

DESIGNING ONLINE COMMUNITIES: HOW DESIGNERS, DEVELOPERS,
COMMUNITY MANAGERS, AND SOFTWARE STRUCTURE DISCOURSE AND
KNOWLEDGE PRODUCTION ON THE WEB

by

Trevor J. Owens
A Dissertation
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Doctor of Philosophy
Education

Committee:

_____ Chair

_____ Program Director

_____ Dean, College of Education
and Human Development

Date: _____ Spring Semester 2014
George Mason University
Fairfax, VA

Designing Online Communities: How Designers, Developers, Community Managers, and
Software Structure Discourse and Knowledge Production on the Web

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctorate of Philosophy at George Mason University

By

Trevor Owens
Bachelor of Arts
University of Wisconsin-Madison, 2006
Master of Arts
George Mason University, 2009

Director: Kimberly Sheridan
College of Education and Human Development

Spring Semester 2014
George Mason University
Fairfax, VA

ACKNOWLEDGEMENTS

This dissertation represents the beginning of an end, the end of 23 years of school and education. Each of my committee members played a significant role in the design and development of the project. For the four years I worked at the Center for History and New Media Dan Cohen was both a great boss and a great mentor who helped me refine a lot of my ideas about online community in the practice of helping to grow the community of Zotero users. In his digital history course, I was also introduced too much of the new media studies work that shapes much of the framework of this study. Early in the doctoral program at George Mason University I reached out to Kim Sheridan about a study I wanted to do on the RPGmakerVX online community. I had seen from her CV that her dissertation involved Kantian notions of taste and film fan forums. She happily agreed to advise my project and over the last five years I have had the chance to deepen and refine my critical skills at research design and analytic interpretation under her guidance. When I first read Joe Maxwell's book, *Qualitative Research Design: An Interactive Approach*, I was hooked. It remains rare and refreshing to find such clear, focused and accessible academic writing. Through his writings and experiences in courses, Joe's approach to research has stuck with me as one of my key take-aways from the doctoral program. Aside from my committee, a range of other's has played a key role in refining and developing the ideas and approach in this thesis. Kurt Squire's ideas about studying forums for the game Civilization sparked much of my interest in the topic. Further, discussions about discourse analysis of online communities with Ben Devane have been critical. Historian of science Richard Staley, my undergraduate thesis advisor, who spent far more time than I imagine any other undergraduate thesis advisor has before or since advising a student, was instrumental in setting me up with the habits of writing and picking apart texts which I have made ample use of here. John Levi Martin's seminar on culture and cognition provided me with a significant part of my sociological perspective. More recently, Matthew Kirshenbaum's approach to studying theorizing and studying software helped to firm up my own thinking. My colleagues working on digital preservation at the Library of Congress have been similarly instrumental. Thanks to my mother who persisted in convincing me despite the expense, I should go to college instead of just hanging out in Milwaukee with the band. All of that aside, it's most important that I acknowledge my wife and constant collaborator Marjee Chmiel. My very first foray into academic writing and the study of online community was a conference paper we wrote together about creationist teen web forums. I believe it was Marjee who first spotted the listing for the Zotero job at CHNM and sent it to me to apply for. Talking with Marjee about her work on World of Warcraft forums helped me refine my interest and idea in online communities. When it came time to work on this PhD, we did it together.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
LIST OF FIGURES	viii
Abstract	ix
Chapter 1: Introduction	1
Locating Power, Control, and Autonomy in Collective Intelligence	5
Chapter 2: Conceptual Framework	12
Theorizing Online Community Software	15
Theorizing Software from Technology Studies	16
Cognitive Systems and Cognitive Niches	22
How technologies distribute cognition	23
Cognitive niche construction	24
Collective Intelligence in Action	25
Learning in online communities as participation in collective intelligence.	27
Chapter 3: Research Questions	30
Values and Ideology	31
Tactics	31
Looking for Difference	32
Chapter 4: Methods and Analytic Process	33
Analyzing Texts as Discourse	33
The value of studying discourse in how-to guides as software studies.	34
Book Selection	37
Identifying books	38
Including BBS books	39
Analytic Focus	41
Visual design.	41
Banning users and moderating user content.	41

Reputation systems.....	42
The socio-cognitive theories of users these books draw on to explain users and community.....	42
Analytic Process.....	43
Preliminary Analysis and Framework Development.....	43
Initial focused analysis of highly divergent books.	44
Iterative theory/framework development.	44
Next set of focused book analyses.....	46
Initial drafts of each section.....	47
Reading sections against the remaining books.	47
Composing the discussion section and conclusions.	48
Chapter 5: Responses to Validity threats and Inherent Limitations	49
Relationship to Actual Online Communities	49
The Stories in the Books are Rehearsed.....	50
Authors of Books Aren't Normal Designers/Developers	51
Representing Distinct Authors' Perspectives.....	51
Respecting the Diversity of Divergent Perspectives	52
Why Should I Trust your Interpretations of these Authors' Ideas?	53
Chapter 6: Analysis and Results	55
Note on Technical Jargon and Vocabulary	56
Rhethorics of Online Community, A Brief History	56
The BBS and the Sysop.....	60
<i>From the caller's view</i>	61
<i>BBSes as a communication medium</i>	63
<i>Understanding BBS nation as the online world</i>	64
<i>BBSes as electronic democracy</i>	66
<i>BBSes and free information ideology</i>	68
Community on the web takes off	69
<i>The language of networking in the language of community</i>	70
<i>Spirituality in cyberspace</i>	72
<i>The owners of community</i>	75
<i>Bozos in the Well</i>	78
<i>Hosting vs. managing</i>	80

Cyberspace's 3D future never came	84
Platforms define online community.	86
Default ranks and post count.	89
From community to social.....	93
<i>Why community became passé for some</i>	93
<i>The alternative age of participation</i>	107
<i>Read-mostly and write-centered communities</i>	108
40 years of online community.	111
Enacting Control, Granting Permissions	113
Visual design and information architecture	115
<i>Getting the right tag line</i>	116
<i>Bury the post button: Page layout, empowerment and manipulation.</i>	116
<i>Welcome to the site</i>	122
Moderate, filter, ban	123
<i>Finely tuned control of users: 7 Types and 5 Levels of Permission in phpBB 2</i>	124
<i>Tools for moderator</i>	126
<i>Dealing with problem users, bans and chaos</i>	132
<i>Word censors</i>	135
<i>The difficulties of banning users</i>	138
<i>Creative approaches to banning users</i>	141
<i>The global ignore or hall of mirrors</i>	142
<i>Empowering users to collaboratively moderate</i>	144
Reputation systems.....	147
<i>The origins of reputation in the database</i>	148
<i>Institutionalized gossip</i>	149
<i>Ranks in phpBB, vBulletin and Invision Power Board</i>	151
<i>Reputation at the heart of designing social</i>	152
<i>Database record being.</i>	158
Chapter 7: Conclusions and Discussion.....	160
Control, Empowerment and its Limits	161
Theories of Users as Generalized Others in Design.....	162
Software as actant, actor, and mediator in face-work.....	163
Applied Implications of Understanding Online Communities.....	164

Implications for studying online communities	165
Implications for educators interested in using and building online communities ...	168
Specific questions to ask of records of online communities	169
Strategies to consider.....	171
Conclusion: Further Disaggregating the Internet	172
Appendix: Example Book Data Collection Sheet.....	174
References	176
BIOGRAPHY	181

LIST OF TABLES

Table	Page
1. Chronological Table of Guidebooks	41

LIST OF FIGURES

Figure	Page
1. Wisdom of the Ancients, XKCD Webcomic	1
2. Conceptualizing Online Community Over Time	62
3. Online Community and Bulletin Board System in Google N-gram	68
4. <i>Vision of Community in Cyberspace</i>	77
5. <i>Reputation Statement Diagram</i>	156
6. Reputation Model for Flickr Interestingness:	158

ABSTRACT

DESIGNING ONLINE COMMUNITIES: HOW DESIGNERS, DEVELOPERS, COMMUNITY MANAGERS, AND SOFTWARE STRUCTURE DISCOURSE AND KNOWLEDGE PRODUCTION ON THE WEB

Trevor J. Owens, Ph. D

George Mason University, 2014

Thesis Director: Dr. Kimberly Sheridan

Discussion on the Web is mediated through layers of software and protocols. As scholars increasingly study communication and learning on the web it is essential to consider how site administrators, programmers, and designers create interfaces and enable functionality. The managers, administrators, and designers of online communities can turn to more than 20 years of technical books for guidance on how to design online communities toward particular objectives. Through analysis of this “how-to” literature, this dissertation explores the discourse of design and configuration that partially structures online communities and later social networks. Tracking the history of notions of community in these books suggests the emergence of a logic of permission and control. Online community defies many conventional notions of community. Participants are increasingly treated as “users”, or even as commodities themselves to be used. Through consideration of the particular tactics of these administrators, this study suggests how researchers should approach the study and analysis of the records of online communities.

CHAPTER 1: INTRODUCTION



Figure 1. Wisdom of the Ancients, XKCD Webcomic, 2011.

In a 2009 interview for the popular blog ReadWriteWeb Mark O'Sullivan, the lead developer of the open source Web forum software called “Vanilla”, was asked if Web forums are still relevant (O’Sullivan, 2009). His response offers a point of entry for understanding the importance of software that powers discussion on the web: “Do a Google search for anything. How many of those search results are from discussion forums?” When asked why this is the case, he responded, “It has to do with people having real discussions and giving real answers.” When you go out looking for answers

on the Web there is a good chance you will find it in some previous answered question on the web.

Users of the Web consult this collective knowledge base of questions and answers on a regular basis, but there is relatively little scholarship exploring the structures and systems in place that create it. In particular, we know little about the design decisions behind the discussion board software and commenting systems that enabled the communications we rely on for information. Aside from understanding this knowledge base, knowing more about these design decisions can pay dividends for studies of online community and social interaction. The first step in the process involves the software tools that enable and shape our discourse online.

The structure of the conversations that users of the Web engage in on online discussion boards, blogs, and other content driven platforms are shaped by the Mark O'Sullivans of the world; the individuals that create, design, implement, and hack on the software that makes the Web a platform for community discussion, deliberation and dialog. In this study, I document and explore the ideology and practices of software developers and individuals who implement and configure the software that support online communities. This analysis suggests how the software and visions of community embedded in that software effect the nature of the discourse in online communities.

Online community sites, first and foremost Web forums, are increasingly being explored ethnographically as contexts where young and old alike are developing valuable skills and sharing and building knowledge. We learn to write, to create art, to give and receive criticism, and acquire a range of other skills and knowledge in these online spaces (Ito, 2009). Through extensive ethnographic fieldwork, Ito and her assistants found

significant numbers of young people engaged in these online communities supported by Web forum software are “learning to navigate esoteric domains of knowledge and practice and participating in communities that traffic in these forms of expertise” (Ito, 2009, p. 28). Work on fan fiction forums suggests that participants are developing as writers and in some cases using these communities to learn English as a second language (Black, 2005 & 2008), studies of videogame fan-forums (Duncan, 2010; Owens, 2010; Squire & Giovanetto, 2008;) suggest that participants are developing their abilities to interact with, critique and design video games.

More broadly, virtual community sites and spaces are being explored as contexts in which civic engagement and democratic practice are developing (Song, 2009). As Song suggests, “virtual communities have captured the public imagination and subsequently become a vibrant site of competing views of “community” and “democracy”(p 5). As a psychologists, sociologists, anthropologists, educators, and others turn to study online communities, and those communities come to serve increasingly important roles in how people learn and develop knowledge, I argue it is critical that these social scientists understand the ideas and theories of community and human motivation that inform how online communities are built and managed. This is all the more important as ethnographic methods are deployed to study situations in which social interaction is entirely mediated by the work of those designing interfaces and modes of interaction. It’s not enough to study the experience that happens on the screen, it’s necessary to understand how those experiences result from the interplay of design and the software and hardware that makes what a user experiences on the screen happen.

Interest in the study of online communities is robust enough that there is now more than a decade of research methods scholarship focused directly on the subject. “Virtual ethnography” (Hine, 2000) or “netnography” (Kozinets, 2010) attempts to translate the ethnographic study of culture and community to study the computer-mediated nature of online communities. At this point there are clearly large and thriving communities, many supported, organized and sustained through platforms like Web forums and this body of methodological work suggests potent ways to engage in computer mediated participant observation and examination of the lived experience of participating in these communities. With this said, the methodological work in netnography has been primarily concerned with exploring what it’s like to participate in an online community. There is little exploration of how communities are being structured and designed with the intentions of developers, designers and community managers in play within the limits and constraints of software and underlying technical platforms and protocols.

While there is a growing body of literature studying the lived experience of interactions in informal learning in online communities and studying the textual record of interactions in places like Web forums, there remain significant methodological problems with conducting ethnographic research in what are clearly designed virtual environments. One of the primary goals of this project is to enrich the methodological discussion of how to approach the qualitative study of these kinds of Web communities. To better study community and knowledge on the web, it is important to understand the ideologies of the Web that operate in both social research on it and in the practices and tactics used by the individuals who create and manage online communities.

Locating Power, Control, and Autonomy in Collective Intelligence

In *Collective Intelligence* (1997), Pierre Levy proposed a vision for the kinds of changes the Internet was bringing to culture. Levy's ideas have "a form of universally distributed intelligence, constantly enhanced, coordinated in real-time, and resulting in the effective mobilization of skills." At the heart of Levy's approach, and many other boosters of the web, is the idea that the Web empowered individuals and enabled the creation of new community networks. In educational research, Levy's ideas have found particular purchase through Jenkins' articulation of the participatory culture of the Web (Jenkins, Purushotma, Weigel, Clinton, & Robison, 2009). From this perspective, the Web enhances users' autonomy both through providing access to knowledge and enabling them to create knowledge. In Levy's words, "The distinctions between authors and readers, producers and spectators, creators and interpreters will blend to form a reading-writing continuum, which will extend from machine and network designers to the ultimate recipient each helping to sustain the activity of other" (Levy, 2009, p.121). From his perspective, collective intelligence works to the betterment of individuals, that "the basis and goal of collective intelligence is the mutual recognition and enrichment of individuals" (Levy, 2009, p. 39). Much of the work exploring informal learning in online environments is grounded in Levy's perspective. However, the Web is not a free-for-all. It is an emergent phenomenon, designed and structured by particular individuals and their software.

At the most fundamental level, the designs of the networks we use operate on a set of protocols. The TCP/IP (Telecommunications Control Protocol/ Internet Protocol) and the DNS (Domain Names System) are the fundamental protocols that enable the Web

establish structures of control. As Galloway suggests, these different protocols have vast differences in the control they exert on the individuals that use the web. As he explains, “One protocol (TCP/IP) radically distributes control into autonomous agents, the other (The DNS) rigidly organizes control into a tree-like decentralized database” (Galloway, 2004, p. 53). At the baseline level, the World Wide Web is constrained and structured by design decisions in these protocols. Similarly, Chun argues that the structure and design of the communications networks that undergird the Web are actually enacted through powerful control and surveillance of individual’s actions online. The Web was “sold as a tool of freedom” but it can also be understood as a “dark machine of control” (2006, p.2). In Chun’s consideration of TCP/IP this fundamental protocol establishes conditions where “users are used as they use” (2006, p. 21). As Chun documents, every HTTP request is signed with a user’s IP address, making their actions visible in HTTP logs even when users think they are invisible. Many continue to see the Web as a platform that emancipates users to create and share their ideas and build collective knowledge and intelligence, but that system is highly structured and designed to record and track users in the way the system’s most basic protocols function.

Understanding the protocols of the Web is valuable, but it is important to remember that the Internet is not a single monolithic technological platform, but a platform upon which platforms are built. As anthropologists Miller and Slater suggest, researchers need to “disaggregate” the Internet. That is, not to look at a monolithic medium called ‘the Internet,’ but rather at a range of practices, software and hardware technologies, modes of representation and interaction that may or may not be interrelated by participants, machines or programs (Miller & Slater, 2001). When we sign up for a

Web forum and start a discussion thread, when we post a comment on a blog, when we find the answer to a question in a technical forum as the result of a Google search, we are getting something we want, but we are also participating in a designed experience created by individuals for particular purposes. For the designers or managers of a particular site or piece of software that purpose might be to foster “real discussion” like Mark O’Sullivan, or it might be to maximize Web traffic to increase traffic to online advertisers. In any event, exploring and understanding the ends to which different platforms and communities are designed and maintained, and the tactics and practices that work to achieve those ends opens the possibilities for understanding the ideologies at play in structuring and constructing the experience of online community.

