we are dependent in living in a social order and that social order is always constituted by power” (Philips & Jorgensen, 2002, pp. 37). Discourse becomes a general description of the world that can be both positive and negative. Analysis moves to critiquing particular discourse while advocating other discourses (Laclau & Mouffe, 1993

[1985], pp. 108-110; Philips & Jorgensen, 2002, pp. 36-39). In this way, discourse theory meets Latour's need for a theory that can both explain and critique (Latour, 1993 [1991], pp. 43-46). Discourse is both constructive and deconstructive.

Both power and resistance act through hegemonic articulatory practices because the overdetermination of the social requires the construction of political actors through hegemonic formations. For an articulation to be hegemonic, it must first confront antagonisms and differences, and then suture differences together. Hegemonic formations involve logics of difference and equivalence. Hegemonic formations find the commonalities between polysemic elements and articulate them into a discursive formation. However, some elements are not compatible with each other. Racist movements typically cannot connect to minority rights movements. Hegemonic struggles only function in certain contexts with certain groups (Laclau & Mouffe, 1993 [1985], pp. 135-146). Within the limits of the elements involved, hegemonies collect and exclude technologies, practices, myths, and actors to produce power.

Latour's concept of the *collective* then helps to describe the relation of actor-networks to hegemonies. He defines the collective as "as an association of humans and non-humans defined by longer lists of elementary actions" (Latour, 2005, p. 86). For Latour, collectives grant actor-networks different articulatory capacities. Depending on the collective's articulation, its elements can act more or less (Latour, 2005, pp. 82-87). A talkative collective is one that "includes more articles, discrete units, or concerned parties, that it mixes them together with greater degrees of freedom, that it deploys longer lists of actions" (Latour, 2005, p. 86). Where Latour seems to focus on the positive role of collective, it is easy to extrapolate its negative effects. Certain collectives silence

certain actors. All collectives are different in the way they structure actors, in the properties they attribute to them, in the mobilization, they consider acceptable” (Latour, 1993 [1991], p. 107).

Hegemonic formations also vary in their stability because they are the constant product of articulations. Articulations constitute a hegemony by producing different moments, floating signifiers, and nodal points. The hegemonic formation becomes the patch-work of different articulations. As a result, hegemonic formations have different states of overall stability and local stability or instability. The integration of an element into a hegemonic formation might result in a temporary weakness or further cement the centrality of a nodal point. The instability of hegemony provides opportunities for tactical articulations by groups seeking to restructure the hegemony. In other words, the amorphous nature of hegemonic stability provides opportunities for social struggle.

I want to conclude this section by applying all the concepts I developed here to our understanding of a platform. I argue that platforms are discursive formations with their own properties. In my introductory chapter, I mentioned how platforms were both productive and spatial. In my approach here, I argue that platforms have a privileged relation to discursive formations. Lash (2002) argues that platforms admit actors to “participate in various forms of technological life” (p. 24). Lash’s phrase ‘forms of technological life’ captures both the social and technical aspects of platforms. They provide the means to exist online and create existences online. Platforms translate our human articulations into technical assemblages. As I mentioned earlier in my discussion of the layered model of the web, humans become encoded through platforms and humans encode their own values into platforms.

Returning to Elmer's concept of the vertical web (Elmer, 2006b), platforms involve hierarchies. Some actor-networks have greater access to platforms than others. For Lash (2002), access to platforms becomes a new demarcation of class (pp. 21-25). In the digital enclosure, companies maintain control over proprietary platforms that they circulate as public goods and, when successful, position the public underneath their control. Platforms of the digital enclosure translate users' articulations to support their own discursive or hegemonic power formations. Keeping with the symmetry of discourse, a platform's encoding practices could either reproduce or resist hegemonic power. As Dyer-Witheford states,

who commands which means of communication is a question in determining what articulations may or many not be made. And in advanced capitalism, the conditions of discourse, both its proliferation and blockages, are deeply set by corporate power (Dyer-Witheford, 2007, p. 196)

Chun (2005) describes Windows Media Players hidden communication with its developer Microsoft as an example of how software supports hegemonic power. In my own example from Chapter 1, I introduced the digital enclosure as a means of explaining how corporations re-deployed their power in a web2.0 environment. In going forward, I now develop two resistances to the digital enclosure and how they articulate their resistance in/through code

In my discussion of Drupal, I will develop the concept of the construction of an alternative and non-proprietary platform. The concepts build toward my chapter on the TPB that relates platforms to political movements. Before I am able to make this departure, I need to document my methods of study that operationalize my epistemology.

Method

With a working definition of articulation theory, I now develop a method of

studying articulations. I have a few options. Laclau & Mouffe works uses discourse analysis, where Latour describes ANT as a type of ethnography. Both methods have their relative advantages, but I need to evaluate them in relation to my object of study: web2.0. The web's fluidity challenges both approaches; however, I suggest that ethnography provides the best approach. The web is not a text and, as Shields points out, the web is in motion (2000, pp. 145-147). Ethnography provides the best means to study a system in motion. As Geertz says, "the ethnographer "inscribes" social discourse; he writes it down. In so doing he turns it from a passing event, which exists in its inscriptions and can be reconsulted" (1973, p. 19). Through ethnography, I am able to *write down* the web so that I can understand context and action within a synthetic articulation theory.

The fields of software studies and web studies provide me with some answers about how to conduct an ethnography of the web (Beaulieu, 2004). Rogers & Marres's divide the possible approaches into two camps: tracers and rubbers. A web researcher needs to whether '*to trace* or *to rub*' (Rogers & Marres, 1999)? Researchers can either try to trace the network created by dynamic activity of the surfer (Marres & Rogers, 2005) or play with the web's code in order to gain a rubbing of its hidden agency (Elmer, 2006a). In a later work, Rogers rearticulates the divide by talking about the front-end and the back-ends of the web. Tracing concerns itself with the front-end of the web, where rubbing focuses on the back-end of the web (2004, pp. 3-19). The two aspects of the web become important when designing a study of the web. Should I focus on the front-end or the back-end of the web? Upon reflection, I will have to study both.

As Langlois (2005) already develops the web should be studied as a series of layers. Methodologically, the layered model implies the co-presence of the front-end and

back-end. The interface of the user depends on back-end layers, but the interface also modifies the back-end layers. Returning to the platform, we can study technological forms of life as the user interacts with the front-end interface and the back-end code. The political exploration of web2.0 requires the simultaneous evaluation of how humans and code interact to produce and reproduce hegemonic systems. My contention challenges the typical divide between tracing and rubbing. How can I trace *and* rub?

Tracing and rubbing might not be as far apart as suggested by Rogers. He seems to presuppose a radical distinction of methodological approaches for the front-end and the back-end. Web studies, regardless of their emphasis on the back-end or front-end, depend on accessing public information.²² We are stuck in front of a screen and we lack a privileged point-of-entry in technological forms of life. This gets me to my main point. I cannot really separate myself from my field of study.

As both surfer and investigator, my research is profoundly subjective. I take efforts to function systematically, but when you strip everything away you find that I am still a body in front of a computer screen. In response, I argue the best approach for my study is a virtual ethnography (Hine, 1998, 2000; Turkle, 1997; Wilson & Peterson, 2002). Virtual ethnography is the best means to an objective understanding of web2.0 code through the profoundly subjective activity of surfing.

To explain virtual ethnography, let me describe Hine's (1998) application of the method. She selected the case of Louise Woodward, an American baby-sitter, on trial for death of a baby in her care. At first, the jury convicted her of murder and sentenced her to life in prison. In American law the judge can overturn the jury's decision and, in this

²² Even Elmer's work on *robots.txt* depends on finding a very public declaration of hidden information.

case, the judge announced he was considering this option. In an unprecedented move for the time, the judge also announced we would release his decision whether to exercise this right online.

The uncertainty of the case and the use of the internet caused Hine to wonder what discussion occurred online. To answer, her question she began to explore the discussion of the case online as her field of study. Where traditional ethnography connects physical sites, she connected virtual sites together to describe the online community concerned by the issue of Louise Woodward. From in front of her computer, she visited the various sites dedicated to the case. She sought to “work out what’s going on” and “to be a part of the setting” (Hine, 1998). Similar to a multi-site ethnography, Hine used multiple contexts and perspectives to assemble an account of the activity around the case.

I will conduct a similar study of the web, but I differ from Hine in that I am not studying a community, but web2.0 software. As a result, I am not only trying to ‘work out what’s going on’, but to also the role of software in mediating and facilitating human-computer interactions. Unlike Hine, I am playing a greater emphasis on the role of software in my observations. Interface studies often use auto-ethnographic explorations of the computer interfaces to describe the uses of the software and the function of code (Fuller, 2003; S. Johnson, 1997; Johnson-Eilola, 2005; Manovich, 2002; Turkle, 1997). However, Hine’s multi-site method remains applicable. Mackenzie (2006) uses a multi-site ethnography to study software (pp. 18-19). He treats software as a “multi-sited associative or concatenated entity” (p. 18). As a result, I have formed my thoughts about the two cases after exploring them from multiple angles and points of entry. I played

around with both Drupal and the Pirate Bay to understand them.

Now to focus on the particulars of my project; I will study Drupal and the Pirate Bay through auto-ethnography. In each case, I provide a brief arrival story that tells how I can to use and understand the platform. The purpose of my stories is to define the “particular kind of subjectivity of the ethnographer, which establishes her as able to know and speak about her object” (Beaulieu, 2004, pp. 152-153). I back up my arrival stories with my interactions with the two sites from Fall 2007 to Winter 2008. In addition, I will supplement my own subjective findings with content analysis that seeks to explore over ways people have participated with the sites. The smaller studies include surveys of posts and contributed files, and some analysis of the sites’ traffic to gauge popularity. I will introduce the smaller studies in the context of my argument in the next two chapters. Finally, I will strengthen my narrow scope with third-party interviews with developers and comments from users in order to capture different perspectives on the two projects. In my limited window, I was unable to conduct first-hand research and rely on these sources as a supplement.

Conclusion

My thesis began by asking how different groups, particularly those affiliated with a commonist perspective, structure web2.0. The web’s increased presence in our everyday lives means that its structures or platforms have political significance. Web2.0 is an array of different assemblages of humans, computers, servers, and code each with other own *code politics*. Platforms occur because web2.0 is a concentration of possibilities resulting from a convergence of modular digital elements and web2.0’s possibilities allow for a multitude of different structurations. At the end of the Chapter 1,

I suggested that articulation theory provided the best way to understand and describe the conditions of web2.0. The perspective excels at understanding the assemblage of discrete elements and the political implications of these configurations; however, the key thinkers never explicitly focused on digital environments when they developed the theory. As a result, I needed to provide a revised account of articulation theory applicable to web2.0. This chapter developed such an approach.

My approach to articulation involves the work of Ernesto Laclau, Bruno Latour, and Chantal Mouffe. Combined the three authors provide a rounded account of articulation that means my requirements. Problematically, the authors have kept their distance and the bulk of this chapter linked their respective works together. Primarily, I kept with Laclau & Mouffe's version of articulation theory and injected some concepts from Latour to enrich their discussion of material elements, like code. The resulting perspective defined articulation as a two-fold process of materiality and meaning – a double articulation. Materiality and meaning mutually constitute the final structure of an articulation. In reference to web2.0, double articulation refers to the concurrent articulation of code and politics its distinct structurations.

In the end, I have covered a lot of ground in a short time and I want to briefly summarize all the concepts I introduced before moving on the next chapter. Articulation theory has become my way of talking about web2.0. I began by introducing a semiotic approach to discourse theory. Semiotics breaks down structures into components to describe meaning and structure as relations and configurations. Meaning results from an element being located in a discourse. Latour, Laclau, and Mouffe share a semiotic approach. Continuing with the work of Laclau & Mouffe, I introduced their concepts of

overdetermination and discourse theory to model the openness of meaning and the multiplicity of discursive formations. In particular, I argued that overdetermination and discourse theory accurately describe the potentialities of a modular digital environment. Next, I defined articulation as a process that stabilizes the fluid meanings of an element into a moment or possibility a nodal point in a discursive formation.

Problematically, Laclau & Mouffe fail to adequately describe the role of material elements, like code, in the process of articulation. Latour's works fill in these details by arguing the epistemic equivalence of humans and non-humans. Human and non-humans mutually articulate. I introduced the idea of an actor-network to describe how elements, themselves discursive formations, could articulate. I introduced some new terms to describe the process of articulation in light of Latour. Articulations begin as preposition: suggested directions and configurations. When an articulation involves different actors, these actors translate the preposition into a new formation that eventually becomes the final articulation. The influence of an actor depends on its own stability; whether it is a weak element, a floating signifier, an empty signifier, or a nodal point. This revised version of articulation gives me a way to talk about the interactions between humans and code in the creating the structures of web2.0.

Articulation explains political power. In articulation theory, power is located in a hegemonic formation: a certain dominant configuration of elements concentrates power and defines our contemporary politics. Hegemonic formations result from our everyday articulations that either enforce or erode the linkages that create power; however, these everyday articulations include humans and non-humans a like. At the end of the section, I reintroduced my concept of the platform to describe how these technical actors translate

our action into discursive formations and how these platforms have political components, such as inequities of access.

Finally, I set out my methodological approach based on my understanding of humans and code. Virtual auto-ethnography provides one of the few ways to interact and understand technical actors. Software requires new methods of study. By studying what these web2.0 platforms *do*, I understand their politics and their development. In addition, I supplement my own subjective insights with interviews, development documents, and other data originating from my objects of study.

This chapter has attempted to take-on the rigidity of structure – not by rejecting of the power or the influence of structures, but by understanding the processes behind their existences. By seeing structures as assemblages, we gain a sense of their conditions of existences: their weakness and their strengths. Articulation theory gives us a way to think of web2.0 structures in motion – to see the stabilization of web2.0 platforms. The technical language developed here becomes a way to keep track of our moving targets.

I can now move on to some more concrete examples of web2.0. If this chapter seemed too broad, I hope to address these generalities in the next two chapters. Each of these chapters will flesh out the theory of articulation developed here in addition to describing alternative structurations of web2.0. Chapter 3 on Drupal delves into the relationship between humans and platforms through a discussion of the interface. In particular, I explain how Drupal's modular interface allows its users to reconstitute its code. Once I have explored the relationship between humans acting *in* code, I move to a study of humans acting *through* code. The Pirate Bay uses code as part of their political movement. Through this case, I develop an understanding of the double articulation of a

political movement. The two cases provide a way to understand what is going on around web2.0 and how we can theorize web2.0 through articulation theory.

Chapter 3 - Drupal

Introduction

The previous chapter developed a theoretical approach to the study of web2.0. Since it abstracted many of my concerns from the introduction, I want to restate the thesis's importance before situating Drupal within this work. As the web becomes increasing part of our everyday lives, we need to take stock of its political dimensions. Web2.0 involves a multitude of different structurations of humans and computers that institutionalize processes of spatialization and commodification. These terms deal with how information exists on the web. Can humans exchange information exchange freely or do they pay a fee per use? Do people have access to information or do they lack access to information? These questions revolve around the public's ability to participate in web2.0. Currently, web2.0 involves many different structurations of these processes making a study of the alternative structurations of the web so important. My thesis contributes to the study of web2.0 by studying how code and humans act to produce information commons or political movements. While some authors talk about larger trends in web2.0 (Benkler, 2006; O'Reilly, 2005; Shirky, 2008), I focus on specific cases.

Drupal fits into my thesis in two ways. First, the case discusses explores the complex relationship between humans and code. I address the structural aspects of code through a review of the theory related to human-computer interactions. Drupal gives me a chance to further develop an understanding of articulation and complex software. In doing so, I outline some of the power dynamics when humans act in code and provide an account of how a platform actions politically. By no means are these interactions between

humans transparent or necessarily equitable. Code makes its functions and channels users in hidden ways. After a discussion of these challenges, I introduce Drupal's modular interface enables users to interact with the platforms code so they can articulate their own values into the software. In this way, I define the conditions of an articulation; something Laclau & Mouffe fail to address.