While there is considerable research on how users experience and participate in online communities, there is little scholarly work focused on understanding how the people that set up, design and configure communication on the Web think about and theorize their work. Realizing that researchers need to disaggregate the Web into a set of distinct platforms and systems that are enabled over the founding protocols that enable it requires us to think about studying the ideas and perspectives that inform how particular features, tactics, designs and configurations are enabled to create particular kinds of results. What tactics do these designers, developers, and community managers use to get their software to create the kinds of online communities they want to run? What values, ideologies, and theories of their users and of community itself are evident in those tactics? What divisions exist within these ideas and ideologies and how have they developed since the era of thousands of Bulletin Board Systems in the 1980s to the early

days of the Web and our contemporary world of social networks? These are some of the questions this study begins to develop answers to.

The designers, developers, community managers, and system operators who build, set-up and configure the systems and norms of online communities have produced a technical literature about how and why systems should be built. Books with titles like, *Growing and Maintaining a Successful Bulletin Board Site* (Bryant, 1995), *Hosting Web Communities: Building Relationships, Increasing Customer Loyalty, and Maintaining a Competitive Edge* (Figallo, 1998) and *Building Web Reputation Systems: Ratings, Reviews & Karma to Keep Your Community Healthy* (Farmer & Glass, 2010) have been consulted by the developers and designers behind online communities since the early days of these systems. In many cases, even their titles suggest particular visions for the purpose of community. Are communities things to be grown? Are they places where you can increase the loyalty of customers? What does it say about online community that there are now entire books devoted to the design of technical structures for “reputation systems”? Alongside these kinds of general books, guides for particular pieces of software, like *Building Forums with vBulletin: A practical guide to the web’s favorite discussion system* (Kingsley-Hughes, 2006) offer information about *why* one would run such a system. These texts contain a set of ways of seeing the Web and they document the tactics and practices that operate in how Web forums and online community sites are set up. For example, here is how Powazek (2002) explained the role of software tools in the introduction of *Design for Community: The Art of Connecting Real People in Virtual Places*:

This is all about power. Giving your users tools to communicate is giving them the power. But we're not talking about all the tools they could possibly want. We're talking about carefully crafted experiences, conservatively proportioned for maximum impact (Powazek, 2002, p. xxii).

While studies of discourse often turn to explanations based on power and control, power and control is often not described and presented so explicitly by the individuals researchers study. There is an important tension between the first two sentences of this quote and the last two. In the first two sentences, Powazek is focused on empowering users. The “tools to communicate” are about empowering users, about handing over control. A central theme in these texts is that old media was a controlled experience in which producers produced and consumers consumed. On the other hand, the last sentences address the soft power of the designer. The act of control in Powazek's case comes through deciding what tools to provide to a site's theoretical potential users, how one will allow them to communicate. Importantly, for Powazek this is explicitly about not about “all the tools they could possibly want,” that is, empowering users is not an attempt to give them everything they want. The designer creates “carefully crafted experiences.” The experience of participating in his online community has been explicitly designed toward particular ends. In designing the structure and functionality of an online community for “maximum impact” the idea of maximization implies a vision of enabling specific kinds of communication between particular kinds of users. Even in the

introduction to his book, Powazek expresses a tension between empowering and giving users a voice versus manipulating and restricting users' autonomy.

Software, like any technology, does not exist in a vacuum. Software is created, deployed, and managed by individuals and organizations toward their own set of goals. The managers, administrators and designers of online communities can turn to more than 20 years of technical books for guidance on how to design and structure online communities toward particular objectives. The subject of analysis in this study is popular how-to guides on running and managing this software. Created by designers and developers themselves as guides for each other, these books offer a window into the technical and practical, the everyday of designing and managing online community. How-to guides offer a point of entry for understanding the theories of users, of design, and the values that are prevalent in an ongoing discourse about what this software should do. In this sense, I can turn to the same point of entry into this discussion that someone interested in running such a site would and explore the layers of values evident in these texts.

Indirectly, this is a study about how these designers, developers, and administrators have made use of the affordances of the World Wide Web as a platform for enabling the creation of online communities. Working within the constraints of the functionality of the Web and with their ideas about what users want and what community should be they have developed and refined the software that defines and structures online communities.

The results of this study are useful for two primary purposes. First, through a historical analysis of how online community is defined and envisioned in these texts I

argue that increasingly community has less and less to do with the development of social ties and exchange of knowledge between self-identified members and more and more to do with thinking of online community itself as a kind of property owned by the site administrator/manager. This finding is useful for ongoing discussions of the extent to which the Web is empowering individuals or acting as a system of control. Second, this perspective on the nature of online community has significant implications for social scientists interested in studying the records of online communities. Through understanding the tactics that the administrators, managers and designers use to shape online discourse social scientists and humanities scholars can begin to attend to many of the impacts of this control on the resulting records.

CHAPTER 2: CONCEPTUAL FRAMEWORK

In 2006 I was working as the “Technology Evangelist” for the Zotero open source software project. I was hired to do outreach and help manage the burgeoning online community of users and developers. When the Zotero project launched, its website consisted of a blog, a documentation wiki and a Web forum for discussion. Over the course of the five years I worked on the project I generally spent a few hours a day responding to questions and comments on the projects’ forums. The genesis of this dissertation comes from an early attempt introduce some changes to Zotero’s Web forums. Like many open source projects, the Web forums served a key role in how users got involved in the project. Any user could visit the forums to ask for help and the resulting answers to questions served as a knowledge base so users who had similar problems in the future could search the forums and find their answers without needing to ask them again. The forums also served as a platform for users to suggest new features and refine their ideas about how exactly those features would work. An important part of my job was to try and help users troubleshoot issues and encourage them to become more involved in the project.

At one point I explored adding a plugin (a software component that adds additional functionality) to the Web forums we were using. Like most projects, we did not create our own forum software. Zotero’s website uses an open source Web forum software package called Vanilla. I thought it would be useful if users of the Zotero

forums could see users' post counts (the amount of times they posted) alongside each of the posts in the forums. Along with that, I was interested in exploring setting up different ranks for posters according to their post counts. (For example, beginner, intermediate, advanced.) This sort of feature is found in many Web forum systems. The idea behind showing post counts and ranks is that it becomes easy for new users to understand the amount of experience and expertise another user has.

In a search of technical advice on how to add this feature in the Vanilla software support forums, I found heated exchanges about the idea that someone might want to add this kind of functionality to their Vanilla forums instance. In one case, someone considering using the software noted that their users would like "Reputation Points" and "User Titles." The idea of this kind of functionality was not well received by the community of Vanilla users and developers. One user weighed in to suggest that this kind of reputation tracking was "pointless" and "more trouble than they're worth" and an "artificial measure of this is also easily gamed by people and so quickly becomes useless." Another user explained that these kinds of features result in attracting "people that post nothing but mindless drivel just to drive their post count up, and to get a new rank". In another discussion about similar feature request a user explained, "Like all revolution, Vanilla's biggest problem is simply that it's different. It's also the strongest feature." I thought Vanilla was just a simple software application that enabled the Zotero team to host discussions, but my ideas of features were in conflict with the "revolutionary vision" that the developers and core users of the software adhered to. Vanilla's vision was one of simplicity "focus on discussions rather than pointless features." One user went

on to explain that these kinds of features “would be going against the Vanilla Movement”.

What I thought was a very simple idea about how to modify our online community uncovered passionate philosophical disagreements among software designers. This was not something I had expected to find, and the points they raised were issues I hadn’t considered previously. I saw my ideas of showing the number of posts a user had made, or setting up something to assign titles to people based on their posts as simple, fun ways to see individuals’ involvement in the community. But I found that that idea was at odds with the ideology of the software we were using. Something relatively technically simple to implement didn’t exist because the idea of this seemingly minor feature was not in line with the values of those who have worked to design the platform, the Vanilla Web forums server side software package. These relatively trivial technical requests for software features point to ideological and value-driven notions of participant’s motivations and the nature of community.

These ideologies and values were not minor afterthoughts for the software designers. The individuals working on this software had rather extensive theories about human behavior and social interaction that informed their arguments about design. In my particular example, software designers were opposed features that lead people to “game” the system by suggesting that the value of participation in the community was captured in a point system. They had a vision for what online community and discussion should look like and how it should work. Those ideas were part of an ongoing technical discussion about the design of these systems.

Theorizing Online Community Software

As Montfort and Bogost suggest, the study of software involves the study of a layers of software on top of software intertwined with particular pieces of hardware (2009). The layers in these platforms provide particular affordances and constraints but are generally taken for granted by users as a part of the platform. The subjects of this study, the server side software packages and scripts discussed in the how-to guides, are a particular layer in the stack of software and hardware that enables the existence of online communities.

The software layer implicated in these texts is the software that users are directly interacting with on the server when they participate in online community websites. Often this software comes in the form of applications such as phpBB, Vanilla Forums, the Ultimate Bulletin Board System, or Vbulletin. In other situations it is made up of custom PHP, Python, or Perl scripts that interact with server side databases. While we experience the Web as a series of individual pages that load one at a time in our Web browsers and many of us understand that Web pages can be individually written in HTML, most of our interactions with the Web are actually mediated by these other software packages. These above named software systems and their databases establish rules for what users can and cannot do, what users can and cannot see, and how others in an online community site see users and their online actions. In short, my object of analysis in this study is the layer of software that exists just below the surface (from the user's point of view) and on the servers that we interact with via HTTP.

Most studies of online communities analyze and interpret the user experience, that is, interpreting the rendered pages that are created and displayed on the users screen. The

subject of this dissertation is the ideas behind the software that runs on the server, that is, the software that an administrator runs and configures that enables the interactions that end users experience. Where one looks to understand how users interpret rendered pages, it is important to understand how developers and administrators understand and think about the software on the server as their ideas about this software have clear impacts in the experience of users. In this respect, I am indirectly studying software and directly studying how this software is designed, deployed, tweaked and made to create user experience. My approach is to consider the interplay between these technical mechanisms and the textual discourse in which the norms, values, and ideologies that administrators and developers bring into their work on these systems are articulated. By helping researchers further disaggregate the Internet, and appreciate the roles that developers, designers, managers and software play in structuring participation in online communities this approach is intended to inform methodologies for studying participation in online communities.

Theorizing Software from Technology Studies

In *Behind the Blip: Essays on the Culture of Software*, cultural studies scholar Fuller argues that “each piece of software constructs a way of seeing, knowing, and doing in the world that at once contained a model of part of the world it ostensibly pertains to and that also shape it every time it is used” (Fuller, 2003, p.19). Through analysis of a variety of software platforms, he argues for interpretive study of how software constructs these ways of seeing. It is critical for researchers of on-line learning to realize that software operationalizes a set of ideas in a designed experience that constrains

individuals' experiences, participation and learning. Software shapes much of our experience, however it is too simple to say that software itself constructs “a way of seeing, knowing and doing.” Software affords and suggests particular uses to users, it shapes and structures experience. The meaning and utility of software for people (in this case both those running and administering the software and end-users of sites powered by the software) always involves meaning making between the person and the artifact. If we consider insights gleaned from studies of other technologies the meaning of any technology, like software, has a complex cultural and symbolic process of definition.

Users matter in software systems and given the extensive body of historical work that has focused on understanding the relationships between users and designers of technologies it is important to situate this study in work on the history and social study of technology. In the 1980s, historians of technology Pinch and Bijker (1984) drew attention to the users of any given technology through an approach they called the social construction of technology. The key concept in this work was that different individual users were able to construct radically different ideas about what a specific technology could or should be used for. Bijker made the relationship between users and designers of a particular technology more explicit with his idea of the technological frame. In this conception, the users and designers are thought to negotiate and then agree to a particular interpretive frame for understanding the use and value of a given technology. Woolgar argues we should approach technological artifacts as texts where the designers are authors who are actively involved in “encoding” particular meanings and uses into technologies which the individual user reads and interprets (Woolgar, 1991). With this noted, focusing on “encoding” can yet again lead to ceding too much authorial intent into

the process of reading these machines as text. As Akrich suggests, users are also involved in a process of “decoding” that text. The relationship between users and designers has also been conceived as similar to a film script: Like a film script, technical objects define a framework of action together with the actors and the space in which they are supposed to act” (Akrich, 1992, p. 208). The lesson from perspectives in the history of technology is that much of what a technology does and means is the result of an interpretive process by which the meaning, implications, and rules for the use of a given technology are negotiated between a range of users and designers. The guidebooks for online community software offer insight into how the creators and administrators of online communities anticipate, and negotiate their ideas of users with the design of their systems.

Latour’s Actor Network Theory (ANT) brings together ideas about how to interpret software suggested thus far (2005). In Latour’s approach we understand the social world as a network of interactions between actors, both people and objects. In this case, things like how-to guidebooks are themselves tools that exist as part of those systems. Broadly speaking, I would suggest Actor Network Theory allows researchers to retain materiality of software. Instead of focusing only on what actors do, Actor Network Theory introduces the idea of “actants”—anything that modifies or acts on something else. Unlike an actor, actants are not tied up in questions about agency. As a material actant in the network of action any given piece of software enables, disables, or suggests particular actions for its users. The phpBB Web forums system’s default settings suggest particular ways to set up a given online community and the structure of its design limits what a particular community manager can and cannot change about the site they create

and manage with the software. From there, the site that community manager creates and manages is itself a material artifact that, as a result of their decisions in setting up and configuring the software, enables, disables, or suggests particular uses for the participants in the online community. Because of the platform nature of the web, that is layers of software set atop layers of software, this kind of regress between users and software can be mapped back even further. The designers of the phpBB software are limited and constrained by the features of the PHP scripting language and, the protocols that undergird the Web (TCP/IP and the DNS). Again, each of those software components (the PHP language, TCP/IP and the DNS) have been designed by particular people with their own ideas and visions and thus the network of actants extends through an extended regress back through people's ideas about software which are codified into software products that create particular constraints by which users of software (both people and other software) then create additional platform layers.

The material nature of software as an enabler, disabler and suggester is still always itself contingent on individual use of discourses that include rules and norms for social interaction around that software. It's not that everything is socially constructed, particular software and systems enable or disable particular kinds of use. In this sense, examining how-to guides offers a point of entry into the discursive tool-kit (the ideas about how people and software should act, shared and contested ideas about what is and isn't ethical based on particular values, etc.) which those creating online communities are working with and from. This discourse is the story lines, and cultural script in these texts. You can see it in stories about miserable users and what you need to do to keep them from ruining your online community, in the values on display in reports on how to set up

your comment systems to get “quality discussion” and in the values that drive particular open source software projects about “openness.” In the context of Actor Network theory, this discourse is itself an important node in the network of interaction between users, software, servers, designers and administrators. These storylines, themes and values play a causal role in shaping how the designers and administrators of software respond to their users and design and structure their software.

By focusing in on the how-to books, I gain access to some of the places where theories and values can be interrogated on the page. I can unpack perspectives on users and functionality in these software systems. The discourse, the cultural models and scripts, around the network of actors (users, designers, administrators, etc.) play an important role in our understanding of them, but so do the physical and material properties of the software, protocols like HTTP and physical objects like servers and fiber optic cable. The text of the how-to guides represents attempts to organize and make sense of this network of people and things. The social and cultural is not to be understood as some outside force; in Actor Network Theory, social forces are more accurately thought of in terms of internalized theories about others. In this case, how-to books are interesting as each book offers access to the theories of users and user behavior have been committed to the page and disseminated as cultural scripts for other developers and administrators to look up and potentially integrate into their internal theories of users. To be sure, like all cultural notions, these ideas are not uniform or universally shared. Instead, each text offers a point of entry into the ongoing discursive activity to define and make legible the roles of people and technologies as actors in the network of action.

Collectively, these approaches to thinking about the social construction of technology, of the ways authors encode meaning into technology, and the way that technologies roles in society play out according to scripts draw attention to the important role that the texts around a given technology, like how-to guides, play in establishing the functionality and role of a given technology. The give-and-take between these perspectives suggests that the meaning of particular technologies and tactics is not fixed and deterministic, but instead is negotiated and argued for. For instance, when working on the Zotero forums, the idea of reputation points —displaying a running numerical score for a user’s contributions— initially seemed like a simple and straightforward idea for getting more users involved. However, in exploring discussions about this feature in the Vanilla software forums, I quickly found how technical discussion of an individual feature was fraught with an argument about human motivation and the values of community in the underlying software product that was used to run the Zotero forums. This suggests the value in looking at texts from different kinds of authors, for example, texts from those interested in making money online vs. those of individuals invested in causes like open source software. The meaning of particular approaches and functionality are likely to be contested and to be framed and approached by different authors from different perspectives. Explicitly seeking out this diversity will help to create a richer set of approaches to thinking about online community software.

By exploring how these guidebook texts frame, present, and suggest the value of particular elements of the technical components of software, I’m interested in exploring the interplay between discourse and technology. In these books I have found the authors offer up a significant amount of stories and anecdotes drawn from their experience to

contextualize their advice for how to design and configure online communities and online community software. (Instead of being entirely prescriptive these texts often wrap their prescriptions in stories about particular kinds of theoretical users.) I'm curious about how the cultural models and scripts evident in these texts and in their configuration stories—stories of configuring software systems and stories of configuring online communication and discourse itself—suggest a range of valuable lessons for understanding the nature of online discourse. Throughout analysis, I work to suggest how researchers can use an awareness of how online community is itself configured to make better judgments about what one can infer from the record of conversation which persists in online communities. As studies of informal online learning communities continue to flourish in research on literacy, instructional technology, and educational technology this kind of baseline understanding of the design of these spaces has significant potential to inform and improve this kind of research.

Cognitive Systems and Cognitive Niches

Beyond thinking about these technologies from the perspectives developed in software studies and science and technology studies, these software platforms function as cognitive systems. In this section, I establish the importance of understanding cognition as something larger than an individual, as a distributed property of systems. From there, I suggest the need to think about the technical decisions about Web forums and other ideas about technical systems for facilitating community interactions on the Web as shaping our own personal and social cognitive systems. Technologies co-create our cognitive apparatus, in the context of studying learning and education unpacking how software is

deployed to create spaces for online communication is important for understanding the cognitive niches and feedback cycles in knowledge production and learning.

How technologies distribute cognition. In “How a Cockpit Remembers its Speed”, cognitive anthropologist Edwin Hutchins (1995a) makes a compelling case for thinking about cognitive systems as something larger than individuals. By recounting in detail all of the information that is processed between the individual pilot and the technology in the cockpit he carefully documents the extent to which the system of the pilot plus the tool is acting as a cognitive whole. In a much more extensive study of ship navigation, Hutchins documents how the ship as a technological artifact can best be thought of as a cognitive network. In this case, it is not simply an individual and a tool, like the cockpit, but it is a network of individuals using different components of the ship to enable collective action and decision making (1995b). Both cases suggest the value for thinking about cognitive systems as something larger than individuals.

Thinking of cognition as something resulting from a network of tools and individuals leads to an even broader conception of cognition. More broadly, acts of cognition incorporate the intentions and unintended results of the ideas of the designers and engineers who create, assemble, and manage our tools for thought. It is not simply that these individuals have found objects to accomplish these goals, but that the designers of these artifacts work in creating them can similarly be understood as an element in the cognitive act. The tools we use are not simply instrumental in cognition, they are themselves part of our cognitive systems; they are part of our expanded minds. From this perspective, studying the design and structure of communication platforms, like Web forums and other online communities, which have become part of our everyday thought

processes is also partly a study of the networked cognitive system of learning and knowledge we are collaboratively constructing.

Cognitive niche construction. Technologies co-create our cognitive apparatus. Going back to Mark O'Sullivan's comments about the role that questions and answer forums play in helping Web users find answers to their questions. In that case, Google's search algorithms in combination with these question and answer forums create cognitive niches that we inhabit by creating knowledge feedback cycles. Cognitive philosopher Andy Clark draws attention to the idea of cognitive niche construction, a term he builds off of the evolutionary biology notion of environmental niche construction.

In evolutionary biology, niche construction refers to how, to "varying degrees, organisms choose their own habitats, mates, and resources and construct important components of their local environments such as nest, holes, burrows, paths, webs, dams, and chemical environments" (Clark, 2008, p.131). In each of these cases, animals' behavior has altered their environment, and those alterations then become the basis for further adaptation. This notion of niche construction fits quite nicely with how I am conceptualizing the relationships between software platforms, users and designers. The software platforms are cognitively akin to the nests, holes, burrows, paths, webs and dams that animals create.

One of the primary examples of this is the spider's web. "The existence of the web modifies the sources of natural selection within the spider's selective niche, allowing subsequent selection for web-based forms of camouflage and communication" (Clark, 2008, p.61). The spider's web is interesting as an example of an individual organism and its tools, but beyond this the example of a beaver's dam brings in far more complexity.

Dams are created and inhabited by a collective group of individual beavers and further, are extended over time, outliving the lives of the individual beavers that occupy them. Further, beavers adapt to the niche which the beavers before them had created and the altered physical landscape which that dam has produced. These individual dams outlive the beavers themselves. The dam one generation builds structures and shapes the development of the next generation. What matters for Clark in this case is that "niche-construction activity leads to new feedback cycles" (2008, p.62).

Technologies co-create our cognitive apparatus: the cockpit, the ship, Web forum software, Google's search algorithms, each affect our cognitive niches by interacting in our knowledge feedback cycles. The user of a particular piece of software, the designer, the engineers, the person who deploys it, are each nodes in a network of activity and feedback that continues to shape the niche. These technologies, and the ideas behind them, are not just tools that help us learn but part of our extended cognitive apparatus. As more and more of people around the world participate further with these kinds of designed online communities the impact of the designers and administrators ideas and theories of community become integrated into the cognitive infrastructure of knowledge, memory and thought. This is particularly salient in the somewhat utopian notion of collective intelligence.

Collective Intelligence in Action

These notions of distributed cognition and intelligence fit well with the Levy's previously described idea of the World Wide Web as a platform that creates and sustains collective intelligence. What is particularly important about Levy's ideas about collective

intelligence is that unlike ideas of distributed cognition, Levy's theory is being actively used by those who are developing, designing, and creating the structure of online community systems.

In *Programming for Collective Intelligence*, a 2008 technical book targeted at developers and designers that is included in the collection of books I intend to study, author Toby Segaran describes Wikipedia and Google's search algorithms as examples of how to build tools that make use of the collective intelligence exposed on the web. The idea of collective intelligence, the idea that the Web enables the creation of extensive stores of knowledge that can be used to help filter, sort, and provide information to all of us, is part of how designers and developers envision their work. In this case, the expansive online networks are understood as a kind of extensive external memory. Similarly, collective intelligence includes some of the notion of actor network theory, in which this collective body of knowledge is made usable between various actors in the network.

The structures of the systems that facilitate creation of this collective intelligence are designed explicitly to shape the communication that creates that knowledge. This is not to say that those designs don't come with extensive unintended consequences. Situating this project in work on software studies helps suggest ways to examine software and the process of creating that software as artifacts and texts for analysis. Similarly, work in science and technology studies suggests the value of approaching this kind of communications technology as infrastructure, while simultaneously offering a set of cautionary tales for interpreting the relationships between the ideas of what a given technology does and the effects of those ideas. Finally, work on distributed cognition

similarly focuses analysis on the way technology is embedded in a network of individuals and tools that enable particular kinds of thinking. Together, these perspectives suggest the value of analyzing and contextualizing software and various texts related to the creation of that software both to understand these objects and begin to understand the way these tools are being constructed and created to achieve particular ideas of online community.

Learning in online communities as participation in collective intelligence. A flurry of educational research has focused on studying the kinds of skills young people are developing in online learning communities. Much of this work has focused on how online learning experiences are helping individuals develop “new literacies” with digital media (Lankshear & Knobel, 2003) and much of this work is focused on the kinds of valuable skills young people are developing in online communities related to their interests in videogames. Levy’s notion of collective intelligence is similarly operative in this work studying informal learning on the web.

In a study of discussion threads in the *World of Warcraft* forums Steinkuehler and Duncan (2008) and Steinkuehler and Chmiel (2006) found that beyond serving as a space for discussion, the threads also served as a knowledge base. Drawin(g on Levy’s use of the notion of Collective Intelligence, the authors suggested that the discourse and dialog between these gamers became a body of collective information that was then consulted by others as a resource. In this case, they suggest that the collaborative construction of knowledge in *Warcraft* forums parallels the kind of collaborative construction of knowledge that occurs in scientific communities. By looking at the arguments that players engage in about how to best use resources in the game, Steinkuehler and Duncan document the sophistication of argumentation in this space.

Further, Steinkuehler and Duncan suggest that beyond simply documenting discourse the discussions themselves become resources that other players draw from to make decisions.

We can see another component of Levy's reading-writing continuum in the way many games invite players to modify them. In a study of the game *Civilization III*'s forums Squire and Giovanetto found that participation in the online forums served a similar collective knowledge production role as the *Warcraft* forums (2008). Beyond this, Squire and Giovanetto suggest that the *Civilization* forums scaffold individuals interested in playing the games into developing the ability to modify and redesign the game. Players participating in these forums clearly develop technical skills. Squire and Giovanetto (2008) suggest that "More important than the particular facts or technical processes may be the practice of negotiating social organizations (including forming them) to further one's own learning" (Squire & Giovanetto, 2008, p. 27). The conversations in these forums are not simply dialog, they are an organization of knowledge resulting from a process of surfacing the most important parts of that discussion for others to find and play games, comment on and critique games and create their own games. Participating in, and making sense of, these kinds of online communities may itself be an important skill. That is, Squire and Giovanetto are suggesting that learning how to *use* collective intelligence is becoming an important skill.

Online communities don't simply result enable a range of constructive and creative learning activity. Gee and Hayes (2010) have illustrated how different women and girls involved in writing fan fiction, creating films using video games and other kinds of media developed as designers, gained audiences, and found their voices through using various versions of *The Sims* and participating in online discussion boards as platforms

for learning. For Gee and Hayes (2010) there is a stark contrast between the kinds of learning that occurs in this interest-driven online communities and learning in schools. They suggest schools “which now stand so separate from the rest of the learning landscape, will have to integrate with other means and locations of learning” (Gee & Hayes, 2010, p.150). From their perspective, it is this informal network of forums and discussion spaces that have become the primary sites of learning in our society.

Together these examples illustrate the various kinds of skills with media production and creation, what literacy specialists Lankshear and Knobel call “new literacies” (2003). Lankshear and Knobel have encouraged scholars to explore those communities to develop innovative ideas for formal learning environments. There is broad interest in studying informal online learning communities as a means to invigorate classroom practice (e.g., Greenhow, et al., 2010).

What I propose, however, is that it is not enough to study these sites as places where informal learning occurs. As previously discussed, decades of research in the history of technology demonstrates that technology occurs as a conversation between user and designer. Technologies are theory-laden, designed by people with implicit and explicit ideas about the way the world, and the way other humans, work. Therefore, if we are to understand discussion forums and the informal learning that can blossom in these forums in a rich way, we need a greater depth of knowledge about how they are designed and structured to result in particular outcomes and goals.

CHAPTER 3: RESEARCH QUESTIONS

My research questions are specifically framed as questions about the information and perspectives presented in the guidebooks written by discussion forum software designers. The answers to these questions have implications for those interested in studying online communities and those interested in understanding the history and development of ideas and perspectives on features used by many popular online community platforms and systems.

This study focuses on three primary research questions.

1. What values and psychological theories of users and social theories of community are evident in how books about online communities describe and present online communities? Further, how do the designers' values and social theories appear to influence the designs, techniques, and approaches they present?"
2. What tactics do these authors present as ways to shape online discourse and what values and social theories are implied in those tactics?"

Specifically:

- a. What information architecture and visual design approaches do they suggest?
- b. What techniques and approaches do they suggest for controlling users like moderating discussion or banning accounts?

- c. What implementations do they suggest for setting up reputation systems and user profiles?
- 3. What substantive differences on these tactics, values, and theories exist in the books? Do these ideas change over time? Do they represent distinct ideological or professional perspectives?

Values and Ideology

Question one focuses on the ideological nature of developer and community manager's tactics. Online community means different things to different people in different times and unpacking the development of the term suggests some of the values at play in different visions for the term. By examining how theories of human behavior and social organization and community are read into or used to argue for particular designs I draw attention to the ideological nature of these designs and shed light on how particular functionality is connected to particular ways of thinking about community. In this case, I am particularly interested in how autonomy and control are described. Authors of these texts regularly explicate their theories about individual human behavior and motivation and how social hierarchy and community structure and interact with individuals.

Tactics

Question two unpacks how ideas and values are embedded in the particular features and designs that the authors of the books are advocating for. While I broadly explore the authors' perspectives I also focus particular attention on the visual and structural designs, approaches to moderating the discussions, and reputation systems. In my initial study of three books, each of these issues served as particularly rich sets of

information for unpacking the ideological perspectives of the authors. As a result, I made them primary focal points of my analysis of the entire set of books. Looking systematically at these features in each of the books will help to focus my study. By focusing in on these issues, I underscore how seemingly dry technical configuration details act as sites in which the more interesting and extensive social questions of question two are enacted.

Looking for Difference

Question three focuses on exploring the differences in ideology and perspective and enactions in software that exist between the books. I am interested to see how the ideas about these software systems have changed in 22 years over which I have found guidebooks about running online/virtual communities. Specifically, starting with books from the pre-web hobbyist era of Bulletin Board Sites (BBSes) and tracing them through to the emergence and development of a thriving Web industry. For instance, there are tensions between the free software movement and culture and the culture of business and marketing.

CHAPTER 4: METHODS AND ANALYTIC PROCESS

This project treats how-to and user guidebooks as participation in a discourse, an ongoing dialog defining online community and the best tactics to use to build and sustain online communities. In this section I briefly explain my theoretical approach to discourse analysis and why I think that approach is valuable for studying these guidebooks. I then describe the books included in my analysis and the process I used to select a diverse set of 28 books from 1988-2010. I then explain my analytic focus and process.

Analyzing Texts as Discourse

I approach analysis of these texts in keeping with Fairclough and Gee's approaches to the study of discourse (Fairclough, 2003; Gee, 2005). While in many circles the study of discourse is often associated with Foucault's work on power and institutions, Fairclough and Gee are more broadly concerned with connecting that approach with sociolinguistic approaches to understanding how we do things with words. In this tradition, part of discourse involves what Gee (and many others) refer to as "cultural models," the storylines and cultural scripts that makes sense of our individual situated meanings. In this respect, guidebooks describe particular functionality of software and explain when that functionality is and is not appropriate toward a given set of goals.

This approach to discourse is not focused on revealing social or cultural forces, but on how individuals' use these texts for "world building." This approach is focused on how people use words and texts to do things. In Gee's words, "People use language to communicate, cooperate, help others, and build things like marriages, reputations, and institutions. They also use it to lie, advantage themselves, harm people, and destroy things like marriages, reputations, and institutions" (Gee, 2005, p. xi). The stories and the explanations of particular tactics and techniques in these books suggest particular goals, values and ways of thinking about users and I am interested in thinking about what these words tell us and what these words do.

The value of studying discourse in how-to guides as software studies. Given my interest in online community software and online communities, it might seem a bit strange that I am proposing to study books. In short, I have found these how-to books to be particularly rich sources not simply of describing particular tactics for designing online communities, but also for explicating how and why one should design and configure online communities toward particular ends. In particular, these texts present particularly thoughtful, robust, and coherent perspectives of developers and administrators. Beyond this, they are also influential texts in their own right.

As published works, these guidebooks represent thoughtful and reflective organizations of knowledge and experience. These books present the well-developed working theories of those with technical experience administrating, developing, and designing this software. These are not typical users' ideas or understandings of these systems. Instead, these are accounts of individuals who have likely spent much more time thinking through and developing a theory of their experience. To be sure, the authors

may be more inclined to put together a very coherent account of their beliefs about users and its connections to their tools than the actual messiness of design. In practice, it is likely that where they might have a muddled sense of users and make technology decisions on what is easiest or what they happened to think of first. These accounts should not be thought of as particular accurate presentations of what happened but instead, as presentations of theories that have developed through writing and talking about these sites.

It is worth pointing out that this is not simply a limitation. As Martin suggests, when social scientists, “The self-appointed auditors of behaviors swoop down upon actors” and ask for explanations of individuals actions “it is hardly surprising that actors’ retrospective scrambles to put their affairs in order —their stories of their motivations—are often unsatisfying” (Martin, 2011, p.105). In contrast to “swooping down” on community developers and administrators and interviewing them, or sitting down next to them and looking over their shoulders, it is useful to start from these how-to books, which represent some of these actors' attempts to develop and articulate more thoughtful presentations of their perspectives.