Second, the chapter introduces a case of the politics of tactical code – a tool – and builds on the software-focused trend in tactical media literature developed in Chapter 1. Drupal operates with an alternative code politics than other platforms, where humans have more agency over code and can reconstitute Drupal's digital structure. While many applications allow people to manage their website, Drupal remains significant because Drupal manifests the modularity of web2.0 in its design and interface. As a result, Drupal is an amorphous platform that changes its very code – its constitution – based on the input of its users. As I will show, Drupal's design prioritizes a modular reconstitution and its interface allows users, especially non-programmers, to changes its code. People build-upon the resulting platform to create web sites.

The politics of Drupal relate back to my definition of a platform. As a spatial form, Drupal minimizes the distance from a user and the platforms code through its modular design. This modular design also encourages the development of a user community with shared resources. As productive tools, Drupal provides a way for people to participate in the creation of web2.0. Users articulate their laws – their politics – into the Drupal to constitute and configure their own web platforms. In this chapter, I focus on Drupal design, specifically its interface, to explore how the platform is a more accessible and empty platform participating in the decentralization of the production of web2.0.

The chapter addresses the politics of Drupal code, but not the politics of the Drupal movement. Free software develops involve complex social organizations that one could argue represent new social movements and Drupal would make an excellent case study for those interested in the politics behind the development of a free software project. This chapter is more concerned with the action, design, and properties of Drupal because it reforms the ways humans articulate in code. In other words, the software itself is the most interesting story and while we could easily just call Drupal a tool, its complex response to the oppressive elements of code represent a significant alternative structuration of web2.0.

Entry Story

I could have easily selected other applications, like Linux, Joomla, or Wordpress, to address modular design with open source code, but I selected Drupal because my own history with the software gives me some insights to draw upon. I found Drupal, in the summer heat of the riverside town of Rosario, Argentina. At the time, I was an intern with a women's rights organization in the city. I assisted the non-governmental organization with their website. As a good development student, I prioritized getting the organization off proprietary and dependency-laden platforms, and onto free software. My goal was not only technical; I also wanted to make the office more *usable* to the staff. Their current software worked poorly. I looked at ways of making their website more integrated with the organization.

At the time, the organizations website could only be updated with a pirated copy of

Dreamweaver, the standard desktop web-design tool²³. Web-design software simplifies the production websites on the world wide web. The software provides embeds:

some of the conventions of Web presentation by giving the user a determined range of choice in how to organize information in Web format: pre-designed pages, framesets, CSS styles, and so on. Design conventions are embedded in the software, propagating specific ways in which information should be packaged. As such, web-design software participates in the development of specific rhetorical strategies for Web texts (Langlois, 20005, pp. 578-579).

The quote above lists the capacities that Dreamweaver endows its users. The quote also hints that different web-design software includes distinct features and practices in their interfaces and these differences in coded structure modify their productive capacities. In the case of Dreamweaver, its simple interface pluralized the production of the web by lowering the technical knowledge needed to create websites. While seemingly a mundane problem, I decided to replace Dreamweaver because of its particular code politics. The commercial application did not meet my goal to move the office to free software. In addition, only one person in the office knew how to use the complex application, I wanted an application that could be easier to use. Finally, the website needed to be bilingual, a tasks difficult for Dreamweaver. After considering all these factors, I realized I needed to find better software for my organization's web strategy.

My demand was not alone. As websites became larger and more complex, developers created many different tools for web development. Mimicking the document management systems used by larger business, web developers and companies began creating applications to manage complex websites. The resulting applications used server-side programming languages and databases to produce dynamic websites. These systems tended to be easy enough that anyone could use them. These systems became

²³ Although some web developers still prefer to code by hand, most website design now uses software that provides a graphic user interface that automatically encodes our input into HTML code.

know as *content management systems* (CMSs). The first CMSs began to appear on the market in 1995 (Winters, 2003). In the later 1990s, web users adapted to the technology to write their own web logs or blogs and news websites began using CMSs as a means of participatory journalism (Bruns, 2005; Gillmor, 2004). CMSs began to attract thanks to the explosion in blogging and participatory journalism. Today, the Content Management System Matrix, a website that compares various CMSs products, lists 886 applications in their database.

Content managements systems depend on the concentration of possibilities in web2.0 to create an interface comparable to desktop software (Winters, 2003), like Dreamweaver. Users edit and interact with content through web2.0 platforms that provides interfaces that encode user input into html. Most blogs depend on content management systems, such as Wordpress, Joomla, or Movable Type. Many of these web platforms are free software, they “are relatively easy to create and maintain – even for non-technical web users” while combine “the hypertext of web pages, the multi-user discussion of message boards and listservs, and the mass syndication ability of XML and email” (Kahn & Kellner, 2004, p. 91). Given my desire to deploy ease-to-use, free software, one of these CMSs seemed like the right choice.

When searching for a CMSs in Argentina, I did many comparisons between different content management systems. Based on some online recommendations, I decided to investigate a project called Drupal. The project began as a hand-coded message board for students at University of Antwerp. To create the message board, he used the popular combination of open-source code, including the PHP scripting language, the Apache web server, and the MySQL database. In 2001, the initial developer Dries

Buytaert released the software under the GPL license making it a free software project. At the time I found it, Drupal had just launched its fourth release.

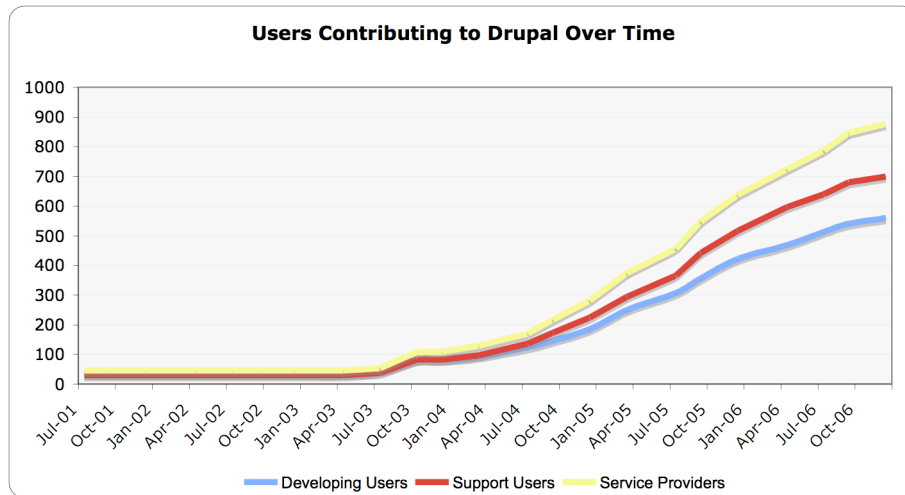


Figure 1 - Growth in Drupal.org Contributors
(Source:<http://groups.drupal.org/node/1980>)

Drupal has an active and growing developer community. Figure 1 depicts the growth in contributors on Drupal.org since the projects launch. These contributors include developers, people helping in support, and people selling their services. As a free software project, Drupal attracts the attention of numerous developers who began updating and improving the code.

Since its launch, the Drupal project has enjoyed steady growth. Figure 2 depicts the changes of Alexa's Daily Traffic Rank between four of the most popular web development tools. The daily traffic rank sorts websites in order of their combined page views and how many people visit the site²⁴. The lower the score the more popular the site. I included two other popular open source CMS applications, Wordpress and PHP-Nuke,

²⁴ For more information, see: http://www.alexa.com/site/help/traffic_learn_more

as well as Dreamweaver now owned by Adobe²⁵. One can clearly see Drupal's rise from a traffic rank lower than 100,000 in 2003 to its present rank just below the top 1000 websites. Drupal ranks just below the highly popular Wordpress blog software, but above the once dominant PHP-Nuke CMS. While not at the top of the heap, Drupal holds a respectable rank and when I began to use the software I entered into this community.

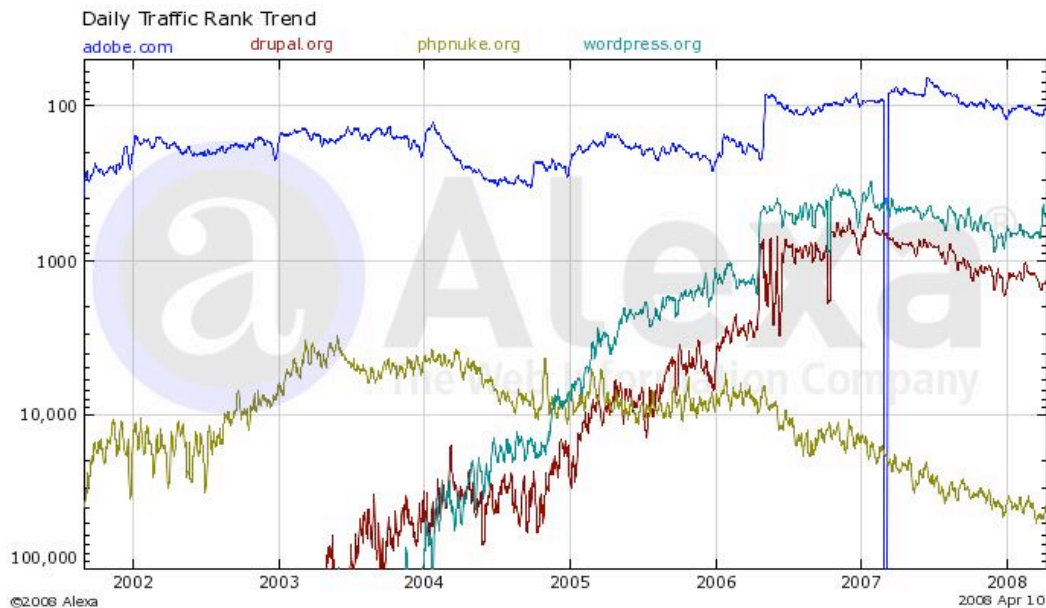


Figure 2 - Growth in CMS Traffic Rank (source: Alexa.com)

To learn more about Drupal, I read through its website *Drupal.org*. Drupal's self-description does not use the term content management systems like most of its competition; instead, Drupal lists content management as a feature and, on its front-page, calls itself a content management *platform*. The site defines Drupal as "a free software package that allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website" ("About Drupal | Drupal.org," 2007).

²⁵ Adobe purchased Dreamweaver's original developer Macromedia and Macromedia's data is no longer available. As a result, Dreamweaver's rank may be inflated because Adobe makes more products than just Dreamweaver.

Drupal scales to produce complex multi-user web spaces common among other web2.0 sites. I learnt Drupal had been deployed to create blogs, social networking, and websites for corporations and non-governmental organizations.

Drupal is designed to be configurable and to change, based on its environment. Drupal repurposes itself through modules: “a module is a piece of code which extends Drupal to provide a specific piece of functionality”(“Terminology | Drupal.org,” 2007). Many content management systems provide modules, but Drupal developers deliberately wrote the platform to facilitate modular extendibility. By browsing the resources on the site, I found modules to manage multi-lingual sites and manage an online library. As I will explore later, the site concentrated possible uses – the modules – of Drupal to provide me with a range of different configurations. Using Drupal allowed me to access many of possibilities of web2.0, such as blogging, RSS feeds, and rich interfaces, without knowing how to write code. Through a simple graphical user interface, I could configure my own version of the site and install modules to repurpose Drupal for my own ends.

Over the summer of 2005, I developed a Drupal and trained the NGO’s employees to use it. First, I setup a copy of Drupal on the organization’s personal server. I then installed a few modules that extend Drupal’s capacities. In particular, I added an international module to manage the bilingual content, changed the language of the interface to Spanish, and improved the default HTML editor. When I had troubles, I visited the support forums on the Drupal.org site for help and to read and re-read the documentation. The results can still be found and up-to-date at: <http://www.insgenar.org>.

In reflecting, Drupal offered me a highly productive platform to produce web space. I suggest that Drupal becomes a platform that allows users to *articulate* their ideas

of a website. At its core, Drupal is a configurable piece of software that creates a web2.0 site. If Lessig says, “code is the “built environment” of social life in cyberspace(Lessig, 2006, p. 121), then Drupal is an architectural tool. Administrators tweak the working of Drupal code to constitute my own particular version of web2.0. For example, I could configure Drupal to run as a blog or I could add some modules to turn the site into a video-sharing site. In the simplest terms, Drupal allows the user to be like an architect in constructing the content, features, and limits of their own web site. The platform’s design is open or empty enough to provide me with tremendous possibilities and not rigidly locating me within a static code structure.

I can restate Drupal’s functionality explicitly through my theoretical approach I developed in Chapter 2. Both Drupal and I are actors with overdetermined capacities. I articulate my ideas about a website design into the code of Drupal. I act through the platform’s user interface. Working with my initial preposition, the Drupal interface encodes my idea into its own operating code. As a result, my site begins to change form to reflect my design; however, the articulation is a dialogue between Drupal and I. Learning an application like Drupal cognitively resembles learning a language because I had to train myself how to think *in* Drupal to understand its limits and capacities. I experimented with countless test sites before I was able to enact my ideas through Drupal and its modules. The final articulation of code is a compromise between two actor and this compromise results in distinct code structure – a modulation of the possibilities of web2.0 as expressed by myself and Drupal.

From this simple story, we can learn a lot about the role of platforms and the code politics of Drupal. We can see how the software gave me a way to create a particular

modulation of web2.0. Without its interface, I would be lost amongst the complex possibilities of the web2.0 platform. In the rest of the chapter, I unpack my relationship with the Drupal platform. In doing so, I work through the complexities of interacting with code and the particular contribution of Drupal to these interactions on the web.

The Problems of the Interface

Now we can turn toward understanding the particular characteristics of Drupal as a platform. To do so, I need to unpack the structural dynamics of complex software objects by exploring the relations between humans and code. I want to work through the tensions latent in software studies around how a platform's graphic user interface spatializes the user in relation to its code. How close or far do interfaces position the user from its inner workings of code? What is the articulatory significance of spatial forms? Our sense of the novelty of the Drupal's modular interface depends on understanding the tension between the productive capacities of a platform and the ways the user accesses these capacities.

As discussed, Richard Rogers divides the web into two ends, front and back, in order to generalize its complex layered model. At the back-end of the web are the servers, bots, and code that present information on the front-end of the web. I, the surfer, typically only accessed the front-end of the web through a graphic user interface²⁶.

Problematically, my access to the productive capacities of code and my location

²⁶ Although the graphic user interface is a representation device, I treat it as a spatial relation. The spatializing aspects of the interface get to the heart of what is at stake when we talk about representation. What an interface represents and what it ignores influences the relation a user has to a network. At the extreme, when a program crashes and we are left with a blinking error box, the interface pushes as far away from the software as possible. We can only click yes to close the program. In this section, I have avoided getting into the representation aspects of the interface to simplify the argument and to keep attention on the spatial and productive aspects of platforms, rather than their representational qualities.

in the actor-network depends on the back-end code to structure my front-end experience. This relationship is so strong that Lessig describe the back-end code as the *law* of cyberspace (2002, pp. 1-8). Chun (2005) describes software as ideology because the back-end code hides its operations from the interface. This argument leads Chun to describe the political aspects of Windows Media Player I mentioned in Chapter 2. Lessig's claim that *code is law* and Wendy Chun's claim *software is ideology* present an interesting challenge for the Drupal project. How can we think about any agency at the front end without it being determined by the back end? This challenge is part of a trend that interface designers have struggled for a long time: how to relate the front end and the back end in a way that gives people agency over software.

To understand the tension between front and back, we first need define an interface. For software, the interface is the point of contact between humans and computers.²⁷ Simply put, we act on computers using the interface. Laurel defines interfaces as “a contact surface” that “reflects the physical properties of the interactors, the functions to be preformed, and the balance of power and control” (Quoted in Fuller, 2003, p. 99). As Johnson-Eilola writes, “the interface – the surface – provides users with suggestions about how to work” (Johnson-Eilola, 2005, p. 45). The interface is a discursive formation that includes and excludes the capacities and functions of the back end code.