These perspectives are particularly important because as popular technical books they have likely influenced the work of designers and managers in the field. That is, they provide access to theories *for* as well as theories *of* the design. As widely available published works, these texts are themselves sources marketed to developers and administrators of online communities for them to read-up on how to run online communities. In the terms of Gee’s discourse analysis, these books play an important part in explicating, defining and describing the “cultural models” or “cultural scripts” in the

discourse of online community design and management. The audience for these books is looking for advice and information about how to design and manage online communities. In this respect, these how-to guides are intended as a resource for developers and administrators to rely on for advice for how to go about their work. The fact that there is a market for these kinds of guides is indicative of the fact that there is an audience for them. This is not to make too much of the role these books play in shaping or defining larger cultural scripts for designing and managing online community. As the ideas of working practitioners, the content of these guidebooks reflect working theories within the community of software designers and managers. To this end, this study is not about identifying the source of particular ideas or perspectives, but instead about using these books as points of entry to document the values and tactics evident in an ongoing discourse between the designers and managers of online communities.

Studying these texts brings with it another clear benefit. Sociologist John Levi Martin has argued that the myriad problems with defining the best explanation of action in social science as third person causal forces as a fundamentally flawed approach (Martin, 2011). For too long, the social sciences have attempted to identify “social forces” that cause individuals to do what they do in given situations. In doing so, they have reified statistical constructs into things that act in the world instead of understanding them as aggregates of individuals' actions (Martin, 2011). In many cases, individuals' beliefs and ideas are themselves causal forces that shape the world (Maxwell, 2004). Despite the problems associated with the analysis of first person explanations of action, we can at least say that those first person explanations are actual things in and of this world. Taking Martin's ideas seriously, the best place to begin our understanding of the

social is with a rigorous engagement with actors' first person explanations of their actions and desires.

By focusing on how these texts frame, present and suggest the value of particular elements of the technical components of software we can explore the interplay between discourse and technology. These configuration stories, stories of configuring software systems and stories of configuring discourse itself, suggest a range of valuable lessons for understanding the nature of online discourse. These stories offer points of focus for how to explore how online community is itself configured. Analysis of these texts can help enable researchers make better judgments about what can be inferred from the record of conversation which persist in online communities.

Book Selection

This analysis focuses on 28 books, spanning from 1988-2010. The intended audience for these books is individuals who either want to set up, run, design or build their own online communities. The existence of this audience, that there is a market for books about setting up and running online communities, is itself a noteworthy point of data for consideration. By 1988 online communities in the form of Bulletin Board Sites (described later) had become something of interest to enough people to warrant the publication of an array of books. Given the focus of my project I have not included memoirs about experiences in online communities, academic books about studying or evaluating online communities or computer science research publications focused on model and system design.

Within the 28 books, there is significant diversity. The books are written by authors from a range of professional backgrounds, including web designers, web developers, community managers, systems operators, open source software leaders, and business and marketing professionals. Some of the books focus on particular design components, like reputation systems. Some of the books focus on how to use particular software platforms, like phpBB or vBulletin. Some broadly discuss using a range of different social media platforms, like using Facebook or MySpace alongside discussion of mailing lists and Web forums. Others focus specifically on Web forums and systems for commenting and moderation. In each case, these books include discussion of asynchronous text based discussion and interaction. The primary focus of this project is on asynchronous text based interactions and the systems created around those discussions and comments and the systems that shape the resulting discussions there.

Identifying books. Given that I am interested in popular technical books and how-to guides, I started to look for relatively contemporary books through searches on Amazon. Searching for books on topics like; designing online communities, managing Web forums, running online communities, and for a range of specific software platforms for Web forums (phpBB, vBulletin, Invision Power Board, UBB). By finding books, and books Amazon suggested as related, I had identified half of the books. Amazon's listings cater to contemporary taste and interest. Given that I am also interested in studying change over time, I took information about these books and found related books in the Library of Congress catalog. By looking up each of the books, I found through Amazon in the Library of Congress catalog, I was able to identify the various subject headings each book had been categorized under. Looking through subjects like, "Electronic

villages (Computer networks); Virtual communities; and Electronic discussion groups” I was able to identify several additional related books going back to the 1980s.

Including BBS books. While the primary focus of this study is on asynchronous discourse on the World Wide Web I have also decided to include a series of how-to books about running and managing computer based Bulletin Board Systems (BBSes). From 1978 through the mid-90s, a range of computer based Bulletin Board Systems enabled individuals around the world to dial in to a particular system and post and share messages. The development of Web forum and Web bulletin board systems drew on the functionality and design of earlier Bulletin Board Systems. Thus, books about BBSes are themselves an important part of the discursive history of online communities. The earliest books in the collection (from 1988-1994) are primarily books about BBSes. There is a clear conceptual continuity in the structure and design of these books with the later Web focused ones. They similarly describe how to go about configuring software toward particular goals, how to attract a set of users, and how to manage and moderate them. Aside from this, many of these books also include mentions about emerging approaches to running their software on the web.

Table 1

Chronological Table of Books by Date, Number of Amazon Reviews (AZ), Number of Copies in WorldCat (WC)¹ Participating Libraries and Target Audience

Title	Publisher	Year	AZ	WC	Target Audience
The Complete Electronic Bulletin Board Starter Kit	Bantam	1988	0	47	Community Manager; Designer; Business
Using Computer Bulletin Boards	Management Info	1990	0	168	Business; Community Manager; Designer
Bulletin board systems for business	Wiley	1992	0	105	business; Designer
Running a Perfect BBS	Que	1994	1	51	Community Manager; Designer
The BBS Construction Kit	Wiley	1994	1	87	Community Manager; Designer
Growing and maintaining a successful BBS	Addison-Wesley	1995	0	0	Community Manager
New community networks : wired for change	Acm Press	1996	1	371	Community Manager
Net Gain: Expanding Markets Through Virtual Communities	Harvard Business	1997	63	3	Business; Marketing
How to Program a Virtual Community	Ziff-Davis	1997	1	38	Designer; Developer; Community Manager
Virtual communities companion	Coriolis Group	1997	0	0	Community Manager
Hosting Web Communities:	Wiley	1998	6	238	Marketing; Community Manager
Community Building on the Web :	Peachpit	2000	25	24	Designer; Community Manager
Online Communities:	Wiley	2000	15	400	Designer
Poor Richard's Building Online Communities:	Top Floor	2000	5	61	Designer; Community Manager
Design for Community:	New Riders	2002	12	215	Designer; Developer; Community Manager
Building Online Communities with phpBB 2	Packt	2005	6	225	Community Manager; Designer; Developer
Invision Power Board 2: A User Guide:	Packt	2005	3	192	Community Manager
Building Online Communities	Apress	2005	29	372	Designer; Community Manager
vBulletin: A Users Guide:	Packt	2006	1	4	Community Manager
Programming Collective Intelligence:	O'Reilly	2007	87	423	Developer; Designer
Managing Online Forums:	AMACOM	2008	62	714	Community Manager
The New Community Rules:	O'Reilly	2009	32	408	Business; Marketing
Online Communities Handbook:	New Riders	2009	2	109	Business; Marketing
The Art of Community:	O'Reilly	2009	44	184	Community Manager; Open Source

¹ WorldCat is a union catalog of books available at libraries around the world. Thus, the number of copies of a book in WorldCat member libraries offers information about how widely a books availability, success and longevity.

Building Social Web	O'Reilly	2009	14	243	Designer; Developer
Designing Social Interfaces:	Yahoo Press	2009	9	48	Designer; Developer
Design to Thrive: Creating	Morgan Kaufmann	2010	21	539	Designer; Developer
Building Web Reputation Systems	Yahoo Press	2010	8	121	Designer; Developer

Analytic Focus

Based on initial exploratory research on a subset of the books I plan to focus on four specific areas of focus in these texts. For each area of analytic focus I have provided my reasoning for selecting it.

Visual design. This includes explanations of how to use visual design and site structure to achieve particular objectives. Using design to prompt users to act in specific ways. As these ideas focus on parts of sites that are visually evident, documenting them would be of value for researchers studying online communities who could use discussion of visual design in these books to help interpret online communities they study.

Banning users and moderating user content. This includes discussions of when, how and why one should ban a user and what you should do with their accounts and profiles once you ban them. Discussions of how, when and why one should or shouldn't moderate user created content is similarly relevant. I have found this to be a valuable counterpoint to the focus on site and page design. Advice on this topic focuses on things that aren't likely to be evident from looking at a particular community's website. Furthermore, focusing on banning and moderation gets at the heart of my theoretical interest in the relationship between software, underlying protocols, and the kinds of agency that a developer or administrator can exert in relation to the kinds of

agency that users and participants in these communities can exert. In this sense, looking at the technical issues related to banning users and moderation of content is helpful for uncovering issues around control and autonomy and the roles that social norms play in determining what kinds of things are and aren't appropriate for developers to consider given particular user behavior.

Reputation systems. This is focused on explanations of why one should or shouldn't set up systems that track and show users each other's status regarding how prolific or popular the user's posts are. I am particularly interested in how authors conceptualize users' motivations to contribute to the forum. Given my own experience with the Zotero forums I believe this is a great place to uncover potentially differing perspectives about user psychology and motivation. By default, designing these types of systems requires conceptualizing "reputation," which quickly pushes authors to suggest models of social value and participant motivation. Given the interest in things like "badging systems" for online education and other applications of the development of these reputation systems, I think these are likely to be of considerable interest to educational technology audiences.

The socio-cognitive theories of users these books draw on to explain users and community. Focusing on when and how books draw on social and psychological theory to explain design decisions; for example, when a book invokes a behaviorist psychology, or draws on Maslow's hierarchy of needs, or ideas about why users should find participation meaningful. Much of these issues have emerged in my focus on the first three components, but specifically focusing on how these books are mobilizing existing psychological and sociological theory underscores what kinds of formal theoretical

perspectives they are drawing from. In a sense, this focus works from the opposite direction from the other three. In the previous cases I am looking for the implied theories of motivation and social interaction in particular tactics for visual design, banning and moderating users and designing and using reputation systems. In this case, I am looking for when explicit social and psychological theories are invoked and identifying the tactics or practices that those theories are used to support.

Analytic Process

Working with 28 books, most of which are over 200 pages long, presents an analytic challenge. Beyond the number of pages, my intention to retain the range of perspectives of the individual authors along with the fact that my research questions require a close reading approach make the scale of this project even more immense. Given the scale of text to work with, and my analytic interests, I developed an iterative process of close reading and integrative writing along with use of a structured data sheet to collect information and direct quotes from each book to conduct my research. In this section, I briefly describe each step in this process and how and why I took each step in this process. Given the importance of transparency in research process, I have tried to report each of the decisions along the way in the iterative development of my analysis.

Preliminary Analysis and Framework Development. In developing the proposal for the study, I had already engaged in extensive reading and analysis of three books; Powazek's *Designing for Community* (2002) O'Keefe's *Managing Online Forums* (2008) and Buss and Strauss' *Online Communities Handbook* (2009). As I prepared the dissertation proposal, I obtained copies of each of the 28 books. I skimmed each book to

confirm its relevance to the project and to inform the development of my interpretive framework. Through this process, I already had an idea of the topics and issues in the books and was confident that they were rich enough, diverse enough, but still related enough that I could use them as the basis for a dissertation project.

Initial focused analysis of highly divergent books. From the initial framework in my proposal, I began to read each of the books for the study and transcribe sections of the books that were particularly pertinent to the research questions in my dissertation proposal. See the appendix for an example of the data analysis template.

I started with books that were as different as possible within the 28 books. This included, an early BBS focused book (Bowen & Peyton's 1988 *The Complete Electronic Bulletin Board Starter Kit*) a book from the late 90s focused on the Web (Shelton & McNeeley's 1997 book *Virtual Communities Companion: Your Passport to the Bold New Frontier of Cyberspace*) a very technical book about a particular platform (Mytton's 2005 book *Invision Power Board 2: A User Guide*) and a relatively recent book focused on community from an open source perspective (Bacon's 2009 book *The Art of Community*). With this initial analysis in hand, it was clear that there was already a considerable amount of rich data to work with. So much so, that I became concerned about getting lost in the data if I just kept filling out these data sheets for each book without trying to work more systematically to begin to integrate my research.

Iterative theory/framework development. Given the quantity of this information and need to retain distinct perspective of individual authors, I decided I needed to start integrating my reading of the books early in the process. I decided to begin putting together a framework for writing up the research results. This enabled me

to begin systematically building a perspective and interpretation that I could continually refine in dialog with the remaining books I had to analyze. I could read the remaining books against my developing perspective to refine how I was interpreting the works.

Working in this iterative approach pushed me to begin thinking about how my analysis itself would ultimately be assembled. From my proposal, I was unsure if it would be better to work chronologically in my writing and analysis or thematically. Already from reading the first four books, I could see the advantages of each approach. On one level, it was difficult to even talk coherently about BBS tools and the assumptions operating in discussion of them with books delving into the features of reputation systems for the web. With that said, my primary interest was to surface exactly those kinds of similarities and differences across seemingly disparate systems. From my close reading of three books in the proposal process and four in the beginning stage of my full research process I could see the value of these two approaches.

In reflection on the issue, I decided that there were particular values that the historical approach could serve in further framing and focusing a separate thematic approach. In short, I decided to do both. A focused historical analysis could both inform the development of a more thematic treatment. Specifically, definitions of what online community is had clearly developed and shifted over the course of time in the books, and I could document and describe that. With that in hand, I could then use that analysis to inform a more systematic approach to particular functionality in these different systems. I decided to focus on answering my first research question, to identify what community meant and what psycho-social theories of community were evident in the books in the historical account. In this respect, to highlight how the notion of online community

developed and changed over time. The second research question, focused on the particular tactics and features that are used to enact that idea of online community is best addressed thematically, exploring different kinds of functions which I had already identified in the proposal.

At that point, I sketched out a rough framework for four historical periods I thought the books were falling into, and for four primary areas I thought I would focus on analyzing thematically. These are each became the basis for the sections of my dissertation analysis, with the exception of one thematic area. I had thought it would be valuable to write a thematic section on creating explicit policy and rules posted on online communities, however, in practice it wasn't featured in enough of the books to be substantive enough for me to fully develop.

Next set of focused book analyses. Based on the categories I had selected, I chose the next 7 books that I felt would best round out initial writing on each of the areas of focus. I read and filled out analysis sheets for, Chambers 1994 book *Running a Perfect BBS*, Figallo's 1998 book *Hosting Web Communities*, Kim's 2000 book *Community Building on the Web*, Stefanov, Rogers, & Lothar's 2005 book *Building Online Communities with phpBB 2*, Crumlish & Malone's 2009 book *Designing Social Interfaces* and Howard's 2010 book *Design to Thrive*. In selecting these next books for analysis I tried to pick books that represented the diversity of the time frame I was working with, as well as the diversity of level of technical detail represented in the books. Having taken notes on each of these with a framework for writing up my analysis in mind, I was then able to use my notes on each book to begin drafting the sections.

Initial drafts of each section. Writing and drafting interpretations of these works has been a continual part of the research process itself. With the outline of my ideas in hand, I worked to synthesize and juxtapose the analyses I had done into each of the initial sections. Inevitably, this involved me also having each of the books at hand as I worked to reconcile and document emergent differences between books dealing with particular points in the historical narrative. At this point, I had extensively engaged with and taken notes on 14, or half, of the total set of books. Having notes and extensive direct quotations from each book at hand made it relatively easy to make statements and claims grounded in one book and compare the directly related and relevant books to either confirm or complicate interpretive claims.

I worked through the historical sections first because the historical analysis could help to frame, focus and set up the thematic analysis. As a result, I drafted an initial set of conclusions based on the historical analysis sections, which then informed my writing on the functional/thematic sections. A revised version of that write up persists as a set of concluding remarks at the end of the historical section of this thesis.

Reading sections against the remaining books. Once I had developed these initial analyses, I identified which of the remaining books was likely to be particularly relevant to each of the sections. For example, the remaining two BBS books were identified as relevant for the section on BBSes. As a result, I read them specifically looking for points or issues that would counter or validate any of the points and themes I was making about them in my analysis and as I found those points that were relevant or countered points in my draft section I directly integrated discussion of the book into the draft. I had originally intended this to be a way for me to ensure I was taking an

integrative approach and developing my ideas. It was a tactic to reduce the data I was working with into chunks that were meaningful and retained their coherence from their original authorial perspective. In practice, I found this approach to serve as a useful method for refining my ideas and serving as a validity strategy. I was effectively testing the theories I had developed from one set of texts against a related but distinct set of texts. I used this strategy to work through the remaining sections, the result of which was a full rough draft of my analysis.

Composing the discussion section and conclusions. Once the entire rough draft of my analysis sections was complete I assembled them into a single document. This required me to write up introductory material for the sections and to revise and refine them to ensure that they were still focused on the central questions of the study. Assembling these analyses and reviewing the initial literature review of the dissertation proposal provided me with an opportunity to reflect and draft the discussion section and conclusions.

CHAPTER 4: RESPONSES TO VALIDITY THREATS AND INHERENT LIMITATIONS

While validity is a property of inferences from evidence and not a general property of research design (Maxwell, 2011), I anticipated and developed strategies and approaches to counter anticipated threats to the validity of my interpretations and arguments. To this end, I have presented my response to a series of challenges or threats I could imagine being levied against this study.

Relationship to Actual Online Communities

What does anything in these books have to do with what is happening or has happened in particular online communities?

The approach to this topic loses some of the direct value and ecological validity that one would get from studying a particular community or a set of individual communities. With that said, given my interest in the discourse that creators of these communities are engaged in, these books provide direct access to that discourse. Since I am interested in the network of ideas and theories about how to design and create these communities I am focusing on places where these ideas are made explicit and published. Books for people who want to create these kinds of communities are a great source for that kind of information.

The Stories in the Books are Rehearsed

The guidebooks do not represent what people who implement these tools think; they are at least one level removed from the actual thoughts of implementers. Further, the kind of post hoc ideas about the software that come from the guidebooks do not represent what the authors thought at the time, they have been extensively thought through and processed into the stories they present and thus do not accurately represent what they thought at the time.

The guidebooks present widely broadcast sets of ideas about online communities. As such they do not represent any kind of normal or average implementer's ideas. With that said, these books have generally been written by individuals who have successfully managed and built communities. In this respect, the anecdotes they share are valuable sets of information about their experiences. Further, recognizing these books as the work of boosters, this material is in some ways more important than the thoughts of any individual community implementer as it is the advice that anyone looking to start a community site would find.

The point is important. The books do not offer direct insight into implementer's beliefs and ideas. The anecdotes presented in the guidebooks cannot be thought of as authentic first-hand accounts from normal developers and administrators of online communities. Instead, they must be understood as illustrative examples. There will be legitimate kernels of the original experiences of these individuals in these stories, but those are not the real value of the stories. These stories themselves are important cultural tools for defining how these systems should work and what roles each individual plays in those stories. To that end, it is important to treat the stories less as accurate reports of

historical events and more as mobilized experience reified and distilled into cultural scripts that accomplish work. Since the ideas in these works were intended to be *used*, they are more likely to represent the author's actual beliefs.

Authors of Books Aren't Normal Designers/Developers

People who write these kinds of technical books are not representative of "everyday" designers and managers of online communities so wouldn't it make more sense to interview more "everyday folks".

I am not primarily interested in these books as accounts of designers' thinking, as previously mentioned, rather I am interested in these books as key nodes in the discourse of design and management of online communities. While these authors are not average folks working on these kinds of communities, they are important voices in the field and their books are the references that everyday folks would turn to consult. With that said, this is an important limitation. Most people who set up online communities do not write books about setting them up, so the perspectives in these books should not be construed as being universally shared. The ideas in the books do, however, come from individuals working in this area and are also being broadcasted to others in the field through these publications.

Representing Distinct Authors' Perspectives

28 books is a lot of different authors' voices. How can you be sure you are adequately representing each of the authors' individual perspectives?

Each of these books represents an individual author's take and perspective and doing justice to 28 different voices over 22 years is a challenge. My analytic process involved two explicit components to help try and address this issue. First, as I started to develop a sense of thematic points and apply them to the books, I would go back to each book to seek out discrepant evidence. Before categorizing a book as representing one perspective or another I worked to identify what kinds of statements and claims in the books would invalidate the claim I wanted to make and searched the sections where one might find that kind of information. This approach helped me to qualify and refine claims about the texts. Aside from this, when I put together my analysis, I worked to recontextualize my presentation of an author's work in the context of their given project and goals. Most of my reporting involves substantive retelling of authors' ideas, with significant block quotes to present the rich data for readers to interpret themselves.

Respecting the Diversity of Divergent Perspectives

How can you be sure you are representing the diversity of perspectives in the books?

Given that I have purposefully selected these books to represent different moments in time, different professional perspectives, and somewhat distinct but related audiences I have worked to make sure that that diversity of perspective is represented in my analysis as well. So, to make sure that diversity is present, I have worked to include some analysis and discussion of each of the books or at least of representing a diversity of

distinct perspectives on each topic, and to explicitly look for divergence in perspectives within the texts I have analyzed.

Why Should I Trust your Interpretations of these Authors' Ideas?

This kind of qualitative research requires a significant amount of trust in the researcher. Why do you warrant this trust and what are you doing to manage your own biases.

As previously mentioned, I worked as a community manager for the Zotero open source software project's online community for five years. Given this experience, I approach these books as someone who comes from their intended audience. Inevitably, I interpret these books through that experience. I see this as a value added to the project. As someone in the target audience for these books my own reactions and thoughts about the books are a valuable part of my ability to interpret the works.

In practice, one of the biggest challenges of analyzing these how-to books is that they there are significant assumptions of technical knowledge. So much so, even their "clarifying" analogies can be difficult to parse. For example, one of the books uses the notion of "read" and "write" in hard drives as a way to explain different kinds of online communities and several of the books take ideas and language from computer networking and relational databases to describe relationships between members of online communities. In both cases, without insider knowledge about these idioms it would be easy to misread where these ideas are originating from. In short, my experience as part of the audience for these books helps me to take on the role of a translator/interpreter.

My experience is also something to raise some concerns. As a practitioner in the field and as someone who has researched online communities as informal learning sites I am clearly no longer an average member of this community. To this end, it is particularly important for me to clearly support any claims and arguments I make with evidence from the texts. Further, by explicitly seeking out counter examples and negative cases I have worked to ensure that I am not simply cherry-picking cases to support a particular argument. Again, my approach to trying to represent and share as much context and perspective from the authors of the books is intended to invite a reader of my research report to get relatively direct access to the texts. To be sure, the organization and structure of this work is directly informed by my perspective and approach, but similarly, I have tried to make the process of developing that structure as transparent as possible.

CHAPTER 6: ANALYSIS AND RESULTS

In the iterative process of reading and analyzing the books for this study, I decided to take two parallel approaches for presenting the results of this research. My analysis is organized into two sections, one chronological and one thematic, according to different kinds of functionality in the software supporting online communities.

The first section, titled “ Rhetorics of online community”, is a historical presentation of how the idea of online community developed over a forty-year period, from the earliest BBSes through the present. The chronological approach allows me to establish and illustrate tensions between different notions of online community as they developed over time. The result of this presentation is an argument for understanding the logic of online community not on the terms of governance and social contracts but in terms of permission and control. This section is primarily concerned with establishing the ideology and values at play in the definitions of online community (Research question 1).

The second section, “Permission and control”, examines how the owners and administrators of online communities get their users to do what they want them to do. This section specifically explores and documents the role that visual design/information architecture, moderation tools, and reputation systems play in enacting control. This section is primarily concerned with establishing the tactics by which the ideology and values of online community are enacted (Research question 2).

Note on Technical Jargon and Vocabulary

As technical books generally writer for an audience of information technologists the amount of assumed shared knowledge and context in these works is significant. Throughout both the historical and thematic sections of my analysis I have done my best to make that technical language and discussion of systems legible to a reader without insider knowledge of these systems. With that noted, I have also attempted to present these authors perspectives as authentically as possible, retaining their words and explicating them. The results of this approach are inevitably somewhat uneven, but I have worked to focus in particular on explaining and contextualizing concepts and terms I see as most critical to the issues at hand in this study. As a result, I would ask readers to try and not get hung up on particular terms and concepts that may be less fully defined than others as they are likely not particular points of analytic focus.

Rhetoric's of Online Community, A Brief History

Community Memory, arguably the first computer bulletin board system, was launched in 1973 in Berkley California. Their brochure explained that "strong, free, non-hierarchical channels of communication—whether by computer and modem, pen and ink, telephone, or face-to-face—are the front line of reclaiming and revitalizing our communities." Over the following forty years, considerable ink has been spilled over how community can or cannot exist online. The visions, rhetoric, and descriptions of online community over this period allow one to step outside the current moment and unpack the ideology behind how we currently think about online community.

The term “Community” brings to mind notions of belonging, shared interests and values, and governance. The goal of this section is to provide a concise history of some of the visions and tensions in how online community is defined and developed in these technical books. Technical books and how-to guides for starting and managing online communities offer a window into how ideas of community have been negotiated and defined in this forty year period.

In providing this history, I focus on how definitions and visions have developed in a series of distinct periods; the BBS era, the early web, the emergence of online community platforms, and a recent shift to using the term “social” over the term “community.” Each of these periods marks significant changes in how community has been defined and developed. However, this chronological story does more to clarify tensions between a set of persistent themes evident to different degrees in each of these periods.

In the books analyzed, online communities largely fall into a spectrum of definitions between two visions. On one end, online communities are envisioned as utopian places where frictionless forms of “electronic democracy” can flourish. Taking the notion of “electronic democracy” seriously, users in these online communities would be citizens. The other set of texts present community as something that is “owned,” where members are not so much members, or even customers, but are instead reduced to “users.” In many cases, these two opposite ideas of online community can be found in different parts of the same book.

Over time, a trend emerges where a technical definition of community emerges and flourishes. When talking about online community, “community” is often, a set of

features in a particular application, or something that is created by a set of technical features. For instance, when one author explains that the phpBB web forum software “allows website owners to add a community to their existing site within minutes” (Mytton, 2005, p.1) community is a feature set, and not something that forms over time through social interaction. In either case, over the course of the history of these books, “community” itself increasingly becomes the object of design. It’s not that the goal is to design functionality of websites, but to design a set of features that prompts people to interact as the designer would like them to.

Below I have provided a graphic organizer of the set of shifts and developments overtime in discussing online community in these books. It’s an oversimplification, but it can serve as a point of reference to help keep a reader from getting too lost in the details of the particular historical sections. From left to right, the diagram presents a spectrum between the democratic/communitarian impulse to think of online community as something that emerges through social relationships and the development of norms, rules and governance of members and the controlling/authoritarian/corporate impulse to think of online communities entirely as the property of the site creator/designer/administrator. From top to bottom, the organizer presents the forthcoming sections based on the eras I have identified in the history of these books.

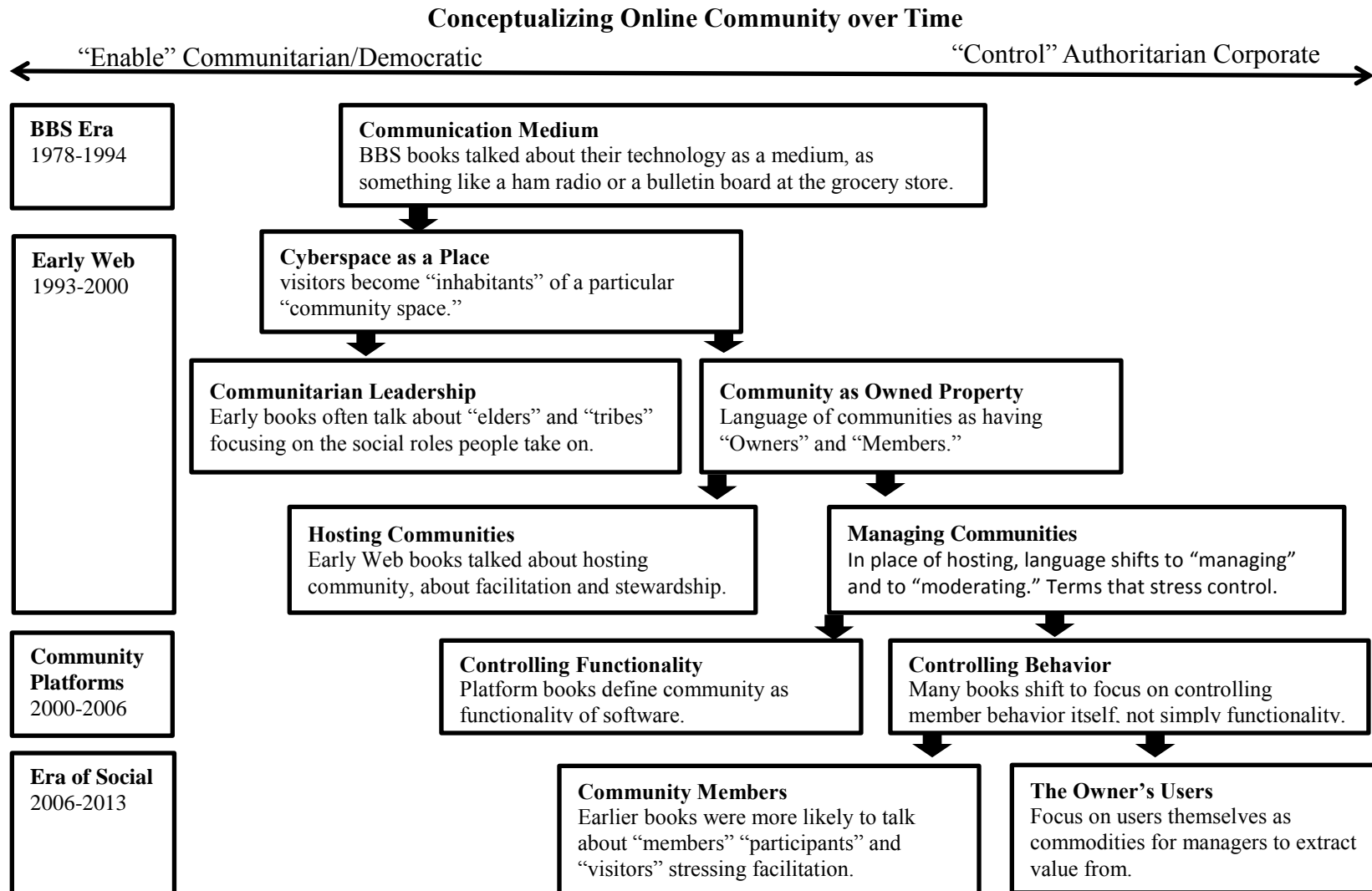


Figure 2: Conceptualizing online community over time. A diagram illustrating themes identified in this dissertation and how they map onto communitarian and authoritarian polarities over time.

The BBS and the Sysop (system operator). “Finally, into our hurried, harried lives now comes a computer solution that is compelling because its simple concept is already familiar to us: a computerized bulletin board.” So opens Bowen and Peyton’s 1988 book, *The Complete Electronic Bulletin Board Starter Kit*. From the late 1970s through the mid-1990s computer bulletin board systems were the platforms on which the features of online community software were developed and defined.

There aren’t many published books from the early phases of BBS development. Tom Mack, one of the creators of the RBBS-PC (Remote Bulletin Board System for the Personal Computer) software application, explains in the introduction to *The Complete Electronic Bulletin Board Starter Kit* how grateful he is to have this book out there explaining how to use the software he helped create. He is thrilled that “users no longer have to depend on contacting” him on the phone to answer their questions about the RBBS-PC. As he explains, “the biggest fan of *The Complete Electronic Bulletin Board Starter Kit* will be my wife and long-suffering supporter, Sheila, whose license plates read “PC-Wido” (Bowen & Peyton, 1988, p. x). While BBSes had been around for a decade, they weren’t written about for general publishers until this 1988 book. The publication of *The Complete Electronic Bulletin Board Starter Kit* illustrates the transition of the BBS from a fringe technology to a mainstream one.

The conventions that define online communities, posting and sharing messages in threaded discussions, were established in the era of bulletin board systems. Electronic bulletin board systems had a practical utility but also came to represent larger ideologies of an information future. These systems consisted of software installed on an individual

computer that other users could connect to via a modem. The individuals who ran these systems were called system operators, or sysops for short. Where one now talks about online communities having users, given the nature of their connection to the discussion board, the users of BBSes were called callers.

Many of the books explaining how to set up and run online communities on the Web in the last 20 years begin by explaining the roots of their systems in BBS software. As such, it's important to contextualize discussion of online communities in consideration of BBSes. BBSes were first and foremost places where callers could read and post text-based messages.

From the caller's view. For many readers, the experience of the Web will likely make it difficult to imagine exactly what the experience of using these bulletin board sites was like. The following description from Chamber's 1995 book, *Running a Perfect BBS*, can help provide a sense of what connecting to different BBSes would feel like.