By representing a platform and its capacities, the interface establishes a relation between the user and the capacities of the platform. The interface becomes the point of translation between human and code. With software, any articulation begins at the

²⁷ For a taxonomy of interfaces, see (Cramer & Fuller, 2008).

interface. The capacities surfaced at the interface of a platform define the possible channels of articulation – the means of production – for a user. Since the interface involves the intersection between human and non-human actors, it plays a pivotal role in the translation of a preposition into a final articulation. We articulate on a software platform with the capacities surfaced by the interface. The interface translates our actions into code.

Akrich & Latour (1992) provide some useful language to flush out the translation between human and platform through the interface. They argue that the interface *prescribes* certain capacities to the user. Prescription is “what a device allows or forbids from the actors” (Akrich & Latour, 1992, p. 261). The productive capacities of a platform depend on the interface’s prescriptions. Not only does the interface provide certain capacities, but it also requires certain capacities on the part of the user. Latour & Mol refer to a technology’s requirements as pre-inscriptions: “the competences that can be expected from actors” before interacting with a technology (Akrich & Latour, 1992, p. 261). Where prescription refers to the capacities of a platform, pre-inscription refers to a platform’s demands on the capabilities of the user. In computing, the two aspects of a platform often conflict with each other.

Typically in computing, the pre-inscription and prescription are inversely related; the easier a program to use, the less powerful the program. This belief comes from a long-standing debate between Microsoft DOS and Apple Macintosh users described by Turkle (1997). I can describe these two interfaces as flat and deep using Johnson-Eilola’s (2005) terminology. Deep interfaces refer to the blinking console of DOS or Unix whose pre-inscription required users to remember an array of cryptic commands. The blinking

command line offered no clues, but connects a user directly to the back-end code running the machine. Conversely, Apple is a *flat* interface. By bringing to the surface some of the features of the software, flat interfaces allow users to *see* their computer in action, at the cost of being increasingly distanced from the back-end. The software is easier to use, but distances the user from the code (2005, pp. 42-53).

At this point in the debate, it would be fruitless to suggest that either a completely flat or a completely deep interface provides an answer to the challenge of the power of the back over the front. The different responses – modulations between flat and deep – involve a range of spatialization processes that each has their own political ramifications. For example, many of the commercial web2.0 platforms involve very flat interfaces that push the user away from the site's inner workings. Beneath all the intriguing social networking aspects of Facebook lie hidden profiling machines that commodify user input. Facebook keeps the profiling aspects of the site, indeed the very ability to opt out of profiling, away from the user interface; however, Facebook also greatly simplifies the act of social networking – making the activity much more accessible to less technical computer users.

Although one could argue that Facebook's deliberately distances the user from processes of cybernetic commodification, I am much more interested in the challenge that code presents to the user's agency. Interfaces need to address how can the interface controls its code to surface its ideological or constitutional implication, In short, how can rigid code become malleable by the very system it constitutes. If we are to understand web2.0, we need to understand how code structure can create alternative spatial forms that address the challenge of the front and back end and create new means to articulate in

technical systems. As I will argue, the Drupal interface exemplifies a spatial form that connects its users to the underlying code. I argue that Drupal's modular interface provides a way for software to reconstitute – to rearticulate – its code through its interface. In the following section, I explore how Drupal's modularity relates to development and deployment of the software.

In this section, I outlined a general tension between the human and the computer at the interface. This tension really gets us back to the idea of articulation in a digital environment. We need to work through the complexities of acting with code. In Chapter 2, I only touched upon the idea how humans and non-humans mutually articulate structures on the web. We can now see that human-computer interactions often lack transparency and have inequitable distributions of agency based on how interfaces spatialize human and code to provide prescriptions and require pre-inscriptions. As I have tried to show, platforms typically lessen their prescriptions– our articulatory capacities – to lower their pre-inscription. In doing so, the platform distance the user from its constitutive code and thereby limits their agency within the actor-network. Drupal, as I will show in the next section, goes in a different direction to make its code more accessible, all the while making web2.0 easier to reconstitute.

The Modular Interface of Drupal

The Drupal software platform prescribes users with the ability to configure the architecture, the rules, of their version of Drupal. It “is intentionally generalized in its approach to doing things. For instance, instead of creating a fixed “news engine”, Drupal provides systems and tools that allow you to quickly assemble your own custom news engine and tweak it to do exactly what you like” (“The Drupal Overview | Drupal.org,”

2007). Drupal is designed to reconfigure its code based on user's decisions. In addition, Drupal wants to make the web easier to produce for people without narrowing the types of content producible. Ease of use is one of its seven principles design principles. Another principle is Drupal's commitment to extensibility. Drupal.org continues that the platform is "a sort of "builder's kit" made up of pre-designed components that can be used as-is or be extensively reconfigured to suit your needs. Its intent is to provide incredible flexibility while still allowing people who aren't programmers to make powerful websites" ("The Drupal Overview | Drupal.org," 2007). Drupal's two design principles are interesting in light of the tension between the front end and the back end. Being extensible and being easy to use do not go hand in hand.

In Appendix I, I have modeled the Drupal interface. I divided the surfaced features of the Drupal interface into four sections: create, administer, extend, and organize. In each category, I have listed the corresponding Drupal functions below. The create category lists the ways users can add and manage content on the site through writing pages and posts. Administrative functions refer to the ways Drupal can be configured to suit a site's purpose. Administrators can change, for example, how the site's navigation works and how a site looks. Drupal also uses taxonomies "to describe the category system, which you can use to classify and organize content on your web site" ("Terminology | Drupal.org," 2007). In the organize categories, I have listed the functions related to the taxonomies. Finally, Drupal, like most content management systems, allows users to extend the site using smaller applications called modules. The extend category contains functions pertaining to modules. A user's access to functions depends on their permissions. For simplicity's sake, I divided permissions into three tiers:

functions available to the public, functions available to site contributors, and functions available to site administrators. While by no means an exhaustive list, my chart shows the various capacities prescribed to Drupal users.

In this list, we can see two categories of functions emerge: production, and

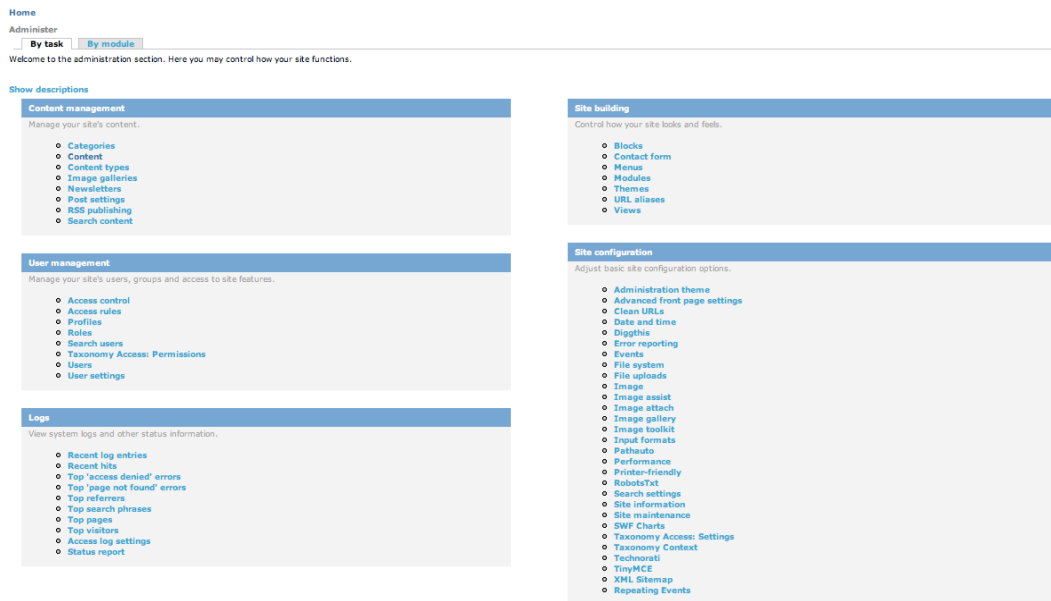


Figure 3 - The Drupal Interface - Administration Menu

configurations. I am interested in how Drupal allows people to reconstitute or configure their web software. The Drupal configuration interface is not the same as a typical software interface. As a result, I am focusing on the configuration of Drupal. The Drupal interface acts more like a hood-latch on a car. The interface exposes us to the engine, when we finish tinkering; we close the hood and start driving.

The Drupal interface provides a easy-to-use menu, seen in Figure 4, to enable and configure modules. To use a module in Drupal, a user downloads and installs modules from *Drupal.org* onto their version of Drupal. The site acts as a repository of modules that developers have created. Once installed, the interface lists each module in a list with a description next to its name. From here, the user enables the module. Importantly,

modules feature their own configuration menus allowing users to tweak their functions. The activity on the surface here directly modifies the code running in the back-end. Clicking a module injects its code into the code operating the site. Although the menu gives the appearance of a stable system, Drupal changes dynamically because of its modules.

The interface brings to the surface the inner workings of the web software. Figure 3 depicts the Administration Menu of Drupal. The menu lists as we can see the various points of configuration and control. Although many of the items on the list are means of production, I want to focus on how the ‘pre-designed components’ that allow the user to reconstitute the underlying code.

Drupal’s significance comes from its modularity – a concept that I introduced in Chapter 1 describe the assemblage of discrete elements. A module, in Drupal lexicon, is a snippet of code that modifies the Drupal source code. Modules allow users to exclude and include certain bits of code from their site. In Appendix II, I list all the modules distributed with Drupal. As the list show even the core functions of Drupal exist as modules. Unlike Facebook applications that float on the surface of a user’s profile, modules have the ability to radically reconstitute the Drupal site. Modules intercept code from the core and alter its operations, thereby commanding great control over the purpose of a Drupal site. By being modular, Drupal becomes an object in motion, like the movement of a sound wave, constantly changing based on the tone of its inputs. Drupal modulates as a response to a user’s articulations. The software, within some limits, expands and contracts itself in response to demands placed on it by users. Modules are like to be words in a sentence. By including and excluding words, we radically modify

the meaning and content of the sentence. We can see Drupal modules are articulatory elements – pieces we put together. Most of the features of Drupal exist as modules.

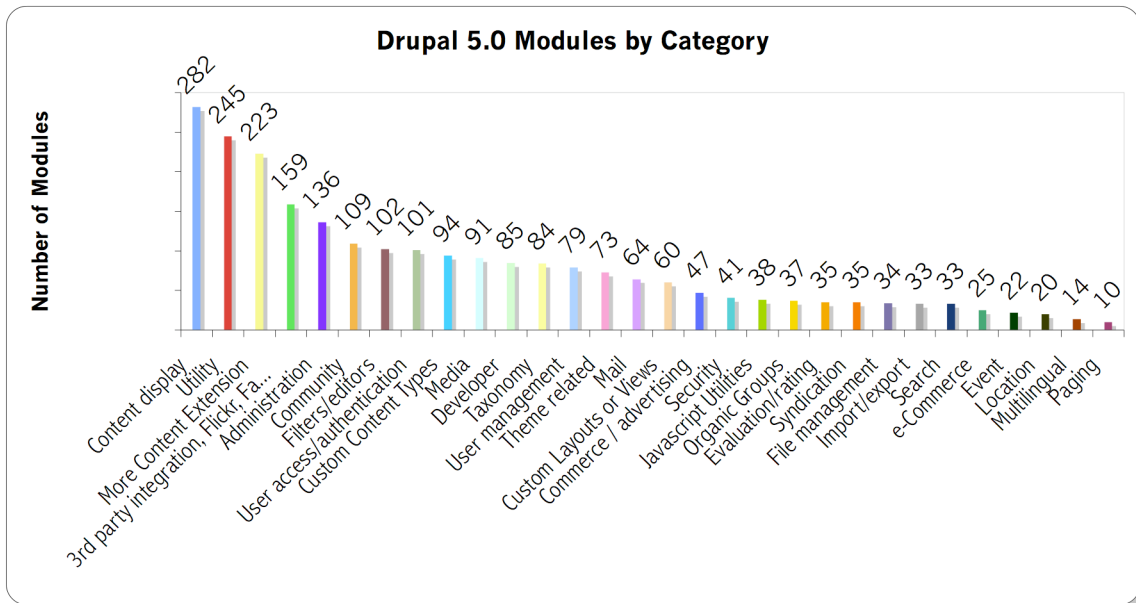


Figure 5 - Drupal Modules for Drupal 5.0

Importantly, modules in Drupal are both a signifying element and an actor. First, modules divide code into discrete functions easily signified. Simply put, modules break complex code down into digestible bites. When I review the list of modules in menu, I see their name and a brief description that explains what they do. I depended on these little hints when I configured my first Drupal site in Argentina. Second, modules enact their descriptions when enabled. The act of checking a box on the menu injects the module's code into the Drupal site. In this way, modules represent and enact discrete code actions.

Drupal features a highly diverse range of modules. Figure 4 depicts the diversity of modules available for Drupal 5. The Drupal website acts as a communal repository of all modules available. At the time of my study, Drupal had 2,411 modules that Drupal.org divided into 30 categories. The average category has 80 modules. Each modules extends

and modifies the capacities of Drupal in specific ways. The chart resembles the long tail that Anderson described in Chapter 1. Similar to music, the Drupal site expands to include all the possible modules for Drupal regardless of their popularity. As a result, Drupal modules extend the platform from common tasks like improving the software's search engine or the type of media it can handle to the obscure, such as allowing Drupal to become a bibliographic tool.

Returning to my nomenclature in Chapter 2, modules are floating signifiers. They are tangible bits of meaning and structure used in the articulation of a Drupal site, but they need to be assembled into a Drupal site to make any sense. The final assemblage or articulation contains a web of interconnected modules that modify and influence each other. Modular software is discursive. The Drupal site becomes a discursive formation of modules or floating sutured together to produce structure and meaning. Configuring modules resembles:

Raymond Queneau's *Cent mille milliards de poèmes* (1961), a book in which each page may be cut into several strips corresponding to the lines of a poem. By juxtaposing the cut strip on one page with strips from other pages, large numbers of combinations are possible, as indicated by Queneau's title (Hayles, 2004, pp. 76-77).

Like the reader or editor of Queneau's book of poems, users arrange modules in various ways to create new expressions of web space. The pre-cut lines resemble the thousands of Drupal modules that users can include or omit to articulate their own distinct web space. Each of the pre-cut lines again resembles a floating signifier – full of potential waiting to be placed next to another line. The *Drupal.org* website becomes its own book of poems by the 2,411 modules that the expansive horizons of a user's articulation of web space.

We can now explicitly describe articulation using Drupal. Where Laclau & Mouffe only give vague examples of articulation, I describe articulation on Drupal as the

assemblage of modules in ways that reconstitute the Drupal code. Modules are the elements that we assemble. Our prepositions translate into these modules and our prepositions changes. In this way, Drupal provides a means for the double articulation of code and politics as a site can both advocate certain practices on the web and operationalize these practices in their web code. For example, the NowPublic news site both advocates new ‘crowd powered’ news on their site and creates a platform for people for people to produce their own news. Through Drupal, we can see how code gives people the ability to actualize their politics, not only express them. These expressions occur through the very structure of a Drupal site that the platform’s modular interface allows users to reconstitute.