Think of a typical evening spent calling other bulletin boards; your first call during an online evening might be to a local gun enthusiast's hobby system, where you might join in a discussion for or against gun owners' rights. The next call might connect you to a long-distance profit system; if you subscribe, you probably spend the duration of the call listing the new files made available during the last week and downloading the files that catch your eye. Finally, you might login to and other local board patterned after a coffee house that specializes in online chat and FidoNet messages. You'd probably find five or six users conversing with the sysop in the

Chat Lounge, and you might join in before you downloaded your FidoNet mail using the system's .QWK door. (Chambers, 1995 p.19)

Each of these individual BBSes would likely be running different pieces of software, configured and customized toward particular ends. Aside from making separate calls to each of these distinct BBSes, the story above reads very similar to how someone might now use the web: Going from site to site to engage in discussion of gun rights, downloading files, and check email. The important difference here being that a user would call into these discussion boards one at a time, where someone today could well have a range of different sites or forums open in different Web browser windows or tabs.

BBSes as part of an online world not distinct online communities. Books about BBSes do not use the term “online community” to describe these systems. The idea of these systems as online communities is a label that has been retroactively applied to them. Chambers (1995) talks about an “online world,” but in doing so he describes the entirety of the world of different BBSes he might call up from his home. The term online community did not broadly come into usage until the early 90s.

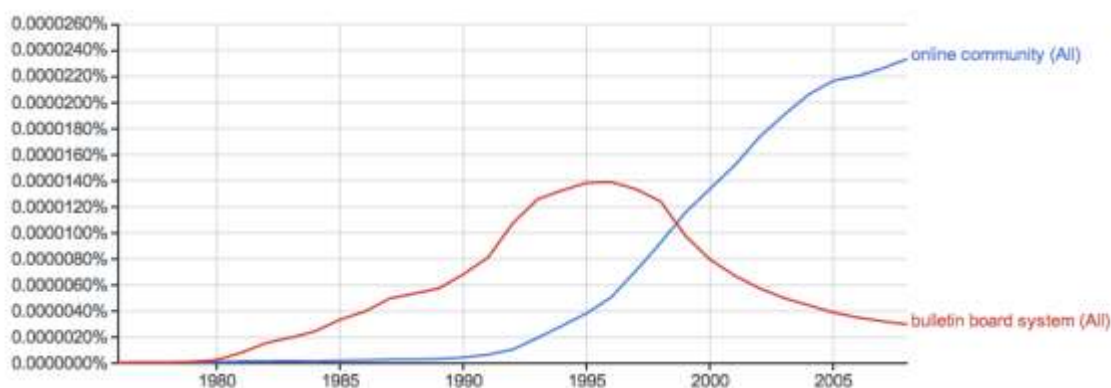


Figure 3. Online Community and Bulletin Board System in Google N-gram. Illustration of relative frequency of terms “online community” and “bulletin board system” in the Google Books corpus.

It wasn't until the late 90s that the term “Online Community” would come to prominence over “bulletin board system” in general usage in books. Figure 1 shows the frequency of each term in books published between 1976 and 2008 in Google's n-gram corpus. The tiny percentages show the relative frequency of each term in the corpus of books Google has digitized and normalized to support their n-gram viewer tool. It illustrates how the term “bulletin board system” came into use before “online community” and then began tapering off. These terms make up a very tiny portion of the corpus of books, but the trend tends to confirm the idea that online community as a term came into use several years after BBSes had. Online community overcame bulletin board system as a concept as the Web matured.

BBSes as a communication medium. Instead of describing BBSes as platforms for community or as communities themselves, BBSes were largely presented as mediums for communication. In *The Complete Electronic Bulletin Board Starter Kit*, Charles Bowen and David Peyton provided examples of the range of practical uses a BBS could serve. For example, “A hospital sets up an RBBS-PC as a community service,” or “A

group of local relatives” use a BBS to share info on a private board, or “A mother and father with college-age children...create a BBS in the basement as a never-closing communication line for the kids” or “A public school system creates a multiuser statewide network to discuss education issues with parents, teachers, and students” (Bowen & Peyton, 1988, p. 5). In practice, these bulletin board systems served valuable and practical opportunities for quickly sharing information. In the same vein, John Hedtke, in his 1992 book *Using Computer Bulletin Boards*, describes the BBS through analogy to other communication media. He explains, “BBSes are used in many different ways.” For example “Like a cork bulletin board, they can be used to post pieces of news, humor, and notices.” However, “Many BBSes are like CB or ham radio, you can have a conversation with one or more persons by typing messages back and forth to each other.” (Bowen & Peyton, 1988, p. 2). In these explanations, BBSes are a communication medium not platforms for community or defined as community in their own right.

Understanding BBS nation as the online world. With that noted, in the 1992 book *Bulletin Board Systems for Business* Lamont Wood and Dana Blankenhorn did go on to define the collective network of BBSes as part of “BBS Nation.” In their words, “In opposition to services such as CompuServe, Prodigy and BIX” there are “millions of newly minted computer users” who have “preferred to dial into BBSes set up by their neighbors, leading the growth of a (virtually underground) BBS nation” (Wood & Blankenhorn, 1992, p. 5). While there were a range of systems like Prodigy and CompuServe establishing networks for individuals to communicate, discuss and share information, Wood and Blankenhorn were thrilled to note that in 1992 the underground network of BBSes served as a more grassroots network of communication. In this sense,

the BBS nation functioned as one whole large online community, a network of networks of discussion and information.

Individual BBSes were connected together through systems called Echo Nets. As David Wolfe explained in the 1994 book *The BBS Construction Kit: All the software and expert advice you need to start your own BBS today!* “Even a small BBS can be hooked into a large eco net (a network designed for the sharing of messages between a vast number of BBSes), which will give users the ability to talk with people around the world” (Wolfe, 1994, p. 1). In this sense, BBS Nation already looked a lot like the World Wide Web, which was at that point was coming on the scene.

The peak of the BBS came in tandem with the technology that would mark its end. Alan Bryant in the 1995 book *Growing and Maintaining a Successful BBS: The Sysops Handbook* notes that “it wasn’t until the 1990s that BBSes really took off” when “Recognition in the mass media, expanding modem speeds, and continuing improvements in software like graphical interfaces, caused the BBS industry to light up” often “riding on the coat tails of the Internet” (Bryant 1995, p. 3).

In considering the future of the BBS in 1995, Bryant suggested that it was important to think about “what they accomplish” instead of “how they accomplish it.” He identified the features of the BBS primarily as platforms for “messaging, transferring files, displaying information, and gathering information.” Based on these features, he explained, many “commercial online services (such as CompuServe and America Online) as well as some Internet service providers could be called bulletin board systems if you chose to look at them that way.” (Bryant, 1995, p. 4). In this sense, the functionality of the BBS lives on in the various platforms that have come to replace it in usage. In Bryant’s

words, “some people think the Web makes a better BBS than a BBS does, especially when combined with other Internet features” (Bryant, 1995, p.5). In considering the future of the BBS he rhetorically asked, “Will there be better connectivity between BBSes and the Internet than exists today? Definitely. Will BBSes go away? I doubt it. No matter what the place or nature of the changes that are coming, bulletin boards will remain an important part of the computer communications scene for decades to come” (Bryant, 1995, p.14). If we take the broader definition of the of features, then Bryant’s prediction has come to fruition. There are indeed many online discussion and bulletin board systems running on the Web today. With that said, the bulletin board that individual users call up rapidly became a thing of the past in the latter half of the 90s.

BBSes as electronic democracy. For the most part, books about BBSes describe them as a practical tool for sharing messages. Bowen and Peyton, in 1988, explain that the BBS is a “practical solution to assorted ‘real-world’ communications problems” (Bowen & Peyton, 1988, p. 5) however, the authors also make much bolder claims about what BBSes represent, “bulletin boards like RBBS-PC are also an encouraging example of electronic democracy: they provide a low-cost means for every PC owner to have his or her own soapbox and an audience with the nation. Also, they illustrate how strangers can cooperate in the free exchange of information” (Bowen & Peyton, 1988, p.5). Here democracy becomes everyone having his or her own soapbox, that is, everyone who can set up and run his or her own system.

For context, the idea that one could set up a communication network for sharing messages on your computer was powerful, but what about it made for electronic democracy? One had long had the ability to call just about anyone with a phone, so what

made the BBS “democratic”? Already in the era of the BBS we see the notion of computer-based networked communication as implying the potential for a new kind of social interaction. The disjunction between the practical focus of a technical book about running a BBS to stay in touch with your family and the idea that the BBS embodied and empowered some new mode of democracy suggests that imagination was already well ahead of the state of the technology. The future potential of the technology was already focusing attention on the kinds of online communities we would create.

Given that visions of online community were already taking shape in a notion of electronic democracy, what kinds of norms and rules were emerging for ensuring that this space was fair? In discussing the configuration options of a particular bulletin board software package, Bowen and Peyton make suggestions for how to configure certain options that would serve as gatekeepers, letting in particular people and keep others out. The software came with a configuration feature that allowed the sysop to “Deny access to callers who use 300 baud” as they go on to explain, “Frankly, some sysops think that those logging on at 300 baud are more likely to be juvenile in their outlook and thus leave childish messages or try pranks. (Of course, this theory is weakening as the price of faster 1,200-baud modems comes well within the reach of us all” (Bowen & Peyton, 1988, p.75). By setting this configuration option, the system could automatically deny access to anyone who had too slow a modem, with the stated assumption that people with slower modems were believed to be younger individuals or people who aren’t keeping up newer modem technology. Bowen and Peyton “suggest you answer no to this question and allow in all new users” as “you still reserve the privilege to shut that gate later by revising this parameter, so why not give everyone a chance at first?” In short, they provisionally

suggest leaving the system open. Here, we see the logic of this particular system and those that come after it in terms of control and management.

As one reads through the configuration options of any particular BBS these kinds of configuration options enable the sysop to set up the baseline rules of the system. One can decide to set an option to let in people based on the way the system sees those who connect to it. In this case, because the modem's speed is given to the sysops system that information becomes a way for a sysop to make judgment calls about the kinds of people that are represented by the differences evident in the signal their system receives. This is indeed a place for a user to create their soapbox, and they are free to choose who can and cannot connect to that particular soapbox.

BBSes and free information ideology. “The idea behind BBSes was a sharing of information for free” Bowen and Peyton explain early in their book (1988, p.6). Furthermore, “The spirit of openness was imbued in telecomputing from the very beginning” and more specifically that “RBBS-PC itself carries on that philosophy, with the free exchange of information being one of the principles behind – and an essential means to this remarkable program's development” (Bowen & Peyton, 1988, p. 7). It was still ten years before the term “open source software” was coined, but BBS software that Peyton and Bowen shared was already a part of the free software movement taking shape in the 1980s.

Many of the tools at the basis of online community have their roots in the free software movement, as do many of the values that govern and organize how their designers and administrators think about information. This free software and free information undercurrent persists in thinking through what should and shouldn't happen

in online communities. While this remains an important undercurrent in the development of online community it is rarely stated in the same way it was in Bowen and Peyton's 1988 book. From their perspective, the spirit of openness was a key part of telecomputing from the beginning. This vision of information and communication informed the development of norms and values in how these technologies have been used.

Community on the web takes off. The late 1990s saw the publication of a series of books explaining how you too could create your own online community. In the 1997 book *Virtual Communities Companion; Your Passport to the Bold New Frontier of Cyberspace* Karla Shelton and Todd McNeeley explain "the Internet is a powerful medium for much greater things than just archiving data; it's a place to interact, to live, to build community" (Shelton & McNeeley, 1997, p. xxiv). Similarly, in the 1997 book, *How to Program a Virtual Community: Attract new Web visitors and get them to stay!* Michael Powers explained, "A virtual community is simply an electronic meeting place where a group of people gather to exchange ideas on a regular basis" (Powers, 1997, p. 3). Where the BBS books described an "online world" or other previous books might describe "community networks" that connected members of existing communities, "virtual community" and "online communities" created as a result of the networked technology itself is primarily a feature of these discussions of the early web.

The idea of online community was anchored in the notion of "cyberspace"—the now out-of-fashion idea of a virtual cyber environment that functioned much like physical space. Discussions around cyberspace took on a kind of spiritual rhetoric, and the idea of online community was imbued with high-minded rhetoric. Coined by William

Gibson in 1982, and made popular in his 1984 science fiction novel *Neuromancer*, cyberspace offered a vision of the future of networked human interaction. With that noted, the concept of cyberspace does not show up in any of the BBS books. The books about online community from the late 1990s are the ones that operationalize this notion from science fiction and use it to define online community. In this operationalization of cyberspace, the conception of online community had a hierarchical and possessive mentality, there were “owners” and there were “members” and the somewhat utopian vision of finding meaning and belonging in these online communities coexisted with the idea that these virtual hubs of belonging would be owned and managed for the benefit of whatever company decided to establish them.

The language of networking in the language of community. In a chapter of the 1997 book *How to Program a Virtual Community* titled “Meeting your Neighbors in Cyberspace” author Michael Powers provides a general explanation of how the Web becomes a place for community to happen. In doing so, he maps the language of the networking principles that enable the creation of the Web onto the language of describing online community.

While an HTML Web site delivers information to visitors (forming a single Web host-to-visitor link), a virtual community provides a location for visitors to enter the Web site and form a community (creating a many-to-many link among the visitors). The visitors then become inhabitants of this community space. In this mode, the community forms around the information or material that interests them. The Web site host, by

providing an interesting location, gains a community of likeminded customers, students, or business managers who regularly travel to the site to gain information and meet others. (Powers, 1997, p. 4).

We don't generally think of community in terms of many-to-many or one-to-many: these are terms from the principles of networking and databases. It is the language of a data model. As the idea of online and virtual community was being invented, it was being infused with the language, rhetoric and vision of the networking technologies that enable it. Powers is suggesting here that the individual hosting the website has the opportunity to turn that site into something more than a "brochure" a term he mentions elsewhere in this context, and make it into a "community space." The term "space" here is significant as it signifies a particular vision of the Web.

The chapter title, focusing on cyberspace, is part of a reimagining of the nature of networked communications. Where the BBS books talked about their technology as a medium, as something like a ham radio or a bulletin board at the grocery store, the language found in Power's book, focusing on enabling the many-to-many relationship between visitors to your Web site turns those visitors into "inhabitants" of that particular "community space." Powers is using the language of data relationships and databases as a framework for explaining what a community is. More than a mode of communication, this becomes a virtual place. This book is unique among the other books on running your own online community in that it traces the idea of online community back to MUDs (Multi User Dungeons/ Domains or Dimensions): the real-time virtual chat environments dating back to the late 1970s that were often used and created as places for fantasy role

playing games. The fantasy worlds and virtual places of these Multi User Dungeons provide a key part of the vocabulary for defining the Web as cyberspace. Where the BBS was a communication medium, the Web was taking on characteristics from these virtual fantasy worlds.

Spirituality in cyberspace. Some of the discussions of online community in the late 1990s books seems contemporary, but some of it already reads as particularly dated. Shelton and McNeeley begin their book by asking: where is online community happening? “We have two answers. First, it’s obviously going on in cyberspace, where geography isn’t important; where those in California become friends with those in Maine” (Shelton & McNeeley, 1997, p. xxiv). The authors value the erasure of geography provided by discussion boards. Communities are no longer bound by proximity; they are bound only by shared interest or affinity. The authors go on to further explain, “in cyberspace, it’s happening on HotWired and iVillage, on IRC and AOL, and it’s already happened on The WELL. It’s even happening at Intel and Compaq. There is hardly an aspect of the internet that isn’t affected by this new universal focus on community” (Shelton & McNeeley, 1997, p. xxiv). Here, we see that cyberspace is bigger than the World Wide Web, HotWired and iVillage are two Web sites, but IRC (internet relay chat) is a separate protocol for communicating via the internet and AOL, while providing access to the web, also provided it’s own suite of chat rooms and services that were not part of the open web. While online community will increasingly become a term for Web based communities, in this book, and some later books, it is a broader reference to any range of modes for communicating through a range of telenetworking tools. The mention of the WELL is important, as this particular site has become a touchstone in all

kinds of books about online community. I will return to reflections on the WELL shortly, but back to unpacking this notion of cyberspace in these texts.