Modularity & Development

Given the importance modules play in the possible articulation of Drupal, we also need to understand the production of modules. Where do modules come from? Modules result from distinct development practices institutionalized in Drupal’s code. Mackenzie’s description of the Linux’s structure dovetails nicely with our understanding of Drupal. They both feature modular design. He defines Linux as “a highly distributed object” comprised of “a loose corpus of source code” consisting “of several thousand files organized in an intricate tree-like hierarchy” that “provisionally stabilizes” in the form of a “release” and, at the same time, under “constant modification” by “patches” that modifies the source code” (p. 70). In Appendix II, I have listed Drupal 5.0’s structure made up of core and modules. A key difference between the two: Linux needs to be compiled before becoming executable where Drupal’s PHP code only needs to be interpreted by a web server. In both cases, the software exists as a collection of core

objects extendable by a collection of modules (p. 70).²⁸

In February 2008, I collected 500,000 Drupal.org profiles to see how people contributed to the project. From 500,000 profiles, I found 254,127 active profiles or profiles that listed any data included gender, interests, and contributions. In figure 6, I depict the results from this sample based on how users contributed. In comparison to the number of active profiles: 0.2% of users added to documentation, 0.4% of users

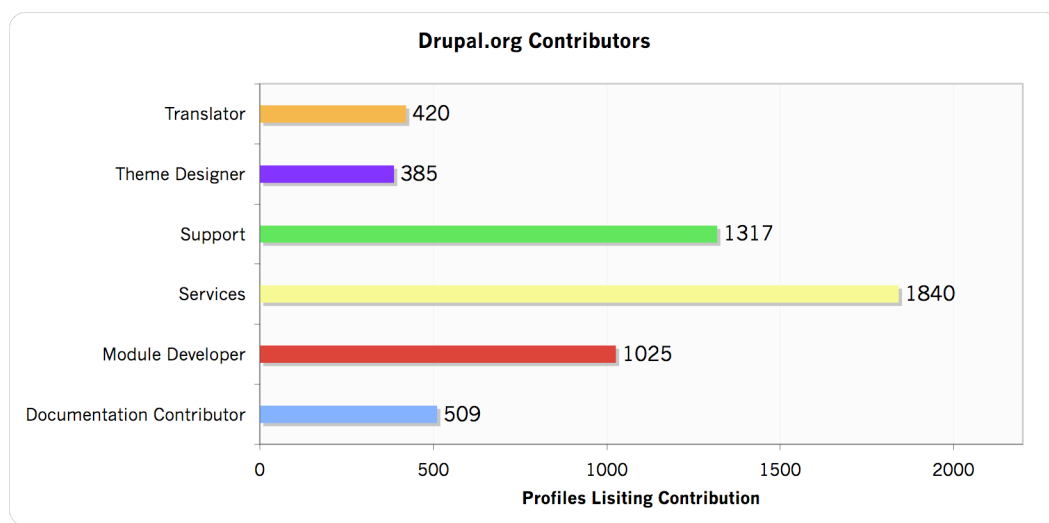


Figure 6 - Drupal.org Contributors (Collected: February, 2008)

contributed to a module, 0.72% of users offered their services, a few profiles (0.15%) submitted or contributed to Drupal's themes, and 0.17% users helped translate Drupal. These numbers may seem low, but low contributions are not uncommon among free software projects. As of version 2.6.24, Linux has only seen 3,678 developers out of its millions of users (Kroah-Hartman, Corbet, & McPherson, 2008).

Contributions flow through the modular design of the Drupal software which

²⁸ Linux users through can add and remove modules to operating on the file, typically through a flat command-line interface. Drupal uses enable, disable, and configure modules through the Module Menu.

results in contributions being integrated into the project in a way consistent with a commonist approach to the web. Development decentralizes and modules based on the capacities of the contributor. Modular design allows “different individuals to contribute vastly different levels of efforts commensurate with their ability, motivation, and availability” (Benkler, 2006, p. 103). Keeping with Benkler’s point a modular architecture is a tactical choice that benefits the project by allowing the greatest number of people to participate in the ways they see fit. Drupal’s development remains open so that contributors can create their own modules without being constrained by Drupal’s core. Within limits, Drupal acts as an open platform for people to develop. Drupal.org suggests nine ways individuals can contribute to the project. These suggestions include tasks for programmers and non-programmers. Programmers can help by programming and bug fixing. People who have an advanced knowledge of developing websites with Drupal can assist in writing Drupal documentation, helping user learn Drupal, and testing new version of the code. The project also requires translators and usability experts who can help make Drupal more accessible. Designers can contribute new themes and create materials to help market Drupal. Finally, all users can donate money (“Contribute | Drupal.org,” 2007). The modularity of Drupal’s design allows all these efforts to occur simultaneously and to flow into one collective development project.

I want to return to how the development affects the user and their capacities on the platform.²⁹ The amount of activity circulating around Drupal results in an active user community. This community results in the production of hundreds of different modules that come from many different deployments of Drupal where developers had to write

²⁹ Further research needs to explore the accessibility and the hierarchies in these channels of participation. Certainly the development project involves power structures.

their own code, develop their own theme, or write their own documentations. The modular design of Drupal allows these discrete contributions to easily integrate into the project. Instead of keeping the code to themselves, many users decide to upload their work as *networked public goods* on Drupal.org. Once uploaded, a module becomes a community resource. In short, the modular design of Drupal allows for commons-based peer production (Benkler, 2006).

Drupal's production model creates an information commons of shared usages and extensions. As a user, I have access to these shared resources to design my own site. The resulting system resembles Bessinger's work on modular action: an "action that is based in significant part on prior successful example of others" In using a module, I follow the steps of its developers who created the module. They created the module to extend their own site and, by sharing the file, I benefit from their past actions. In this sense, a modular architecture encourages creates a Drupal community with shared resources and history. I benefit from past developments and articulate my site through modular action. When I use Drupal, I enter this community.

Conclusion

In conclusion, let me relate my argument contained in this chapter back to my theoretical approach and my interest in alternative structurations of web2.0. I argue that Drupal provides a site for more open articulation in code and this helps to understand the act of articulation. Laclau & Mouffe do not elaborate on how the material location of an articulation affects its construction. They avoid dealing with the medium (Dyer-Witheford, 2007). I hope to contribute to the field of articulation study by working through the politics of articulations *in* code. I am suggesting that Drupal becomes a

platform for articulation. People articulate in code using Drupal.

By constructing a content management system for the web, Drupal is articulating a new platform for the web. We have seen the assemblage of forces attempting to preempt use as an act of digital enclosure. In its modular design, we have seen an attempt to design a platform that expands to suite a user's preposition. Where other web platforms attempt to limit and channel a user input, Drupal attempts to surface its back-end to allow users to re-constitute its code space.

Drupal creates a platform capable of being the technical grounds from articulations. My usage of *empty* requires some clarification. An empty platform comes from Laclau's concept of the empty signifier introduced in Chapter 2 as a way to describe a sign capable of taking on multiple meanings or becoming a concentration of meanings for a social movement. I connect the idea of an open or *empty platform* to Laclau's concept of an *empty signifier*. Laclau uses the concept of the empty signifier as a central concept in his work on political movements. Given the diversity of the social, distinct and autonomous political groups need a unique and carefully articulate a vessel for self-representation. The empty signifier becomes a grounds capable of supporting an articulation. It "does not *express* the unity of the group, but becomes its *ground*" (Laclau, 2005, p. 231). The empty platform resembles the empty signifier in that they both need to be articulated as constructive and open grounds; a task easier said than done. I would suggest that Drupal acts as an *empty platform* because it is a software grounds for users to articulate their own vision of web space.

Laclau's usage of empty does not suggest an apolitical terrain; rather being empty requires tremendous effort on the part of its creators. An empty platform does not

presuppose or define its articulatory usage, rather an empty platform leaves the stage empty for people to stand and speak. An empty platform is a place designed to be built-upon by its users, unlike other platforms with greater pre-inscriptions and less prescriptions. By arguing that Drupal is an empty platform, I argue that its modularity and reconstitute code has political significance: the lack of a defined political agenda and the production of an open space are a political acts. Digital enclosure attempts to foreclose spaces like Drupal from circulation. By acting as an empty platform that allows users to reconstitute code, Drupal signifies a potential ground for actors to participate in web2.0.

In conclusion, allow me to explain why this modular system is significant to platforms and what Drupal offers to political organizations on the web. Drupal exemplifies how open platforms contribute alternative, and non-commercial means of producing the web. In comparison to a platform like Linux where a platform really becomes a means of accessing and using your computer, Drupal is a productive and open platform that can be deployed in a variety of contexts and causes. Drupal becomes the ground where different users and organizations build upon. This demonstrates how Drupal aids our productivity. Further, by using Drupal, users enter into a shared space, almost a commons, where they benefit from the circulation of networked common goods. Drupal creates a common space through it's standardize platform that, in turn, produces new spaces. Drupal, in this way, becomes almost a tactical database of modules ready to be deployed in the service of any cause. In a time where web2.0 depends predominately on commercial platforms, Drupal demonstrates the existence of alternative platform that should not be overlooked.

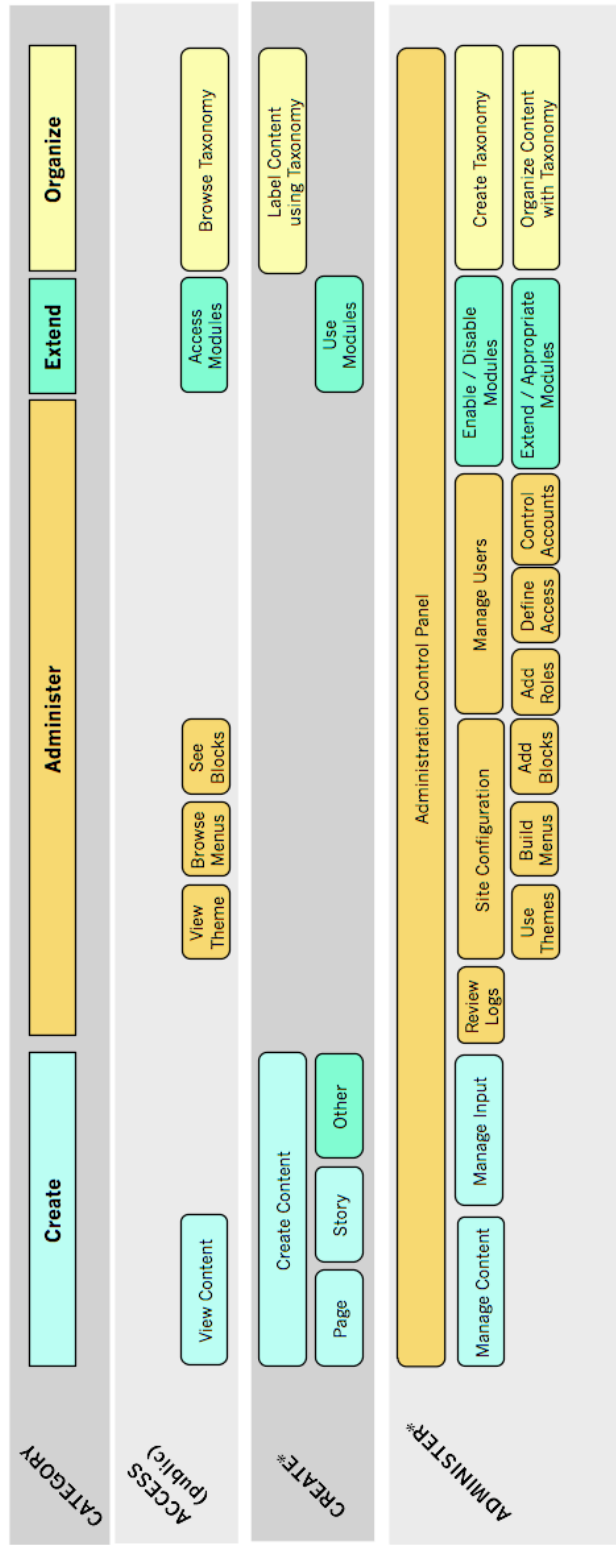
My discussion of web2.0 cannot end here. Drupal is an abstract example of an alternative structuration of web2.0. Although the case demonstrates the challenge and necessity of creating that capable of reconstitution, I have stopped short of providing examples of deployment or applications. Indeed, my concept of the empty platform alludes to Drupal's capacity to support political movements using web2.0; however, I do not address its political applications of Drupal in this chapter because I want to discuss the intersection of political movements and code in greater depth.

In the follow chapter, I explore the relations between politics and code through the case of TPB. I argue the case demonstrates the articulation of a political movement that occurs in politics and code. TPB shift from software platforms to political platforms by starting their own file sharing site and by defending file sharing publicly. The case further explores the theory of articulation in relation to political movements and describes the group that is most important alternative structurations on web2.0.



Drupal Interface Map

Appendix I



* Requires User Account, Access to Features Depends on Account Permissions Source: Drupal.org Viewed: 19 December, 2007 Created by: Fenwick McKelvey

Appendix II

Core Modules

Source: <http://drupal.org/node/27367>

Core - required

Block - Controls the boxes that are displayed around the main content.

Filter - Handles the filtering of content in preparation for display.

Node - Allows content to be submitted to the site and displayed on pages.

System - Handles general site configuration for administrators.

User - Manages the user registration and login system.

Watchdog - Logs and records system events.

Core - optional

Aggregator - Aggregates syndicated content (RSS, RDF, and Atom feeds).

Book - Allows users to collaboratively author a book.

Comment - Allows users to comment on and discuss published content.

Contact - Enables the use of both personal and site-wide contact forms.

Drupal - Lets you register your site with a central server and improve ranking of Drupal projects by posting information on your installed modules and themes

Forum - Enables threaded discussions about general topics.

Legacy - Provides legacy handlers for upgrades from older Drupal installations.

Menu - Allows administrators to customize the site navigation menu.

Path - Allows users to rename URLs.

Ping - Alerts other sites when your site has been updated.

Profile - Supports configurable user profiles.

Search - Enables site-wide keyword searching.

Taxonomy - Enables the categorization of content.

Tracker - Enables tracking of recent posts for users.

Upload - Allows users to upload and attach files to content.

Chapter 4 – The Pirate Bay

Introduction

So far, in the thesis, I have theorized the articulation of different web2.0 structures with their distinct code politics. I began by outlining different processes of commodification and spatialization embodied in web2.0 structurations called platforms. I then introduced articulation theory as a way to conceptualize the different structurations of the web. Articulation provides a way to explore structures as assemblage of different elements of web2.0. Problematically, these elements remain inert in the original reading of articulation theory, but by rethinking elements as actor-networks – as assemblage themselves that act – I could expand the role code in the act of articulation. In Chapter 3, I addressed the tension between software's back end and the front end by exploring how humans interact with Drupal's modular user interface to articulate *in* code. Drupal contributes an empty platform capable of reconstitution on its user demands. The case described a way users can act in the production of web2.0 without being centralized into corporate platforms or being a technical elite.

To build upon the previous chapter, I need to describe platforms as part of a political movement. The Drupal case abstractly dealt with the issues related to articulations in code, but it did not examine specific examples of deployments of Drupal. I consciously decided to avoid focusing on how political movements take up platforms because I wanted to explore political movements and platforms in depth in this chapter. TPB provides an excellent case of how a political movement uses a web2.0 platform as a political platform. By way of TPB, I link articulation theory to a political movement and

discuss the double articulation of politics and code. The group's strategic use of code and software has proven successful in opposing copyright laws in their native Sweden.

TPB is one of the most significant actors of web2.0, but it does not receive the same attention as the other platforms like Facebook, Wikipedia, or YouTube. Its influence should not be understated: millions of people use TPB for file sharing("The Pirate Bay - Wikipedia, the free encyclopedia," 2007; "thepiratebay.org - Traffic Details from Alexa," 2007; "thepiratebay.org (rank 360) - Website Audience Profiles from Quantcast," 2007), the groups attracts international attention in the media (Daly, 2007; B. Johnson, 2007; Norton, 2006; "The Pirate Bay - Wikipedia, the free encyclopedia," 2007), and is a figurehead of the file-sharing movement (MPAA, 2006). The group's success results from its careful construction of a political movement using the popularity of the platform.

Arrival Story

I first learned about the site in the summer of 2005 when I was living with a roommate much better informed than me regarding online file sharing. The most popular file-sharing protocol then and today is the bittorrent protocol. It had become the most popular way to download illegal copies of music, movies, and applications. We were both reminiscing about a long-closed bittorrent site, known as *Suprnova*. The site provided the public with a search engine to look for different files that people had shared and, as a result, the site gave us access to a huge resource of cultural goods; ones that we did not have to pay for. As a replacement, he suggested that I use a site called *The Pirate Bay*.

At the time, I knew of a bunch of other bittorrent sites, but I remember being struck by TPB's name. It seemed an odd name for a file-sharing site, considering most programs

used vague names such as *Limewire*, *Morpheus*, *Kazaa*, *Napster*, or *Audiogalaxy*. No program was bold enough or foolish enough to mention piracy. TPB had no trouble talking about piracy. Its front-page, seen in Appendix I, depicted a pirate ship under full-sail. The Pirate Bay referenced, at once, the history of the digital underground and the lore of pirates of the high seas. By referencing the concept of *piracy*, TPB connected the accessibility of modern peer-to-peer file-sharing with the *digital underground* of the 1980s and 1990s. The history of illegal or subversive file-sharing is as old as the computer itself. Some argue that the *digital underground* (Sterling, 1992) or the *computer counterculture* (Ross, 1991) played a role in the creation and popularization of computers in general³⁰.

The name encouraged me to study the group. In a post-Napster world, the politics of piracy has been lost under the friendlier title *file-sharing*. Napster brought about an era of *mass piracy* (Dyer-Witheford, 2002, pp. 142-143) where anyone could pirate digital goods, but also Napster obscured a long history of computer piracy. Most of the recent popular file-sharing projects have been decidedly apolitical and, in a sadistic way, commercial. The name *Pirate Bay* sounds so distinct because the *Napsters* of the era of mass piracy have tried to distance themselves from the politics and the history of computer piracy. Even the other non-commercial bittorrent sites avoid the appearance of

³⁰ Many of the pioneers or *hackers* believed in a strange mixture of counter-cultural politics values, techno-utopianism, and, at times, grassroots capitalism (Barbrook & Cameron, 2001). These values developed as hackers tinkered on computers and experimented with software (Levy, 2001). When hackers became marginalized in the corporate world these values justified more subversive activity, like breaking into private computers, cracking software protection schemes, and circumventing digital locks (Dyer-Witheford, 2002, pp. 135-139; Sterling, 1992). I will not go into too many details about the evolution of hackers since it has been already well documented (Jordan & Taylor, 2004, pp. 9-18; Wark, 2006) and critiqued (Barbrook & Cameron, 2001; Jordan & Taylor, 2004; Ross, 1991). I only want to establish TPB as one of a series of file-sharing sites and that when the site's operators call themselves and users of the sites as *pirates* they reference this history and politics.

political action.

To be clear, TPB is not the only bittorrent website in the world. Far from it, as hundreds of trackers exist online. The site might not even be the ‘world’s largest tracker’, as the administrators claim nor the most popular³¹; however, as I began to follow TPB, I realized that it is the most political torrent website. Their decision to start the site, their usage of bittorrents, and their explanation of its function all have a political intent. TPB was a fully operational political movement by the time I became aware of them and had only been in operation for two years. The origins of TPB demonstrate the effectiveness of the tactical usage of code to promote a political message.

I began to follow the group closely after their failed attempt to purchase Sealand: a sea fort off the coast of Suffolk, England that featured a high-tech internet hosting site. After the platform came up for sale, TPB launched a website, BuySealand.com, to raise money to purchase the fort³². The attempt captured mine and the attention of the international media because Sealand rests in international waters and does not fall under the jurisdiction of any nation³³. International copyright laws do not apply in Sealand and the fort once acted as a pirate radio station. Also, the internet hosts had a reputation of being run by “a crew of armed cypherpunks, amped-up networking geeks, and libertarian swashbucklers” (Garfinkel, 2000). Sealand acted as an important symbolic act for TPB. If TPB were looking, they would have a hard time finding a better symbol of piracy than Sealand.³⁴ Although TPB did not acquire the fort, they did capture enormous attention

³¹ <http://torrentfreak.com/10-most-popular-torrent-sites-of-2007-071229/>

³² http://www.theregister.co.uk/2007/01/12/pirate_bay_buys_island/

³³ http://en.wikipedia.org/wiki/Principality_of_Sealand

³⁴ See also,

<http://www.theglobeandmail.com/servlet/RTGAMArticleHTMLTemplate/D,C,C/20010305/wnapp?tf=RT/>

and became a symbol of internet piracy worldwide.

Today, TPB is enormously popular. In Figure 1, I illustrate the growth of TPB. The chart shows three trend lines for the total number of computers connected to the site, the number of register users, and the number of files or torrents shared on the site. As indicated, the size and popularity of TPB has grown since its launch. On 3 December 2007, the site had 2,332,638 registered users with 5,723,956 computers sharing 806,133 files³⁵. Alexa ranks TPB as the 101st most popular site in Canada and the United States, and the 12th most popular site in Sweden. The site administrators estimate that half of

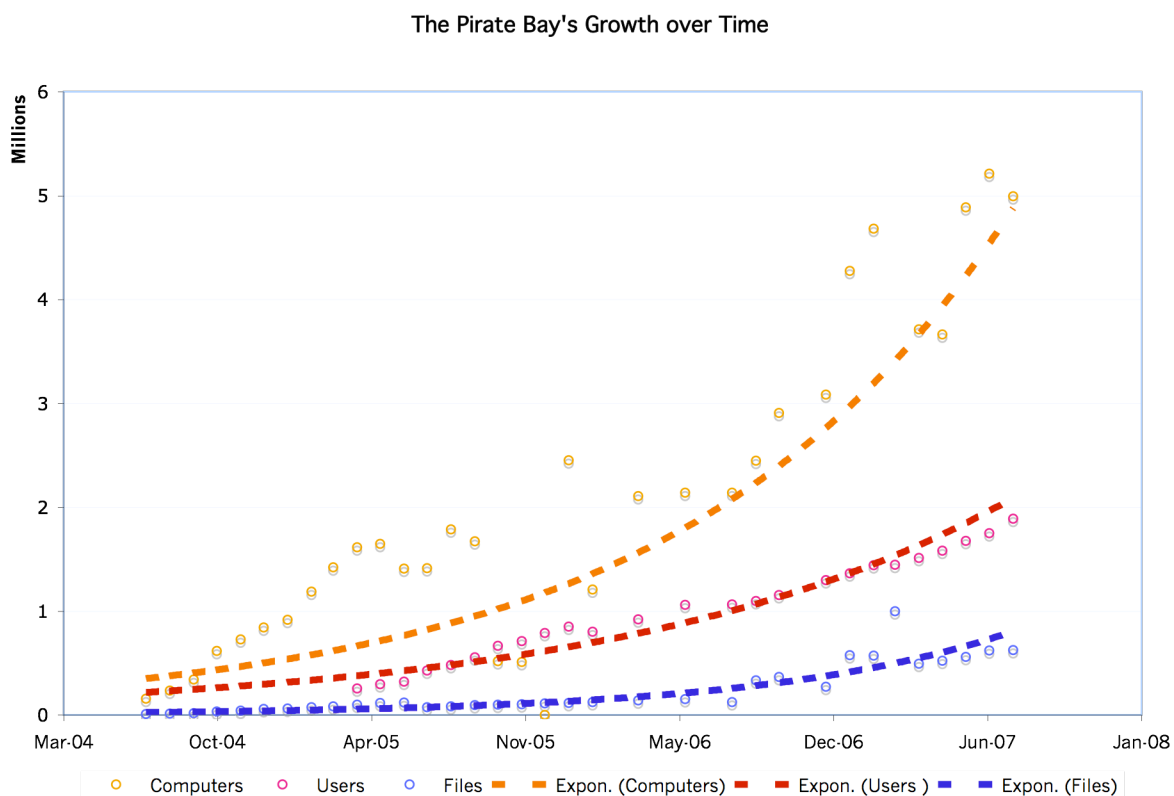


Figure 1 – Source: Archive.org

fullstory.html&cf=RT/config-neutral&slug=wnapp&date=20010305&archive=RTGAM&site=Front

³⁵ <http://www.thepiratebay.org/>, Accessed: December 3, 2007

Sweden's internet traffic flows through their trackers (Pritlove, 2006). Every month the site receives 32,799,431 unique visits. In comparison, CBS News only receives 7,650,362 monthly views ("cbsnews.com (rank 168) - Website Audience Profiles from Quantcast," 2007; "thepiratebay.org (rank 360) - Website Audience Profiles from Quantcast," 2007). To better understand the success of TPB as a political movement, however, I want to define articulation in relation to politics.

The Articulation of a Political Movement

Articulation theory rejects a single essential political actor. Laclau & Mouffe embrace the diversity of political movements and new social movements, such as TPB, as part of their work on articulation. Based on their concept of the field of discursivity – the expanse of possibilities caused by the overdetermination of all social elements – and the contingency of hegemonic power, they argue that political struggles need to be articulated and do not emanate from an essential social logic. Through a historical review of the literature on social struggle, Laclau & Mouffe argue that the overdetermination of the social prevents any one true political struggle and justifies their embrace of amorphous social movements.

Their argument implies that any political movement demands attention because it could possibly articulate a new point of struggle previously unimagined. The implication is quite refreshing in the study of political movements; rather than predicting social struggle based on essential classes, Laclau & Mouffe ask us to keep an open mind to the creative process of change. They summarize their argument as follows: “there is therefore nothing inevitable or natural in the different struggles against power; and it is necessary to explain in each case the reason for their emergence and the different modulations they

adopt” (p. 152). Unlike their lack of attention to the internet and the digital, Laclau & Mouffe thoroughly addresses political movements.

The articulation of a political struggle is a central theme in Laclau and Mouffe’s collaborative and separate work (Laclau, 1996, 2005; Laclau & Mouffe, 1987, 1993 [1985]; Mouffe, 2005b). They describe two logics that explain the ways social struggles articulate their causes: the logic of equivalence and the logic of difference. Logics of equivalence find the common meanings between elements in order to bring them together. The anti-globalization movement exemplifies this type of logic. Trade unions, environmentalists, and anarchists join under an articulation of globalization that concerns them. Logics of equivalence simplify the political landscape by bringing multiple struggles under one banner. Alternatively, logics of difference break apart discourses by identifying their conflicted meanings (Laclau & Mouffe, 1993 [1985], pp. 130-136; Laclau, 2004, pp. 69-72). Hall (2005 [1990]) describes how marginalized groups can redefine their subject positions by emphasizing how they differ from the status quo (pp. 301-306). Logics of difference complicate the political landscape by questioning existing discourses. Both logics help explain the behavior of power in society as they describe logics of collective action (Laclau & Mouffe, 1993 [1985], p. 130-136). Political articulations also involve two other elements I previously introduced: floating signifiers and empty signifiers. The former relates to logics of difference and the latter relates to logics of equivalence. I will explain what I mean by examining the articulation of a social movement.

Although political articulations simultaneously involve all four of these elements, for simplicity I will introduce them one by one. Let us begin with a hegemonic formation

with a plurality of subject positions. One subject position articulates their relation to hegemonic power as oppressive using a logic of difference (pp. 153-154). This logic creates an antagonism between the subject position and hegemony. They create a *we* and a *they* (Mouffe, 2005a, pp. 14-19). To address their relation of oppression, they define themselves as a political movement: “a type of relation whose objective is the transformation of a social relation which constructs a subject in a relationship of subordination” (p. 153). The demarcation of a political movement also involves a logic of equivalence that articulates a common bond among many different subject positions. The overdetermination of the subject means that people fall under multiple subject positions. A logic of equivalence links these different subject together based on a shared subject position that becomes a common bond across subjects (Mouffe, 2005b, pp. 182-186).

Once the political movement has defined itself, it now engages in social struggle that involves floating signifiers and empty signifiers. These two elements describe the structural features and significance of the political assemblage, and its relation of a hegemonic formation. An empty signifier refers to a nodal point within a political assemblage. In Chapter 2, I defined an empty signifier as a sign capable of being the grounds of a political movement, such as a flag or banner. The sign does not contain any meaning in itself, but concentrates the shared meanings in a common ground. Empty signifiers as a political movement grows become increasingly important as a way to express the common case of increasingly diverse social actors (Laclau, 2005, pp. 93-101). Floating signifiers refer to the weak points of a hegemonic formation that political movements try to rearticulate as part of their movement. By doing so, they reshape the hegemonic formation to their advantage and strengthen their own formation as a counter-

hegemony. If social struggle is a game of poker, floating signifiers are the chips.

We now have all the elements of a political movement. They begin with the definition of antagonism and the unification of subjects through a logic of difference and the unification of subjects through logic of difference. Once assembled the political movement engages in the production of empty signifiers and struggles to capture floating signifiers. In light of my combination of articulation theory, we can describe a political movement as an actor-network – a network of distributed agency. In the following section, I will describe TPB as a political movement using all these concepts.

The Double Articulation of the Pirate Bay

As I described in Chapter 2, articulation involves the concurrent movements of significance and structure. To stress this point, I refer to the double articulation of political movements – an articulation of significance and code as structure. TPB exemplifies a double articulation in that they act simultaneously in code and politics. I describe TPB as actor-network: a heterogeneous network of humans and non-humans. Through the course of this section, TPB refers to a singular assemblage of administrators, servers, code, and users. The group enlists both code and people in their political struggle. This assemblage provides an alternative platform for sharing information on the web. In the following section, I will outline the group's history before detailing the political movement.

The Beginning of the Pirate Bay

TPB was started in 2003 by a Swedish group known as the Piratbyrå, a member of the European anti-copyright movement (Norton, 2006). Magnus, one of the key members

of group, describes the Piratbyrå as “a cluster with fuzzy borders, a network consisting of a number of connected humans and machines; artists, hackers, activists, servers, routers and software, each approaching the question of copyright in its own manner” (Eriksson, 2006). Two of other vocal members of the organization, Rasmus Fleischer and Pelle Torsson, say, “Piratbyrå was initiated to support the free copying of culture and has today evolved into a think-tank, running a community and an information site in Swedish with news, forums, articles, guides and a shop and has to date over 60,000 members” (Rasmus Fleisher & Pelle, 2006). In addition to these activities, the group spoke at conferences and publicly about their views on copyright and piracy (Norton, 2006).

TPB spun out of the Piratbyrå after the group launched a bittorrent site. The site became so popular that Piratbyrå decided to split the site into a separate organization. They gave control to three members of the bureau: Gottfrid Svartholm (A.K.A. Anakata), Fredrik Neij (A.K.A. TiAMO) and Peter Sunde (A.K.A. brokep). All the members of the site are male and in their twenties. These three administrators work in their spare time to run the site and also publicly represent the site. Mikael Viborg, a prominent lawyer in Sweden, also provides the site with legal assistance (Norton, 2006). The site also relies on volunteers and moderators. Although the two groups no longer have any legal connections, they act as a united front against copyright with the Piratbyrå acting as a think tank and TPB enabling users to share files.

Creating an Antagonism

From the beginning, the Piratbyrå actively antagonized copyright holders. Defining a social antagonism is the first step in creating a political movement and

Piratbyrå developed by creating an antagonism with the global copyright regime that I previously described as information feudalism. The Piratbyrå name exemplifies their confrontation attitude because it means the Bureau of Piracy in Swedish and mocks the Sweden's anti-piracy bureau. The group's founders decided that if the government was to have anti-piracy bureau, it needed an opponent – namely the piracy bureau. By naming themselves as a force *for* piracy, they created opposition to all groups *against* piracy.

Piratbyrå seems keenly aware of *piracy's* history when they decided to articulate their political movement as a piracy movement. This awareness is most clear in their logo for TPB, depicted in Appendix I. It is the silhouette of a pirate ship with a cassette tape and crossbones taken from early campaigns against piracy depicted on its sails. By re-appropriating this symbol of piracy and connecting it to a pirate ship under sail, Piratbyrå tapped into an alternative set of meanings of piracy. As Land states,

after 300 years of romanticized, radical imagery, piracy and the Jolly Roger carry a loaded charge. The skull and crossbones is no longer common currency as a symbol of death but has become associated with romantic images of rebellious, free-living, autonomous groups from the idealized community of Libertia to the Hells Angels or, most recently, Captain Jack Sparrow and his crew (2007, p. 186)

By playing up piracy, Piratbyrå rearticulated piracy as a form of resistance. In doing so, they counter the morality myths about file sharing propagated by corporations that depicts pirates as villains and the copyright holders as innocent victims (Gillespie, 2007, pp. 112-125). The Pirate Bay and Piratbyrå show a remarkable act of articulation: that of taking pride in piracy and the positive effects of piracy. Neij describes a 2006 business trip to San Francisco, when, “There was a school class lined up outside a museum, a big group of eight- or nine-year-old American kids. And a bunch of them started pointing at me: ‘Hey! Pirate Bay! Cool!’” (Daly, 2007).