Shelton and McNeeley ask another rhetorical question. Why is this happening? They explain, “Because, beyond the byte and the baud, past the silicon, further than the software code, on the other side of the screen, there are humans. And humans want to live together and talk and laugh and cry and feel” (Shelton & McNeeley, 1997, p. xxiv). Descriptions of the Web in books from the late 1990s persistently focus on the emotional potential of the web. Aside from being a place to “laugh and cry and feel” in the forward to the book, Jon Katz a contributing editor for *Wired*, explains that the Web can be “a powerful emotional, even spiritual, experience.” Amy Jo Kim, in the 2000 book *Community Building on the Web: Secret Strategies for Successful Online Communities* explains that the “net” makes it easier to “deepen relationships” and “meet like-minded souls” (Kim, 2000, p. x). Where BBS books had mostly just described how a particular piece of software could help you better connect your sales force, or your church, or serve as a message center for your family, books about online community in the late 1990s were selling something much more grand: A cyberspace that could serve as the platform to meet our most basic human emotional needs; a place to commune with like-minded souls.

The image below, Figure 4, illustrates the vision of community and society that premeditates writing about cyberspace from this moment in time.



Figure 4. Vision of Community in Cyberspace from the cover of *Virtual Communities Companion Your Passport to the Bold New Frontier of Cyberspace* 1997, Shelton & McNeeley

This image, from the cover of the 1997 book *Virtual Communities Companion Your Passport to the Bold New Frontier of Cyberspace* Karla Shelton and Todd McNeeley shows a set of glistening translucent avatars walking around in a three dimensional town square. In the distance we see high-rises, but up close we see seven different virtual people, some walking about, one sitting in a park and another at a table outside a virtual café. As Amy Jo Kim explains in her book, “The Web is becoming our collective town square – more and more, people are turning to Web communities to get their personal, social and professional needs met” (Kim, 2000, xi). While the

specifications for the Web set up rules for transferring information and establish a communication medium, the authors of these books were invested in making clear that what had really been created was the place less place of cyberspace; a non-geographic and boundary-less place in which we could find spiritual fulfillment for the soul.

The books have a guru like quality to them, telling us about how we can all find enlightenment on the web. However, written by developers and consultants who make their money providing their visions to companies they are also about how this new “frontier” might turn a profit. Discussion of who owns these spaces brings an important contrast to this vision of a utopian emotionally charged cyberspace.

The owners of community. “Successful communities evolve to keep pace with the changing needs of members and owners” so proclaims Amy Jo Kim in the first pages of the 2000 book *Community Building on the Web* (Kim, 2000, p. 3). While the Web might provide an amazing set of experiences the most fundamental categories of people in cyberspace in Kim’s book are the owners and the members. Elsewhere Kim referred to online communities as “town squares” but these are clearly not civic spaces. In these books, online communities are owned facilities in which members can do things only to the extent that the owners allow. The word choice here is important. Owners are not stewards, or leaders of the community. Owners are not community elders (a term Kim uses elsewhere for a particular kind of member). Owners own the community. Where it might be normal to think about owning the facilities where a community meets, it is something quite different to think of community itself as property.

Kim goes on to explain that the owners are “the people who will be funding and /or running your community” (Kim, 2000, p.10) and stresses that it is important to

establish their goals for the community. The goals would be different in different situations. For example, is the community “a business venture? A labor of love? A PR stunt? A research experiment?” (Kim, 2000, p.11). The idea of community in these terms, as a stunt, a research experiment or a business venture, reframes some of the utopian values expressed throughout these books. These are at once experiments and PR stunts created by developing software that people use, but the software that structures, mediates and stores, and creates the experience of cyberspace is set up and run by and for people who own the software and hardware and pay the bills.

An example of how these relationships play out and how Kim suggests designing to meet the owner’s and members’ needs comes in the form of a case study she provides about an online community created to help the makers of L’Eggs pantyhose sell their product. It is worth considering this case study at length to establish how the competing interests of members and owners come together:

It’s especially important to be clear about your vision if you’re trying to attract a particular audience. The makers of L’Eggs pantyhose discovered the importance of this principle in 1995 when they launched an ambitious, expensive Web site for the purpose of fostering brand loyalty and learning more about their market. To develop closer relationships with their customers, they included a discussion area called “The L’Eggs Community.” Much to their surprise, the discussions quickly became dominated by men who enjoyed wearing pantyhose and were thrilled to discover an anonymous setting where they could trade tips and not feel so alone in their somewhat unusual habit. The company that financed the

Web site, however, was less than enchanted with this turn of events. The women they were trying to attract were put off, and shied away from participating in the discussions. Since then, the L'Eggs Company has learned to market more explicitly to its target demographic. But the point remains: unless you communicate your purpose clearly, people will use your Web community in ways that you never intended. (Kim, 2000, p. 22).

In short, a pantyhose company created a website for their customers to communicate with each other, but when those customers turned out to be men and not women, the company was not happy. Even though the discussion boards were building a community and brand loyalty, the people in the community were not the desired people. The discussion board was shut off. Some might object to the notion of software on a pantyhose website where customers talk about the product as “community” this is exactly what online community often came to mean in the late 90s. While this could have been quite useful to the men who wanted to talk anonymously about wearing pantyhose, while it might have been meeting their needs, as the community itself is owned by the company it's easy for them to just turn it off.

What advice would Amy Jo Kim offer to L'Eggs? How could they, as the owners of the community, have better controlled the outcomes of the community to meet their needs? She suggests, “Imagine if the L'Eggs community had used a tag line like iVillage's “Real Solutions for Women,” their site would have evolved in a very different way” (Kim, 2000, p. 22). In something as simple as how they described the tagline, Kim suggests they could have dissuaded these men from coming together to talk about

pantyhose. Who knows if this would have worked or not, but the point reinforces the ideology of “community building” (the title of the book) she envisions. Elsewhere she suggests that “It’s up to you to figure out the restrictions that best meet the needs of your members and support the kind of community you are trying to create” (Kim, 2000, p. 71). The entire process of design is about establishing the kinds of restrictions, the visual and textual queues that establish who is and isn’t welcome and how they should behave. As the owner of the community it is your possession, and in this description even the members are yours.

Bozos in the Well. Books about online community frequently discuss “The WELL:” The Whole Earth 'Lectronic Link, created as a BBS in 1985 by Stewart Brand and Larry Brilliant, is still in operation today. It calls itself the “the primordial ooze where the online community movement was born.” Howard Rheingold’s 1993 book, *The Virtual Community: Homesteading on the Electronic Frontier* left a mark on many who have gone on to write about online community and Cliff Figallo, one of the early authors of books about online community, had worked directly in The WELL.

It’s worth digressing for a moment to unpack some of the significance of the creators of the Whole Earth Catalog playing such an instrumental role in defining some of the features and functionality of online communities. Published between 1968 and 1998, the Whole Earth Catalog listed products that promoted a self-sustainable way of life. Environmental historian Andrew Kirk argues that the publication played an important role in redefining the environmental movement, shifting away from an anti-technology stance to a pragmatic countercultural green that embraced the role that technology could play in redefining the relationship between people and nature. The

catalog played a role in defining a quintessentially bay area countercultural movement focused on a mixture of environmental sustainability, an embrace of technology, and a strong sense of individualism. It is in this context, part green counterculture and part techno libertarian entrepreneur, that the functionality of online communities on the Web was defined.

Many of the books on online community, even those published in the last few years trace the origin of online community back to The WELL. Reflections on The WELL in books about running online communities often bring up a tool called “the bozo filter” and the adage that it was “tools not rules” that should shape community interaction on the web. These two concepts illustrate a cultural logic that was coming into shape.

Shelton and McNeeley (1997) admire the WELL and Electric Minds, a site Howard Rheingold created after his experience with the WELL, for having a “framework for a policy for dealing with potential problems.” One of the guidelines they quote explains, “We believe in the axiom “tools, not rules,” so rather than tell you what to do, we give you the ability to do things, and let you decide how and when to do them.” This mentality moves away from ideas like governance into a focus on individual’s asserting control of what they see and experience. They go on, “For example, we provide you with the “bozo filter,” which you can use to make the words of a specific user disappear from your view without censoring them.” (Shelton & McNeeley, 1997, p. 401). The heart of this concept is a strange kind of technology-enabled libertarianism: If we could just build the right tools to block out what we don’t want to see, anyone could do whatever they want to do.

Hosting vs. managing. In contrast to Jo Kim's ideas about owning community, Cliff Figallo (1998) used a term that he and his colleagues from the WELL weren't able to get to take off as much as the "bozo filter." The title of Figallo's 1998 book *Hosting Web Communities: Building Relationships, Increasing Customer Loyalty, and Maintaining a Competitive Edge* focuses on the idea of hosting, not owning, Web communities.

The idea of hosting is itself a central focus of his writing. "*Hosting* is an appropriate term for inviting users into a virtual location and treating them as guests. It's a service role with a purpose, which is to make the guests feel comfortable, appreciated, and, in some cases, empowered" (Figallo, 1998, p. xi). The conception of a host inviting in guests is fundamentally different, and the fact that the term only appears in two other books (Derek Powazek's 2002 *Designing Online Communities* briefly uses the term, largely because the book includes discussion of Figallo's book and an interview with Figallo, and Powers 1997 book also uses the term, which I will discuss shortly) underscores this idea as a bit of an alternate reality for how online communities might have been conceptualized. From the conception of hosting, the people who participate in a site aren't members, they aren't users; they are guests invited into your space to be made comfortable and appreciated.

In further defining the role of host, Figallo explains, "The hosting role can be that of a master of ceremonies, a meeting facilitator, or a digital custodian. There may be elements of entertainer, justice of the peace, and group therapist in the host's job description, but in any case, the host should be a liaison between users and site management" (p. xiv). The notion of site management brings in the idea of the "owners"

but each of the roles he describes, facilitator, entertainer, etc. they all orient the nature of the exchange around the idea of service to guests.

The role of host is also tied to another notion largely absent from books about online community, the notion of governance. Governance, the idea of a process by which decisions are made by members of a group, is at the heart of the idea of community but it is largely not to be found in books about the concept of online community. The two exceptions to this offer an important place to think through a different conception of community, one from 1997 discussed here and another from 2009 discussed in a later section.

The idea of site owner as playing host to guests or visitors also appears the 1997 book *How to Program a Virtual Community* under the heading “Meeting your Neighbors in Cyberspace.” Here, author Michael Powers devotes a section to the notion of governance, suggesting the importance that someone interested in establishing an online community should place on working with members of the community to define and establish rules for governance. He notes that many online communities are effectively dictatorships, but that there are democratic roles that these communities can take too.

What sense is there to the idea of corporately owned communities? Of pertinence to the discussion of the difference between hosting and owning communities, Powers makes this insightful statement about for-profit endeavors to establish online communities, suggesting, “it will not be possible for a brand-name jeans manufacture to host a democratic community with any true assurance that the needs of the company will not override the autonomy of the community” (Powers, 1997, p. 227). In this case “This virtual community is just like a real life situation in which a profit-driven company

provides space for a group of people,” these corporate owned online spaces are explicitly dictatorships run by their owners, a point that was not discussed in any other books about running an online community.

The period at the end of the 1990s, when the idea of online community was conceived is also the period when the term was largely defined into a notion away from governance and hosting that would have been much more in line with the ideals of community we tend to bring to the term in everyday life. It is telling that Powers insisted that “Every virtual community on the Internet, whether for profit or not, should provide a social contract in writing to inhabitants before they join the community” (Powers, 1997, p. 234). This makes sense from the perspective of someone envisioning a future of communities on the Web in an authentic notion of individuals participating in explicit social contracts. The fact that the terms of service for websites, discussion boards and social networks are generally hidden and tucked away never to be read by users underscores just how far away from this vision of online community our situation has drifted.

The disconnect between Figallo’s idea about hosting and the notion of owning communities in Kim’s work is indicative of some general problems Figallo reports out on in terms of how the term community is beginning to be used. In 1997 Figallo feared the term community was “in danger of being watered down into meaningless jargon” (Figallo, 1997, p. ix) further suggesting “For me, community has always been an important, almost sacred term preserved for relationships that have more than trivial meaning” (Figallo, 1997, p. ix). Unpacking the substance of his fears provides insight

into different perspectives about how the Web could and should have developed as a community platform.

Figallo is critical of sites that aren't focused on "nurturing relationships between people and involving them in their site's content development" (Figallo, 1997, p. 28). For him, "relationships, contributions, and involvements" between participants in online communities "are central to our working definition of community on the Web." The focus in all of this is on bringing people together online, not on getting them to do exactly what you or the presumed owners of a given site want. He goes on to explain the implications of this definition:

According to that definition, members of a community feel a part of it. They form relationships and bonds of trust with other members and with you, the community host. Those relationships lead to exchanges and interactions that bring value to members. It's that value that draws them back repeatedly to your site where, over time, they build shared histories of experiences and events. This reliable traffic and the members' contributions of information, ideas, and feedback are the major benefits you'll realize by fostering community on the Web. (Figallo, 1997 p. 28)

Those final words, "fostering community" capture the essence of his perspective. While Figallo is interested in the potential value online communities can bring to businesses, he positions that value in the facilitation of the development of shared history. He brings an abiding respect for what he had termed as "sacred" elsewhere. This 1997 vision of "hosting" of "facilitating" and "empowering" individuals to participate and

develop in online communities is rare to find in the books that come after this. It would seem that his fears about the changing meaning of “online community,” about the term being watered down, were largely realized.

Cyberspace’s 3D future never came. The death of the idea of cyberspace is likely connected to the failure of its future. Books on online communities written during the 1990s had a tendency towards exuberance in prognosticating a future of persistent 3D online experiences. For example, the 1997 book *Virtual Communities Companion* includes a copy of the software to set up your own instance of The Palace, a 3D environment for setting up online communities others can connect to over the Internet. In an interview with Mark Jeffrey “director of commercial ventures for The Palace, Inc.,” Jeffrey expresses a value evident throughout the books of this era. He explained, “in two to three years, all online communities will be avatar-based” (Jeffrey, 1997, p. 184). From the logic of cyberspace it made a lot of sense to believe that the next phase of the Web would involve a rapid shift to creating 3D immersive modes of interaction.

The logic driving this belief in the future of 3D immersive online community software offers insight into the underlying vision of cyberspace that animated many of the books analyzed in this study. After announcing that text based online communities would disappear in a few years, Jeffrey explained “The larger group of the population will not tolerate a dull text interface in the same way they would not tolerate the linear and confusing DOS and waited for a graphical user interface as the Mac or Windows. Also, text does not do much for the sense of *being there* that a graphical environment does.” (Jeffrey, 1997, p. 184). It would turn out that the sense of “being there” must just not have been as important as it was imagined it would be. Somewhere during or after

the dot-com era or the film *The Matrix* the boosters of online community stopped proclaiming that the future of online community was going to be all 3D virtual worlds. These visions of cyberspace couldn't have been more wrong. While the massively multiplayer game *World of Warcraft* has been incredibly successful as a game, games proved to be the exception. The excitement for 3D online communities outside of games faded.

While the platforms for 3D online communities didn't take off, a set of other platforms did. In the first years of the 21st century, a set of software platforms for running online communities became the default tool kit for creating online community websites. These platforms, phpBB, vBulletin and Invision Power Board, looked much more like bulletin board systems than they did like the 3D worlds that cyberspace evangelists were prognosticating.

Platforms define online community. Disappointed with the commercial Ultimate Bulletin Board System and the open source Phorum software, developer James Atkinson decided to create his own software package. As Stefanov, Rogers, and Lothar explain at the beginning of their 2005 book, *Building Online Communities with phpBB* “phpBB was ‘born’ on July 1st, 2000, at 06:45 PM. We know the exact date and time because that is when James posted a message on an Internet forum saying that he had created a bulletin board and would like some help testing” (Stefanov, Rogers & Lothar, 2005, p. 8). His work on this particular piece of software rapidly created one of a series of discussion board software packages that have since become synonymous in the minds of many with online community.

When you find a site, or a section of a site, that calls itself an “online community” there is still a good chance that it is running a version of phpBB, vBulletin, or Invision Power Board. These systems, each created around the year 2000, pulled together a set of features and functionality and packaged it together into sets of server side software.

By the middle of the decade, the platforms had become popular enough that Packt publishing published and marketed handbooks for each of them and other technical books continue to offer advice for how to configure and implement these systems to create your own online community. A phpBB book describes the software as an “Internet community application, with outstanding discussion forums and membership management” (Stefanov, Rogers, & Lothar, 2005, p.1). These technical books explain how the ideology of online community that had been taking shape in the early Web was translated into functionality that would quickly become the default. The mixture of discussion forums

and “membership management” give insight into the cultural logic at work inside these applications.