TPB uses these tactics to reverse public sentiment about file-sharing. Instead of

being criminals, they become underdogs against the record labels and the copyright system at large. For a generation increasingly criminalized for copyright law, the word piracy evokes the notions of pirates as romanticized rebels and outlaws battling corruption, monarchy, and imperialism. Laclau notes the potential of the underdog to tap into “a reservoir of raw anti-status-quo feelings” (p. 121).

The Piratbyrå was able to articulate their piracy message in a largely due to the popularity of TPB website. The site gave them a platform to articulate their pro-piracy message. In the following section, I want to relate their usage of code to their ability to articulate their political message.

Launching the Pirate Bay

As part of their pro-piracy campaigns, the Piratbyrå launched the Pirate Bay: a file-sharing website. At the time of launch, the site was just one of the services the Piratbyrå provided and not necessarily the most popular. As Rasmus Fleischer, co-founder of Piratbyrå states, “it started off as just a little part of the site. Our forum was more important. Even the links were more important than the [torrent] tracker” (Daly, 2007). One could argue the launch is a case of accidental tactical media. The site never set out to become one of the most prominent torrent trackers in the world.

The Piratbyrå took advantage of the modular elements of web2.0 to patch together a torrent tracker. They used many open protocols, free software, and public code languages to start the website and assembled many pre-existing modular elements within web2.0 to create a file-sharing site. I illustrate the technical *black box* of TPB in Appendix II. The layered model depicts the various technical actors and their relationships. Of these elements, I suggest bittorrent is the best example of their code politics.

Despite their causal attitude, the Piratbyrå's decision to use the bittorrent was most likely a tactical choice given the popularity of other file-sharing protocols in 2003. The protocol reflects their politics – a double articulation. In a textbook example of protocological control (Galloway, 2004), bittorrent requires peers to upload in proportion to how much they download (for a detailed case study of bit torrent, see Ripeanu, Mowbray, Andrade, & Lima, 2006). Inscribed in the protocol's code is a rule that a user can only download as fast as they upload. Users who disobey have their connection throttled ("BitTorrent.org » For Developers » Protocol Specification," 2006). As the pool of user download increases, so too does the pool of uploaders. In this way, a bittorrent swarm scales as popularity increases. Bittorrent requires people to share and the Piratbyrå encourages people to share.

To keep up with the demand the site runs over thirty servers, five dedicated to running the website, and sixteen servers facilitating peer-to-peer sharing ("The Pirate Bay - Technical Specs!," 2007). Their servers all run free software using Linux as an operating system, Opentracker to track torrents, and Lighttpd as a web server ("The Pirate Bay - Wikipedia, the free encyclopedia," 2007). Users upload and download through the popular open-source file-sharing protocol bittorrent.

While other sites have gone private to cut the amount of traffic, TPB has assembled a significant infrastructure to keep up with public demand. Open platforms, similar to Drupal, play a key role in keeping the site public. Typically, server software costs as much as, if not more than, the cost of the hardware and using free software allows TPB to run a site without incurring huge costs of buying software or illegally running pirated copies. In addition, each server responds to 10,000 to 20,000 connections per second per

server. The administrators modified much of the software's code to keep up with this demand; something that would not be possible without open code software (Pritlove, 2006).

Given the massive amounts of traffic, the site consumes significant bandwidth and costs a substantial amount of money to operate. TPB has three revenue streams: advertising, donations, and t-shirts. The site administrators report that the money is spent on bandwidth and any money left over is spent on new servers. Their t-shirt business also appears quite lucrative, but TPB does not release its sales data (B. Johnson, 2007). TPB has also received significant donations from two Swedish politicians. The first donation came from the winner of a popular reality TV show for young politicians. He gave TPB a quarter of his prize money, \$4,656 USD. The other donation came from an extreme right-wing Swedish entrepreneur Carl Lundström. The money helped the administrators purchase TPB's early servers ("The Pirate Bay - Wikipedia, the free encyclopedia," 2007). Only a monthly basis, advertising pays most of the bandwidth and server maintenance bills. Banner advertising appears on all the pages. Advertising revenue is not public and, as I will explore later, a potential black mark on TPB's reputation. Advertising brings in an estimated \$84,000 USD per month (Norton, 2006).³⁶

TPB success in running a website that reaches million demonstrates the power in using the web2.0 platform as part of the campaign. The site could not support such

³⁶ The media frequently describe TPB as profiteers who profit from advertising on the site. Such a claim ignores the administrators' backgrounds and fails to explain why they would make such a personal investment in the site. Peter says, "We also have our background in the Bureau of Piracy originally... If we didn't believe in [running TPB], we wouldn't have done it" (Jones, 2007). All my sources come from the numerous media appearances and blog posts from the administrators. They have taken a very public stance and expended tremendous effort to spark a public debate on copyright. Their actions have led to Swedish authorities with 'assisting copyright infringement' and they currently await trial before the Swedish courts (<http://torrentfreak.com/pirate-bay-team-charged-080131/>).

participation in other mediums – using code is much cheaper. Online advertising is itself modular and easily embedded in a platform. Articulating in web2.0 is cheaper and generates a revenue stream. Beyond the advantages in cost, the platform also provides a very different experience for the public – they do not simply consume TPB’s message, they become part of it.

Only after the public began to share files on the site did the administrators recognize the tactical possibilities of the tracker (Daly, 2007). While they had been actively advocating piracy before TPB, they could now, through the tracker and its code, operationalize piracy by giving thousands, and eventually millions, of people a way to share information freely. As Anakata states, “I see The Pirate Bay as a sort of organized civil disobedience to force the change of current copyright laws and the copyright climate” (Johnsen, Christensen, & Moltke, 2007).

TPB articulates the site as an empty signifier capable of being the basis of a political movement. The site became a nodal point for the organization and captured became a way to connect to the public. By giving the public a service through their website, TPB gave the public something to care about. The name ‘The Pirate Bay’ and its logo become the signifier capable of presenting this new meaning of file-sharing³⁷ and denotes a shelter

³⁷ TPB has a number of challenges to its identity. These challenges show the limits of TPB’s present identity. I only have time to briefly touch upon the issues of sexism and profiteering, but I think these concerns warrant some future discussion. The lack of financial transparencies from these revenues stream has somewhat tarnished the reputation of TPB. As John Kennedy, Chairman & CEO of the International Federation of the Phonographic Industry, says, “the Pirate Bay, one of the best-known names in digital music piracy, sells one-day advertisements on its site for 120,000, while passing itself off as an anti-establishment champion of ‘free music’” (IFPI, 2006, p. 3). They have also tried to dispel the image that they are profiteers capitalizing on piracy to generate huge revenues from advertising. As Gottfrid says, “it would be a very bad project to be in it to make money, considering how great the risks are” (Jones, 2007). The administrators stress they do not profit off the site and live off daily jobs (B. Johnson, 2007; “The Pirate Bay - Wikipedia, the free encyclopedia,” 2007). However, their alleged profits diminish their reputation and might tear their populist message apart.

TPB also struggles to include women into the boy’s club of computer culture. Part of the problem

or haven for pirates. Symbolically, TPB acts as a *temporary autonomous zone* (Bey, 2001) and the name and logo provide a shelter for dissent against the digital enclosure. Under its banner a multitude of democratic demands can unite. Their demands include: re-mix culture, free culture, free speech, anti-capitalism, pro-sharing, user-generated content, freedom, and privacy. These symbols would not be possible without the support of their website which provides the public an open platform to share files. The website connects different subjects based on their shared usage of the platform. In this way, the website acts as a nodal point in the organization.

This political articulation of an empty signifier also occurred in developing the website as an empty platform – a concept I developed in Chapter 3. Again, this is an example of the double articulation of TPB. The administrators have made the site as open as possible. TPB clearly state they do not censor any of the torrents on their server. Peter says, “we have created an empty site where the only condition was that you cannot upload something where content doesn’t match the description, or if it blatantly is criminal in Sweden” (Jones, 2007). Elsewhere he says, “we have a strong policy at TPB that we do not censor anything” (Pritlove, 2006). Part of their reason to not censor files comes their careful legal maneuvering to stay online. If TPB shows a technical ability to censor copyrighted works or an interest in doing so, then are basically admitting their guilt. However, this legal defense is weak, at best, and ignores the politics of this

revolves around demographics. In Canada, only 23.4% of women download music off peer-to-peer networks where 35.1% of men download music off peer-to-peer networks (Andersen & Frenz, 2007, p. 47). However, it would be wrong to assume that all the problems of sexism relate to the masculinity of computer. TPB actively shares pornography and does little to justify this traffic in their political arguments. Further, all the public faces of TPB are male and there has been little attention to women. Sunde states, “It’s really sad that this is how it is portrayed, but it’s not so. Just like in media in general, women aren’t as visible as men. There are very many women using the Pirate Bay and there are very many women who are members of the Bureau of Piracy. It’s only sad that they aren’t promoted enough.” Although, women might be involved in the project behind the scenes, I have no evidence to support this speculation.

decision. TPB wants the open exchange of information, any information. The platform operationalizes their views on piracy by eroding the applicability and utility of copyright.

In comparison to other piracy applications or organizations, TPB is far more open and accessible. In the sea of online piracy, TPB occupies a public, but marginal position. The Motion Pictures Association of America depicts computer piracy as a pyramid seen in Appendix IV. This model corresponds with the consensus that the online piracy has an extremely hierarchical structure. Most illegal copies originate from elite and cloaked groups of suppliers, not from the public. These suppliers upload their copies to *top-sites*, (private file servers with high-speed connections), that distribute copies to the elusive *warez scene*. Access to the scene is restricted and to gain entry one has to first build a reputation. Simply put, the public is not allowed. Eventually, files trickle down to publicly accessible peer-to-peer networks that *facilitate* file-sharing amongst the public. Napster is the most-famous of these facilitators (Howe, 2005)

The early pirate boards were some of the first sites in this *warez scene*. For all the lofty claims of the hacker ethic, pirate boards kept information under as much, if not more, control as copyright holders. Information was free, but only to a technocratic elite (Sterling, 1992). TPB recognize the contradiction in pirate boards and the hacker ethic. As Peter says, “I was also part of the BBS movement, but personally I see it as hypocritical. Why should some but allowed to copy and others not” (Jones, 2007)? This statement reflects why I believe TPB has become so popular. The administrators want to make piracy public and see private trackers or ratio trackers as discriminatory to people who do not have high-speed connections (SubDemon Podcast, 2008). Instead, users who share files on the TPB do so publicly and contribute to a common archive of data. The

servers and code work to keep the archive accessible and populated. The servers of the site have been *delegated* the task of helping users share and keep piracy public (Latour, 1999, pp. 185-190).

Keeping Piracy Public

What type of service does the Pirate Bay actually provide? Does it host illegal files on their server? No. Does it produce illegal copies of digital works by cracking software or theft? No. Their servers co-ordinate the sharing of files between people and their website acts like a search engine to find shared files (Pritlove, 2006). The TPB's server co-ordinates my exchanges with other peers, but not actually trading any files. TPB coordinates and indexes swarms of people sharing files using the open-source bittorrent protocol: a decentralized peer-to-peer file-sharing protocol. Bittorrent swarms depend on meta-data indexes, known as *torrent* files that catalogue the contents of files and manage communication between people sharing those files. TPB only deals in these torrents files and, so, they do not host any content. They run a search engine to find *torrents* and a tracker that follows *who* is sharing *what* files.

Returning to some of the language developed in Chapter 3, TPB lowers the pre-inscription of using bittorrent and prescribes me the ability to freely share files. When I navigate to the site through my browser, a page similar to Google greets me. The front page has search form, some links and the logo of the Pirate Bay that changes, like Google's logo, to reflect a timely event or idea. From here, I can either publicize that I am sharing a file by uploading a torrent file I have generated or search the index of shared torrents to find and join another group of people sharing files. I either download or upload a torrent file. In each case, I need to run another open-source program that will

interpret the torrent file and either begin sharing my file or connect me to other people sharing that file.

All the torrents on the site result from users and the site is full of qualified as user-contributed content. After registering for an account, users can upload their own torrents. People can upload any file they want. All this activity begs the question, what files do people share? Illegal copies of digital goods are the most popular on the site. The site divides content into: **audio, video, applications, games, and other**. Users who register for a free account can also access pornography. Pornography is not visible to unregistered users.³⁸ All the files listed in the top 100 files on TPB on 25 November 2007 were illegal copies of software, audio, and videos³⁹. While the numbers are not publicly available, one can safely assume that the majority of files shared infringe copyright; however, Rasmus points out that focusing on just the top files ignores the multitude of other, lesser files being shared on the site that do not infringe on copyright holders' rights (Rasmus Fleisher & Palle, 2006).

As a repository of user-generated content, the site has been used in many interesting ways. Often the site has been used to circumvent censorship. To date, TPB has circulated leaked documents from the Media Defender anti-piracy group⁴⁰, the RIAA⁴¹, the Church of Scientology⁴², and mirrored documents from Wikileaks⁴³. In his description of the

³⁸ The complete categorization of content is: **audio** (music, audio books, sound clips, other), **video** (movies, movies dvdr, music videos, movie clips, tv shows, handheld, other), **applications** (windows, mac, unix, handheld, other os), **games** (pc, mac, ps2, xbox360, wii, handheld, other), **porn** (movies, movies dvdr, pictures, games, other), and **other** (e-books, comics, pictures, covers, other).

³⁹ <http://thepiratebay.org/top>, Accessed: 25 November 2007

⁴⁰ See http://thepiratebay.org/tor/3819501/Media_Defender_E-Mails_

⁴¹ See http://thepiratebay.org/tor/4034469/RIAA_Training_Video_Prosecution_of_Music_Piracy and <http://blog.wired.com/music/2008/02/riaa-training-v.html>

⁴² See

networked public sphere, Benkler cites peer-to-peer networks as principal means of keeping information public (Benkler, 2006, pp. 225-233).

In the bigger picture, the tracker contributes to the various tactics the public has available to them on web2.0. Firstly, the open tracker operationalizes the idea of the long tail and the *grey commons* by enabling peer-to-peer file sharing. Any file is sharable on the site. As a spatial form, TPB creates an information commons that is free to enter and exit with little limits on what goods can circulate. Second, the platform gives users the capacity to share file. The popularity of the site demonstrates willing of people to engage in file sharing. Many sites provide similar capacities, so what makes TPB unique? They articulate themselves as a defender of these capacities and spatial forms. They act as a figurehead that tries to stand up for file sharing. In the following section, I want to return to the group's articulation of file sharing to further explore their articulation of a political movement.

Expressing Piracy as a Political Movement

The usage of code to facilitate mass piracy allows Piratbyrån and TPB to rearticulate the floating signifier of file-sharing. In short, TPB built a software platform that gathered an audience that listened to their political platform. To do so, they suture file-sharing into a discourse related to copying, human communication, the commons, remix culture, and free speech. First, TPB defines file-sharing and piracy as copying and sharing, not theft, or taking. File-sharing occurs in a digital environment where one

http://thepiratebay.org/tor/4001053/Tom_Cruise_Church_of_Scientology_Banned_Videos_Anonymous
⁴³ See http://thepiratebay.org/tor/4034919/Wikileaks.org_mirror_archive and
http://www.infoworld.com/archives/emailPrint.jsp?R=printThis&A=http://weblog.infoworld.com/robertxcringely/archives/2008/02/wikileaks_money.html

makes copies data, but does not take copies away from others. Moving to copying and sharing as a nodal point of copying and sharing excludes many of the negative meanings the copyright lobby attaches to file-sharing and piracy and allows naturalizes file-sharing. They argue copying is part of digital communication, people naturally copy when using computer, and copyright holders do not understand this basic fact (Andersson, 2007; Daly, 2007; B. Johnson, 2007; Jones, 2007; Norton, 2006; Pritlove, 2006; SubDemon Podcast, 2008).

From this point the administrators of TPB do not elaborate their position; however, their sister organization, the Piratbyrå, continues the argument. Third, the Piratbyrå follows a long-standing tradition linking communications to a commons (Williams, 1988, pp. 72-73). File-sharing becomes a commons of shared knowledge. As I mentioned in Chapter 1, The Piratbyrå differs in its argument from other ‘internet as commons’ perspectives. They describe the site and file-sharing as a *grey commons*, something much greater than the *legal commons* (Sengupta, 2006). The *grey* adjective describes the legal ambiguity of content in the commons that ranges. “between the penguin white of a creative commons license and the pitch black of a zero day blockbuster release” (Rasmus Fleisher, 2006). The grey commons is a place where “a space of production, of inspiration, obtaining, downloading – remixing and reinserting distribution and up-downloading of data” (Rasmus Fleisher & Palle, 2006).

In a final move, the grey commons becomes the site for remix culture and free speech. The idea of a grey commons comes from the successful release of the Grey Album using online file-sharing. The hip-hop remix album illegally sampled the Beatles and, in response, the music industry outlawed the work. Despite the copyright

infringement, fans of the album shared the album online. Without the ability to share files a cultural work like the Grey Album would not exist (Rasmus Fleisher & Palle, 2006). Without the ability to freely communicate, popular culture is lost and only hegemonic-affiliated content can circulate. Magnus of the Piratbyrå suggests “the copyfight is about making room for the unforeseeable” (Eriksson, 2006).

Keeping the Antagonism Alive

The website also became a platform to continue antagonizing the copyright industries. Their *Legal Threats* page remains their most famous tactics. TPB frequently receives request to takedown content uploaded by its users; rather than obeying the requests, the administrators post the letters with humorous and rude response to the website. I have included an example in Appendix IV. Their responses engage in discursive tactics that widen their antagonism with the copyright holders and position TPB as a defender of file sharing because they could easily give up to authorities. Instead, they position themselves between copyright and their users. They defend their users by mocking and ridiculing any requests to remove content.

The Motion Picture Association of America (MPAA) picked up on this activity when they say TPB “publicly ridiculed copyright holders and taunted law enforcement for years claiming immunity to copyright laws” (MPAA, 2006). The administrators of the site describe the page as their most overt political component and their contribution to the anti-copyright movement (Norton, 2006). The groups has become a figurehead of the piracy movement thanks to their continued defiance of the threats of the culture industry (Norton, 2006).

In addition to the legal mockery, TPB has also symbolically brought back a

shutdown tracker as a sign of the resilience of file-sharing. In 22 August 2007, TPB administrators re-launched the once-popular SuprNova that I mentioned in my introduction. The takedown of Suprnova was a major blow to online piracy and one of the first takedowns of a torrent site. The ex-administrator decided to give the domain name to TPB, who re-launched the site on their own servers. As one poster on The Pirate Bay forums stated, the site “was bought back as a statement: a big fuck you to the people that want things to stay the same”⁴⁴. The restoration of a tracker is a belittling act to an industry bent on reminding “pirates all over the world that there are no safe harbors for internet copyright thieves” (MPAA, 2006)

TPB has launched a number of different campaigns to mock Hollywood, including an attempt to buy an autonomous oil platform in the Atlantic and found a nation, and taking over a domain of the copyright advocacy group, the International Federation of the Phonographic Industry.

By targeting TPB, security groups are not attacking the source of piracy, but the public face of piracy. Even if the site is shut down tomorrow, the *warez scene* would continue to operate in the shadows. TPB seems keenly aware that they act as a nodal point in the digital enclosure and have used their position to future politicize and publicize piracy. The more the copyright industries attempt to take down the site, the greater TPB’s power as a symbol of the piracy movement.

Despite their attitude, TPB face numerous legal and structural challenges. TPB’s decision to found their movement on a web2.0 platform has become a great ally. At no time is this clearer than TPB’s takedown in 2006. In the following section, I want to

⁴⁴ <http://suprbay.org/showthread.php?t=2363&page=2>, Accessed: Dec. 3, 2007

briefly introduce this event before entering into a discussion of how code helps make TPB resilient to take down attacks.

Resiliency of the Platform

The bulk of TPB legal problems began in May of 2006 when police forces raided TPB servers confiscating over fifteen servers and arresting three people. Soon after the takedown, the Motion Pictures Association of America (MPAA) released a statement celebrating the takedown of the site (MPAA, 2006). In recent months, reports indicate that the takedown occurred after international groups, specifically the MPAA, pressured the Swedish government and police into action (Daly, 2007). Three days later, TPB was back online and everyone arrested was released. Where other site administrators have backed down after legal pressure, the takedown emboldened TPB administrators to re-launch the site. How could this be possible? I argue the tactical advantages of a web2.0 played a role.

From all accounts, the police did not charge the administrators with any crimes and could not hold the administrators in jail. By using open-source software and not hosting any pirated software on the server, TPB keeps the debate focused on the legality of file sharing. The police could easily shut down the site if TPB used pirated software to run their servers or depended on an application, like Napster or Kazaa, clearly designed for piracy. Thus, these open platforms give TPB legitimate grounds to pursue their public campaign about file sharing. Once free, Sunde and the other administrators coordinated with allies globally and re-launched the tracker.

The site also benefit from the ambiguity about file-sharing law. TPB argues that the site is legal because it only acts as a torrent search engine and tracker. The site exists

in a grey area of Swedish law that has yet to make a ruling on the legality of torrent sites. TPB does not host illegal files, but instead host their meta-data. The site, to the administrators, is just a search engine that does not censor any of the files uploaded and, as a result of this policy, includes pirated works (Pritlove, 2006). The site is often compared to Google⁴⁵. As Fleisher (2008) says,

both Google and The Pirate Bay are essentially search engines. As is now repeatedly pointed out in the Swedish debate, also Google is indexing and linking pirated files (as well as being a good place to search for torrent files). In addition, Google Image Search is hosting millions of copyrighted artworks on their servers, showing them for free along advertisements without any given permission. Yet a police raid against Google's server halls seems unthinkable today.

Presently, TPB is before the Swedish courts defending themselves against the legal enclosures that would outlaw their political project.

Finally, the very nature of web2.0 aided the group. In the case of the raid, the police confiscated all of TPB servers. Without these servers, the website and tracker could not exist. Yet, the site was never just one server, but a collection of servers running code that TPB had backed up. With the support of their users, TPB restored their back-ups to servers running in the Netherlands. Not only had they re-created their service, but they had also moved legal jurisdictions ("The Pirate Bay - Wikipedia, the free encyclopedia," 2007). Today, TPB claims they have sent servers all over the world to

⁴⁵ The *search-engine defense* is not as solid as TPB administrators might hope. The cases of other tracker shut-downs also do not bode well for TPB. Take the example of the tracker Suprnova. As one of the first torrent search engines on the internet, the site had become a major hub in file-sharing. The site shut down without going to court. Instead, the administrator decided to close the site after having his server confiscated by the police. He felt closing the site was in his best interest. To date, the legal pressures have closed a least 9 tracker sites: Finreactor, Suprnova, Lokitorrents, Elitetorrents, Newnova, Demonoid, Oink, and Quebec Torrents ("BitTorrent (protocol) - Wikipedia, the free encyclopedia," 2007; "Legal issues with BitTorrent - Wikipedia, the free encyclopedia," 2007; "QuebecTorrent Lawsuit: Backdoor to Banning All Canadian BitTorrent Sites? | TorrentFreak," 2007). In the case of Finreactor, the courts rejected the defense's claim that the site was not responsible for the copyright infringement because they knew pirated goods were being shared and they did nothing to prevent piracy (Aughton, 2006).

make sure the site runs in a variety of different locations. To shut down all these servers would require a massive international legal operation. Further, TPB claim they do not know where the locations of the servers because they sent out the machines by proxy. The person they gave the machine to has to give the machine to someone else. Despite their physical distance, the servers join in virtual space to create the Pirate Bay platform ("The Pirate Bay - Wikipedia, the free encyclopedia," 2007).

The future of TPB remains uncertain. On 11 December 2007, the Swedish authorities filed charges against the site's administrator, but these charges have not been made public ("Police Closes Pirate Bay Investigation, Trial Awaits | TorrentFreak," 2007). All this activity buys the site time to build enough popular support to make piracy a political question. As Neij says, "The Pirate Bay will outlive its usefulness" (Norton, 2006). The question remains as to whether the usefulness of the site will be spent or misspent.

A Popular Horizon

Peter and Rasmus describe sharing as natural and attempts to stop sharing unnatural (Andersson, 2007; B. Johnson, 2007; Norton, 2006). People are naturally inclined to share, while the copyright industries want to keep their fragile monopoly and prevent that. In a scene dominated by pseudonyms and elite circles, TPB make file-sharing public and debate copyright publicly. The expansion of copyright law into everyday life criminalizes large segments population into what Tehranian calls an *infringement nation* (Tehranian, 2007). Coupled with the ambiguous role of piracy in society (Bhattacharjee et al., 2006; Gopal & Sanders, 2000; Shin et al., 2004) it suggests that the politics of TPB have rearticulated the issue of copyright into a broader social issue.

Their tactics have been moderately successful. On 13 February 2006, the Swedish authorities approved the 1,500 handwritten signatures necessary to add the Piratpartiet or the Pirate Party to the ballot. The founder, Rickard Falkvinge, only has a loose affiliation with TPB, but shares their concerns about copyright. He has been able to mobilize widespread support in Sweden. After the police raid, the party was instrumental in organizing rallies in Stockholm and Gothenburg to support the site. The protests attracted approximately 500-600 people at the Stockholm protest and 300 people at the Gothenburg protest. Support for the party continued right up until the Swedish general election where they captured .63% of the popular vote. Although this showing was not enough to gain a seat in the house, the party continues to build and has begun assisting fledgling pirate parties in other countries ("Pirate Party - Wikipedia, the free encyclopedia," 2007). In recent months, mainstream Swedish political parties have taken-up the file-sharing issue. The European Green and the European Free Alliance launched a campaign called "I wouldn't steal" in an attempt to distinguish piracy from theft ("The Pirate Bay and Filesharers Backed by Swedish Politicians | TorrentFreak," 2008). These results show that the Pirate Party might be the first step toward bringing the opposition to the digital enclosure off the computer screen and onto the streets.

Conclusion

In 1998, Wrey questioned the effectiveness of extraparliamentarian direct action Net politics, that he calls hacktivism, as a political tactic. He concluded:

If the desired goal of hacktivism is to draw attention to particular issues by engaging in actions that are unusual and will attract some degree of media coverage, then effectiveness can be seen as being high. If, however, effectiveness is measured in terms of assessing the actions ability to be a catalyst for fomenting a more profound mobilization of people, then probably these new techniques are not effective. This distinction then, perhaps, is important. Hacktivism is not likely to be an organizing tool and the end result of hacktivity is not likely

to be an increase in the ranks of the disaffected. Rather hacktivism appears to be a means to augment or supplement existing organizing efforts, a way to make some noise and focus attention (Wrey, 1998)

For Wrey, hacktivism is a spotlight, not a banner. It is a slight of hand, but nothing more politically significant. Ten years later, we can reconsider his conclusions about Net politics in light of TPB. Certainly, TPB attracts public attention just as described by Wrey. TPB is a central figure in the fight against copyright. In addition to the spotlight, TPB has *mobilized people* to protest in the streets and to engage in civil disobedience everyday when sharing files. Importantly, the case demonstrates how a group uses to code to support certain human practices. The case pushes past Wrey's spotlight model toward an understanding of how code creates social structures that allow and facilitate certain political mobilizations, such as a resistance to digital enclosure.

In light of its success, we should consider TPB tactics and its contribution to this thesis. As another example of articulation, TPB demonstrates the effectiveness and the capacity of double articulation as a means to understand the construction of a political movement. Through this chapter, I have developed on Laclau & Mouffe traditional approach to articulation by better integrating code in the act of articulation, I captured both sides of the TPB by understanding its code and politics.

I have argued that TPB is double articulation of a political movement. By that, I mean that the group uses its code as a political platform and visa versa. The two aspects of the group cannot be separated. The success of the group depends on these two aspects. The Pirate Bay has created a vast grey commons using their bittorrent tracker and website. Millions of people use the site to share files. TPB works to antagonize copyright holders and defend its users. In doing so, they have become a figurehead of a file sharing movement. Their actions have articulated the issue and have resulted in protests in the

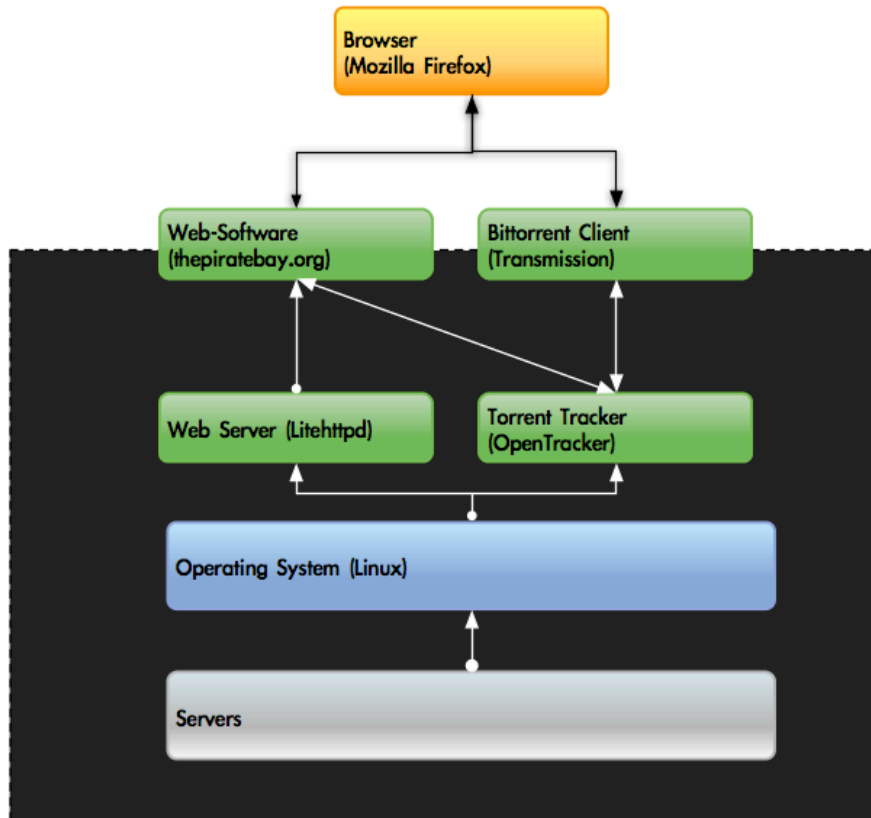
streets and some political mobilization. Within web2.0, TPB acts as an important alternative structuration that cannot be ignored. Without the groups support of file sharing in their code and their politics, the digital enclosure would creep ever so closer.

Appendix I



Source: <http://web.archive.org/web/20050906203956/http://thepiratebay.org/>

Appendix II



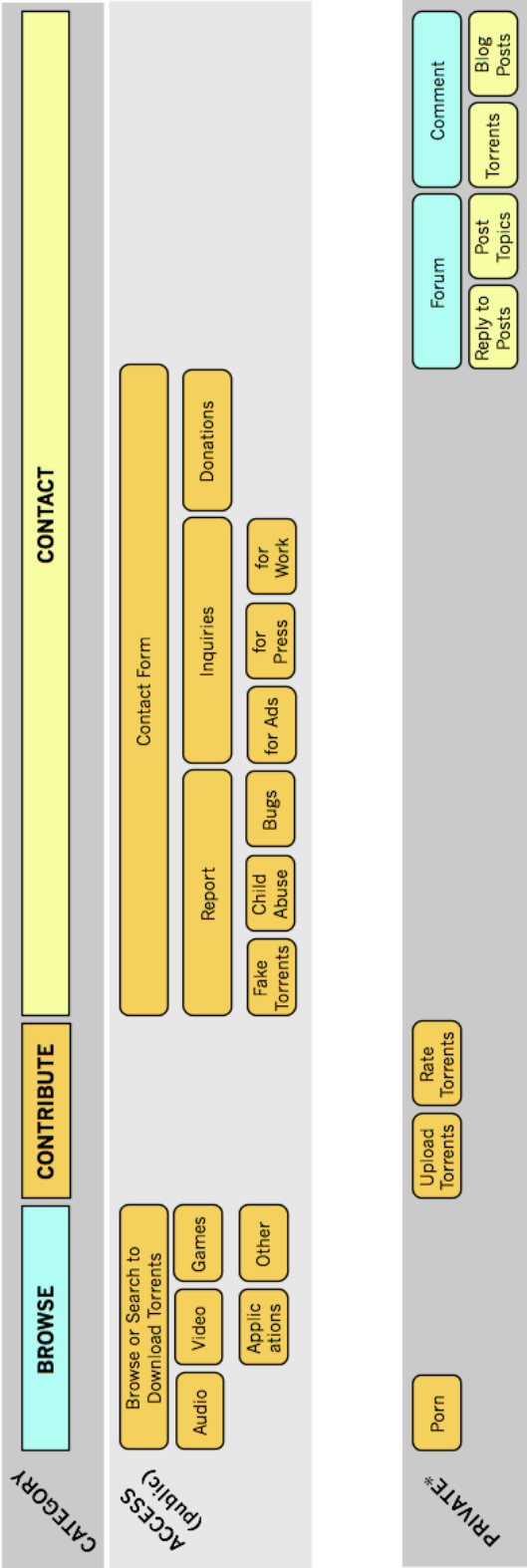
Legend

← Information Flow →

Blackbox



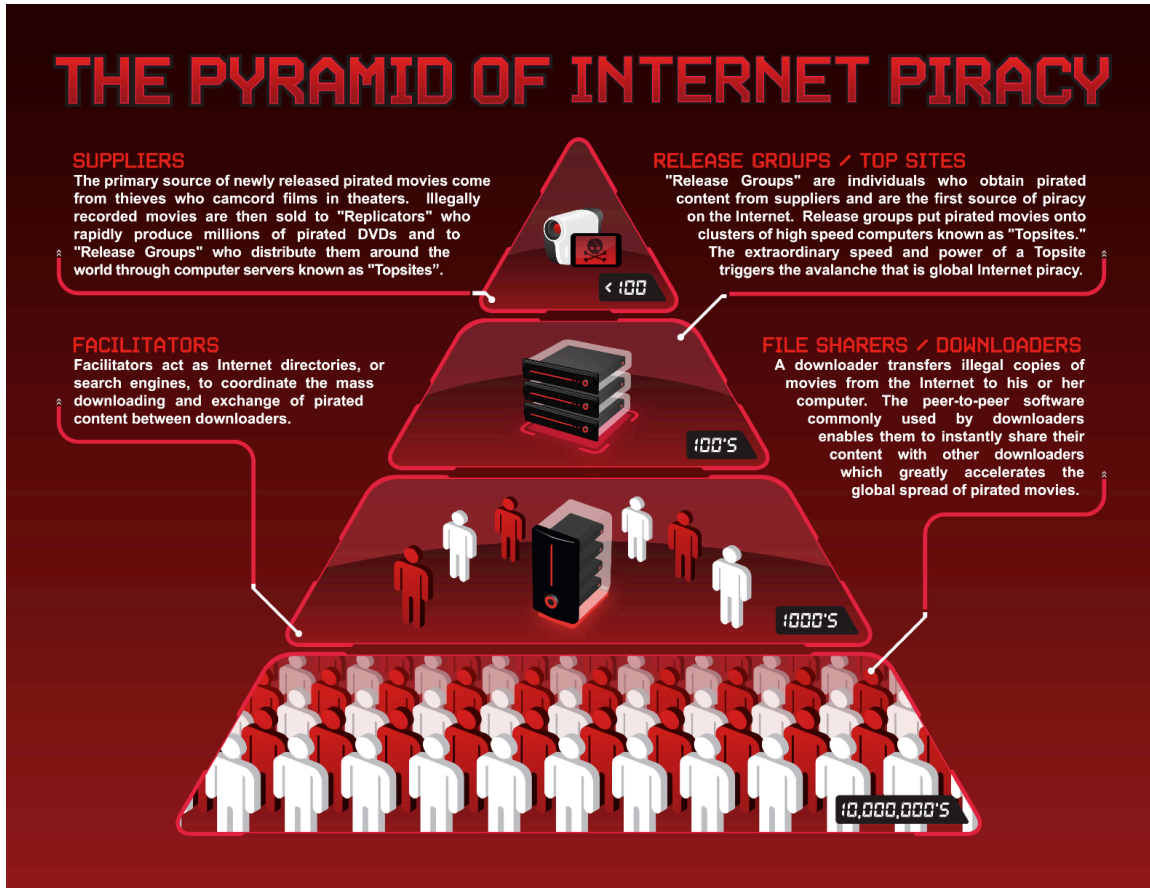
TPB Interface Map



* Requires User Account

Source: ThePirateBay.org Viewed: 22 February 2008 Created by: Fenwick McKeivey

Appendix IV



Appendix V

Source: http://static.thepiratebay.org/ea_response.txt

From anakata_anakata.hack.se Mon Sep 13 07:20:31 2004
Date: Mon, 13 Sep 2004 07:19:36 -0100 (GMT)
From: anakata
To: Piracy - Online <Piracy-Online@ea.com>
Subject: Re: Copyright Infringement

On Tue, 14 Sep 2004, Piracy - Online wrote:

> September 14, 2004
>
> SENT VIA E-MAIL
>
> Fredrik Neij
> PRQ
> Box 1206
> Stockholm, Sweden 11479
>
>
> Re: Electronic Arts Trademark and Copyright
> Infringement Notice
>
>
> Dear Mr. Neij:
>
> It has been brought to the attention of Electronic Arts Inc. ("EA") that
> the website <http://www.piratebay.org> with the IP addresses of
> 217.75.120.115, 217.75.120.116, 217.75.120.118 is conducting
> unauthorized activities with respect to EA's copyrighted software, The
> Sims 2. The aforementioned website is offering and distributing
> bittorrent seeds for an unauthorized downloadable version of this EA
> game.
>
> The infringing material may be found at:
>
> <http://www.piratebay.org/download.php/3238103/Sims%202.torrent>
>
> http://www.piratebay.org/download.php/3238222/The_Sims2_AlcoholClone-CLO
> NEGAME_Full.Release_%28exclusive_for_trackerwww.prq.to%29.torrent
>

Hello and thank you for contacting us. We have shut down the website in question.

Oh wait, just kidding. We haven't, since the site in question is fully legal. Unlike certain other countries, such as the one you're in, we have sane copyright laws here. But we also have polar bears roaming the streets and attacking people :-{.

> This unauthorized activity with respect to the distribution of EA's
> software products constitutes infringement of EA's intellectual property
> rights. EA enforces its intellectual property rights very aggressively
> by using every legal option available.

Please don't sue us right now, our lawyer is passed out in an alley from too much moonshine, so please atleast wait until he's found and doesn't have a huge hangover..

>
> As you are listed as the registrant for this website, EA demands that
> you immediately and permanently disable access to the aforementioned
> bittorrent seeds for The Sims 2 and any in the future.

You're free to demand anything you want. So are we. We demand that you cease and desist sending letters like this, since they're frivolous and meaningless. Where should I send the bill for the consumed disk space and bandwidth?

> Thank you for your cooperation. If you have any questions concerning
> this matter, please contact us via e-mail at:
> piracy-online@ea.com.

>
>
> Regards,
>
> EA Law - IP Enforcement
> Electronic Arts Inc.
> piracy-online@ea.com <<mailto:piracy2@ea.com>>

Thank you for your entertainment. As with all other threats, we will publish this one on <http://static.thepiratebay.org/legal/>

//anakata

Chapter 5 - Conclusion

My thesis explores the code politics of web2.0 through the case of Drupal and the Pirate Bay. At the end of my thesis, let me return to a very obvious examples of code politics to justify web2.0's political significance. Although Drupal and the Pirate Bay clearly demonstrate how coded structures have political significance, I want to finish with an everyday example that most Canadians find important, Facebook

When I began using Facebook, I was not aware of the privacy concerns. Once discovered, I posted a note linking to a page where I learned about the issue. The note appeared on my profile page as any other note I had posted. A few days later, however, it disappeared. I have not yet uncovered the reason for this unexplained disappearance. I have posted subsequent notes without any problems, and therefore, I wonder if a Facebook manager deliberately removed the note. While this questioning may border on being overly suspicious, it leads me to question our capacities with digital environments. When I use Facebook, I know I agreed to certain rules and laws. I know because I saw them scroll past as I read my license agreement, but I did not know how these laws manifest in Facebook's code. Have Facebook managers built in a way to track content subversive to their business? I will never know because its code never declares its operation nor do I have any recourse to understand its operation. These structural dimensions of code concern me.

To my concerns my friends reply, "Just don't use Facebook; no one is forcing you to be there." True, I do not have to participate in Facebook, but in opting out, I lose certain capacities. Bigge (2007) argues there is cast to being anti-social in an age of social network – either we choose "the constant, self-generated surveillance of the type ... or

the self-negotiation (“You don’t exist”) that social network avoidance entails” (Bigge, 2006). My experience with Facebook speaks to the general trend in web2.0 that I described in Chapter 1. Web2.0 has been referred to as social media or social software. My decision to participate or not participate in web2.0 at large has social, and as I have argued, political consequences. Different structures on web2.0 have different social and political configurations that I negotiate when I choose to use a platform like Facebook.

In Chapter 1, I described the different structurings of web2.0. Changes in the web allow the public to participate and act on the web in new and political ways. Web2.0 has been highly celebrated as a new social force, but proponents tend to obfuscate the distinction between commercial and civil society implementations of web2.0. To capture the difference structurings of web2.0, I introduced the digital enclosure. The term guided my literature review. I suggested that two general forces participated in the construction of web2.0: commonists who try to maintain the web as an information commons and corporations who try to deploy market logics in a digital environment. Bigge’s description of a social network acts as a capitalist enclosure, one that requires us to agree to surveillance to pay for the *free* service.

The original literature on the digital enclosure argued that these processes occurred with law and policy, discourse and public opinion, and code. I argued that web2.0 required us to rethink how code function in the equation. Code needs attention because it constitutes digital activity. It is the structure and the materiality of the digital. The activities of humans and non-humans in web2.0 occur in code. Almost like a fish in water, we overlook code and its structuration capacities. These oversights have consequences for power and resistance in society.

We should not have trouble imagining a web where digital code restricts our capacities. The mobile phone exemplifies such a digital enclosure. Without paying for costly data rates and fancy phones, people cannot use their wireless connectivity for anything other than to download ringtones or mobile games. That is a deliberate restriction by our mobile service providers despite the possibility for this to happen. Service providers wall off many of the uses of mobile phones, like the mobile internet, so we pay-per use. I give this example not to argue about the problems with mobile phones or to argue about the oppressiveness of technology, but to emphasize the fragility of digital environments. Mobile phones are a parable to what could happen to the web if a digital enclosure succeeds.

Code not only constitutes power structures, but also alternative counter-hegemonic structures. In contrast to these restrictive forces, web2.0 also involves a movement of participatory culture, long tails, and digital commons. These ideas come from commonists who imagine the web differently than corporations. They not only articulate their different vision, but they operationalize it through their code. These groups give me options when I try to opt-out of Facebook, when I need to make a website. I have the ability to download the song I already own on vinyl. These seemingly mundane examples, speak to my capacities as a member of the public to evade the enclosures. At a time when there appears to be so much effort towards creating digital enclosures, alternative structurations provide a vital dose of hope to a logical techno-pessimism.

My thesis contributes to the literature of web2.0 by theorizing about the activity of two alternative structurations of web2.0: the Pirate Bay (TPB) and Drupal. I asked how

we could theorize alternative structurations of web2.0 and what forms do these structures take. In part, my decision to focus on these cases comes from recognition of Latour's challenge to "come even closer to the matters of concern we cherish" (2004b, p. 248). I also make this turn in response to Fuller's request for a form of critical thinking "to take the various movements in software foreword into those areas which are necessary if software oligarchies are to be undermined" (2003, p.11). Drupal and TPB both provide different ways to act and structure web2.0. They provide platforms capable of supporting alternative social and political meanings and practices. Drupal contributes to the production and decentralization of the web by providing an empty platform for people to build their own version of web2.0. TPB fiercely fights for file sharing and free information not only through their political tactics, but also through their web2.0 platform that facilitates these activities. Without my two cases, our capacities on web2.0 would be poorer.

To describe the structural dimensions of code I introduced the connected articulation theory to the modularity of web2.0. The theoretical perspective captures the possibilities latent in the concentration of technical elements in web2.0. Articulation refers to the assembling - the structuring – of discrete meanings and elements together into cohesive discourse. Articulation is my way of talking about the structuration of web2.0. In a digital environment, I argued that articulation occurs in both meaning and code through a combination of Ernesto Laclau, Chantal Mouffe, and Bruno Latour. I developed a theoretical approach that captured this sense of double articulation. Both of my cases developed a theoretical understanding of web2.0 and a description of an alternative structuration of web2.0.

In Chapter 3, I introduced Drupal: a free-to-use platform for people to create their own alternative versions of web2.0. I worked through some of the complexities of articulation in code, specifically the spatial dimensions of the interface. Often interfaces distance their user from the productive capacities of the platform. Drupal takes this challenge by creating an interface that allows users, particularly non-technical users, and the ability to reconstitute its code. As a structuration of web2.0, Drupal surfaces the capacities of modularity within its interface and design. Users interact with modules to articulate their site, and developers organize around its modular architecture. This modular system overcomes many of the problems of the interface. As an alternative structuration of web2.0, Drupal decentralizes the creation of new web2.0 sites by pluralizing the ability to create space, but also pools its users together to create a commons of shared extensions and knowledge. Drupal acts as an empty platform for people to build their own version of web2.0.

In Chapter 4, I expanded on the concept of articulating in code to introduce a case of articulation through code. I did not mention the political deployments of Drupal in the chapter because I wanted to focus on this matter in depth with my next case. The Pirate Bay (TPB) is a political movement that uses codes as an ally. I suggest that TPB involves the double articulation code and meaning. This articulation creates a political movement. I focus on their development of a website that allows users to freely share files. People all around the world can participate in their grey commons. TPB uses this software platform as a political platform to express their anti-copyright, pro-piracy politics. In the end, the site has proven to be moderately successful having mobilized popular support in their native Sweden and among Internet users around the world.

I began this thesis by describing how my two cases relate to people. Ultimately, I want to end on this point. Drupal and The Pirate Bay concern people, so much that people donated their time and money to the projects, and they stood in the streets as a show of support. People tried to protect the sites because they wanted to protect what the sites allow them to do. Web2.0 should concern us because it provides new structures within which humans act. We hang out on Facebook, we watch videos on YouTube, we make websites using Drupal, and we share files on The Pirate Bay. Web2.0 involves humans and technologies mixed together.

As we become an increasingly technological society – as the Internet becomes every more a part of our daily lives – web2.0 begins to define the horizons of our social imaginary. The virtual world collects and refines our social possibilities (Taylor, 2004). What happens online is frequently used to imagine what could happen offline. Elmer (2004) references Deleuze who describes the virtual as the possible, as simulations of the future (p.23). The internet has become a horizon in our society: free software envisions new systems of production, open sources imagines more transparent government, file-sharing suggest new systems of exchange. Today, the internet becomes a resource of hope. It is not an answer, but an outlook. Without such a horizon, without an imaginary of change, all the other struggles that affect people's lives seem so much more hopeless and bleak. Why should we care about Drupal and The Pirate Bay? They manifest different possibilities for new ways of political action and organization.

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