Community as a feature set. On page one of the 2005 book *Invision Power Board 2: A User Guide*, author David Mytton explains that the software “allows website owners to add a community to their existing site within minutes” (p. 1). In this book, and many of the other technical books about these applications, community becomes synonymous with a set of features. To “add” a community to a website in minutes requires us to stop thinking about community as something that people create through ongoing interaction, through the development of shared history, and start thinking of community as an application or feature set. Another book about phpBB uses related language, explaining; “Forums are an easy and popular way to implement a community on your site” (Douglass, Little & Smith, 2006, p. 219). In this case, and the case of other books about these software platforms, community has become a feature set. Where one might have used terms like develop, facilitate, or cultivate in the late 1990s by 2006 a community is something to be implemented. In these systems, community is defined by the way the software enables users to sign up, gives them a rank based on what they have and haven’t done and tracks and shows how many times they start discussions and what their permissions are to do things in the system. Community has become the interaction between a set of scripts and a database. It is the enacting of a set of computational procedures and records in a database.

Mytton goes on to tell us why it would be valuable to add a community to an existing Web site. His description illustrates how thinking of community as a set of

features one implements turns community members' activity into a strategy for generating additional site traffic.

A community adds extra value to almost any website. One of the main goals of website owners is to keep visitors returning for more content.

Launching a bulletin board (also known as a forum) can have that effect—members participate in discussion about (but not limited to) the topics they are visiting the website for. This can provide extra help, answer questions, and introduce another support channel to your website. All of this adds to the 'stickiness' of your website (Mytton 2005, p.6).

In Mytton's explanation, the site administrator wants to add a community to her website because it brings valuable web traffic. The website owner wants people to frequent the site because they want more chances for people to view the site content and advertisements. People come to the site and talk about what the site administrator wants them to talk about, or whatever the site administrator lets them talk about. The Web traffic turns directly into cash as some percentage of the site users click on advertisements. Even more importantly than actual revenue from advertising, usage statistics for sites became a key factor for establishing the market value of Web companies. Aside from direct revenue, the site administrator can also boast about the size and scale of their site. The term 'stickiness' is an online marketing term. The more a site sticks to the user the better. Users keep coming back to sticky websites. In this case, an online community makes your content stickier; people just cannot get it off of them.

The discussion forum becomes a means to draw traffic to a site and show up better in search results. As Adrian and Kathie Kingsley Hughes explain in the 2006 book *Building Forums with vBulletin*, “A discussion board quickly creates a pool of knowledge on your site” (Kingsley-Hughes, 2006, p. 6). This pool of knowledge “means that you get entries in search engines for a wide variety of topics and search criteria, which will very effectively improve your overall ranking” (Kingsley Hughes, 2006, p. 6). So all of that discussion means that your site shows up for more search terms. Given that the goal is to generate traffic to the site the discussion forum becomes an easy way to generate more traffic for your site.

Gone is the high-minded and utopian rhetoric of belonging, of spiritual and emotional connections in cyberspace. As online community was refined into a feature set, a bundle of scripts that create discussion threads on a screen through interaction with a database containing tables of users and their roles and tables of discussion text, the utopian language of the previous era faded away.

Default ranks and post count. The discussion boards in each of these platforms looked like many different kinds of discussion boards that came before them, but the new systems brought a series of methods for users to be ranked and ordered.

A theory of motivation is baked into the design of systems for ranking users. In a section called “manage ranks” Mytton explains that inside Invision Power Board “Ranks are used to encourage members to post.” (2005, p. 96). Similarly, in phpBB “Ranks are a “way of giving your community members a credit for their participation” (Stefanov, Rogers, & Lothar, 2005, p.137). The token names that show up next to a users’ name on

each of their posts are a form of encouragement, meant to communicate a user's status. Mytton explains exactly how this system works. "Once a member reaches the Min Posts value, their rank will be automatically changed. 'Pips' (or a custom image you can create) will appear beneath the member's name in their profile and in their posts at this point." He goes on to explain, "As their post count increases, they will rise up the ranks, and gain status within your community." Here, again, the idea of "status in your community" the notion of reputation to others is turned into something that is easily measurable inside the logic of the transactions on your website.

The more someone posts, the higher their post count, the higher their displayed rank and as such, the more status they have. "Used well, they encourage more posting and therefore greater activity" (Mytton, 2005, p. 96). Again, the goal of your community is to create activity, as that is at the heart the value that you are seeking as a website owner. As the site administrator, "You can define your own member ranks from the Manage Ranks option" (Mytton, 2005, p. 96). With that noted, straight out of the box the software comes with a set of descriptions for each of your community members. "From a fresh installation, you will see three already defined: Newbie (0 posts) Member (10 posts) Advanced Member (30 posts)" (p. 96). Straight out of the box, Invision Power Board has an idea of who your members are and how to categorize and motivate them to do the things that the software's creators think motivate the end users of anyone running the software. Underlying all of this is a theory of value. The ultimate goal of an online community is to generate value in the stickiness of users returning to visit the site again and again.

The logic of permission and control. Users and posts are the primary objects that these platforms are designed to manage. While one might initially think that the content of discussion, the posts organized into discussion threads, are the primary focus of what forum administrators moderate and filter, there is an entire system behind the scenes that organizes, categorizes, and controls the users. As Mytton explains, Invision Power Board lets you organize your users into categories. He explains this is “mainly to assign permissions and thus control what your members are able to do on your forums” (Mytton, 2005, p. 97). The logic of these systems is one of permission and control, of deciding what “your members” can and cannot do. For example, in the Invasion Power Board system a moderator can select “yes” or “no” in the admin interface to any of the following abilities for individual users or particular categories of users; “Can mass move topics? Can mass prune topics? Can set topics as visible and invisible? Can set posts as visible and invisible? Can warn other users? And can use topic multi-moderation?” (Mytton, 2005, p. 89). Selecting “yes” for any of those options changes the user interface for that category of users. For example, with the ability to “mass prune topics” a user has access to a new capability to delete posts en masse, based on particular criteria that the user applies. Each of these options describes a power, a permission, the admin can set the moderator up with the ability to prune and reorganize the topics and discussions in mass, to ban users, in short, the entire system is available to the admin through their interface to set up what can and cannot be done, to control what has and hasn’t been said.

The same vision, enabling different tools for moderation and control of posts through moderation and management of the privileges of different classes of users, holds true in phpBB, where “a moderator is a community member who has some more

privileges over the postings and the topics than those that the regular users have” (Stefanov, Rogers, & Lothar, 2005, p. 57). Those privileges are offered to the extent that they “make the forum a better place for discussion in line with the administrator’s vision for the community” (Stefanov, Rogers, & Lothar, 2005, p. 57). The term “privileges” in these cases is important in what it implies about the logic of permission and control. User capabilities and actions in online community platforms are framed as advantages or favors granted by site administrators. The discussion board is created and maintained through establishing control by giving particular privileges to users as seen fit by the owners of a given online community.

As online communities hit their stride, a new phenomenon was taking shape. The idea of online community was, for many in the web application business becoming passé. Technologists shifted to talk about “social.” Exploring the emergence of social networking and social applications surfaces disagreements about if “social” had replaced “community.” To some, “social” is the next phase in the evolution of online community. To some “social” was something entirely different than online community. The disagreement about what the terms “social” and “community” means in these technical books offers a vantage point to better unpack the ideologies at play in their definitions.

From community to social. The success of social networking sites like MySpace and later Facebook, have shifted interest from online communities as places, to social networks as assemblages of links between people and digital objects. The idea of “social” that came into Web parlance with social networks and applications like Flickr, Twitter, Yelp and any number of other social sites is a primary concern of books about designing and managing online communities in the later half of the last decade. Some of these books insist that “social” is simply the further development of online community, while others insist that it is something distinct but related. In either event, these divergent perspectives offer insight into underlying ideas and values at play.

Online community continues to primarily refer to websites that function as discussion forums and at time blogs that have extensive commenting and discussion components to them. The online community software platforms (phpBB, vBulletin, Invision Power Board etc.) all continue to be widely used increasingly represent a small niche genre of website in the face of the continued massive growth of sites and applications like Facebook and Twitter built around the notions of social.

Why community became passé for some. On the first few pages of the 2009 book *Designing Social Interfaces: Principles, Patterns, and Practices for Improving the User Experience* Christian Crumlish and Erin Malone explain why the term “social” has replaced the term community on the web. “In the early days of the Web, social experiences were simply called community and generally consisted of message boards, groups, list-servs and virtual worlds” (Crumlish & Malone, 2009, p.5). They explain that these were “place-centric” gathering places and that there “was little distinction between the building of the tools to enable these gatherings and the groups of people who made up

the community itself.” They cite SixDegrees.com from 1997 as the first site “that straddled the line between community and what we now call social.” Explaining that “SixDegrees showcased connections among people, allowed users to create and manage their personal profiles, and brought people together based on interests and other features. Sound familiar?” The primary difference the authors are articulating is between the idea of virtual places in which people come together around shared interests and a notion of the individual user as a node, as an object, that is networked and connected to other users based on features of their profile.

Beyond becoming an outmoded notion, Crumlish and Malone explain, “before the dot-com bust, *community* became a dirty word—most likely because it was overly resource-intensive to build and care for, and no one figured out how to make money from all that work” (p. 6). Instead of trying to create a community, instead of identifying an interest and attracting a set of individuals who might developed into a community around that interest into a set of people who could establish shared history, the logic of social is based on getting users to bring their real-world networks of relationships into your application. As the authors explain “These sites count on each person bringing his personal network into the online experience” (Crumlish & Malone, 2009, p. 7).

This tension between community and social is resolved differently in other works. In the 2009 *Online Communities Handbook: Building Your Business and Brand on the Web* Anna Buss and Nancy Strauss explain that because online communities are “websites where user relationships develop... social networks are online communities in their purest form” because “user relationships are the main focus and activity (Buss & Strauss, 2009, p.16). In contrast, in the 2010 *Design to Thrive: Creating Social Networks*

and Online Communities that Last Tharon Howard, commenting on Buss and Strauss' claim that social networks are online communities in their purest form, suggests that "Web 2.0 biased definitions do violence to online communities, which have been around and accepted since the 1980s" (p.13). For Howard, equating social networking sites with online communities erases many of the most important components of what makes online community powerful.

The key difference between online community and social networking sites for Howard is that "social networks put individuals at the center of relationships" (p. 13). That is, the "the organization of relationships in social networks is fundamentally different than online communities." For a specific example, "In social networks such as LinkedIn or Facebook, the *individual* user is the center of the network" (Howard, 2010, p. 13) in these social networking sites "the view of the network which I see and the basis upon which connections are built is *entirely unique to me*" (Howard, 2010, p. 15). In contrast "communities are different." In online communities Howard suggests that your relationships to other users is secondary. Further, "The individual makes a commitment to the group as a whole before other members, but paradoxically, this commitment means that the contacts that I have with other members of a community is richer, more complex, and more predictable than the contacts I can make in a social network" (Howard, 2010, p. 15). As a result, Howard suggests that "online communities can achieve the kind of complex organizational structures needed for both cooperation and collective action; social networks can't" (Howard, 2010, p.22).

In short, the definitions of social networking sites and online communities are overlapping and contested. With that said, the differences in how Crumlish and Malone

(2009), Buss and Straus (2009), and Howard (2010) define and reflect on the concepts of community and social illustrates the edges of the disputed definitions. Social networking is built around the idea of building sites and Web applications around the user and their relationships. When a user logs into a site like Facebook or LinkedIn, they see a completely customized site based on the activity of those they are connected to. In contrast, everyone who visits a site running phpBB or vBulletin, or for that matter a Google Group, sees largely the same set of discussion areas and topics and posts. Crumlish and Malone, Buss and Straus, and Howard each categorize sites like Facebook and LinkedIn social networks and the discussion platforms online communities. Where the difference comes is in evaluating the relative value of the online communities. Of the three books discussed in this section, only Howard argues that there is something particularly important that is lost when we move from the place centric common discussion space to the user centric view of activity from your connections, friends, or contacts. For Howard, the shared experience of participating in a single ongoing hub of activity built around reading and responding to the same ongoing discussion is critical. In contrast, he suggests that social sites are far more fractured in that they are built around public interactions between users instead of sustained common discussion.

The fact that online communities haven't disappeared in the hype of "social" suggests that there is credibility to Howard's perspective. While in the minds of those developing social Web applications, online community may have become passé there are still an extensive set of thriving discussion boards across the web. For example, the anime themed Gaiaonline site (built on phpBB) sees over a million posts a day, is visited by 7 million unique users a month and boasts more than 26 million total registered users.

Similarly, the continued refinement and popularity of discussion sites like the ever expanding network of Stack Exchange question and answer sites illustrate how these community centric models that downplay social relationships in the interests of convening and focusing attention on discussion and deliberation suggest that Howard is right to argue that there remains a value and interest in this place centric notion of online community. Nevertheless, these community-centric forum models have become a niche genre of Web site. Facebook now boasts over a billion users and Twitter boast more than 400 million daily posts from users. Beyond the massive scale of their use, both Twitter and Facebook's recent initial public offerings illustrate how the financial markets value this vision for the future of social over the notion of community.

Community, social, and control. Despite disputes about what constitutes an online community and a social network, there is considerable continuity in how Crumlish and Malone (2009), Buss and Straus (2009), and Howard (2010) see the goals of both. As the designer of a social network or an online community the owners' objective is to get their users to do what they want them to do. In this section I briefly explore the emergence of reputation systems, consideration of user agency, and how users become a disposable commodity in the language of these three prominent and recent books on designing and running online communities.

Emergence of reputation systems. More and more, the design and structure of reputation systems has become a central feature of books about online communities. Where platforms like phpBB and vBulletin include relatively simple systems for assigning ranks to users, the new social networks implemented in various social and community platforms since have become far more sophisticated. The design and function

of reputation systems will be discussed much more extensively in a later chapter on their functional role. With that said, it is useful to dig a bit into the theory of reputation systems here to understand how discussions of online community establish a logic of control.

Crumlish and Malone offer the following explanation for the value and importance of reputation systems.

Including reputation metrics and services in your social interface is somewhat less ambitious than trying to measure people's real-world reputations or even trying to capture their online, virtual reputations. You can simply focus on the communities you are fostering in your application, the values you are trying to instill in the environment, the behaviors you wish to encourage, and the types of people you wish to engage ever more deeply in your social environment. (Crumlish & Malone, 2009, p.153)

This description is considerably different from the ideas of community in the 1990s. Instead of hosting, convening, or facilitating online communities Crumlish and Malone are interested in what many on the Web are calling social engineering. Their suggestion to designers of social interfaces to step back and think about the values they want to instill in their environment, the behavior they wish to encourage, and the types of people they want to engage are focused on getting people to perform as you the designer want them to perform. This isn't about designing the facilities for communities to happen in, it's about literally designing social interaction. This has become a process of monitoring, tracking and modifying the behavior of individuals through application

design. For these authors, designing the reputation system for a social interface is a process of behavior modification. Crumlish and Malone are not naive at this point. They suggest, “each designed model of participation and reputation embodies its own set of biases and incentive structures” (2009, p. 154). They are not simply designing the information architecture of a website, they are designing models of participation and reputation that represent a social architecture of relationships.

The logic of behavior modification is evident in how they suggest designers conceive and structure their reputation systems.

Fundamentally, a reputation system involves tracking desirable behavior and then recognizing it publicly. So, any well-designed reputation system is going to start with an inventory of desirable behaviors. Do you want to make sure people try out a certain feature, or strive for higher-quality contributions, or log endless hours responding to others? Just as managers say, “You can’t manage what you can’t measure,” the same applies to reputation. You can’t acknowledge what you aren’t tracking (2009, p. 154).

Crumlish and Malone start with an inventory of intended behaviors. What do you want people to do? How can you measure if they are or aren’t doing it? From there, the goal is to simply poke and prod users into doing what you want them to do.

The feeling of agency. Given that Howard (2010) had such a different vision for the power that online communities could provide over social networks one might imagine that they would articulate a fundamentally different notion of how control and power should work in online communities. At points it seems like this is the case, but a close

reading suggests otherwise. Consider the following description he offers of users' sense of control:

How do you help your individual members feel they are in control or have influence over their environment and yet still achieve a balance between meeting the needs of an individual on the one hand and protecting the goals of the community on the other? (Howard, 2010, p. 81)

What originates in a care for user agency is fundamentally not about putting members in control but creating the illusion of control. The community designer wants to meet users' needs, but they also want them to help you meet the needs you have identified for the community. In this sense, Howard's conception of control is very similar to the patterns of control documented thus far. In this story, the owner/designer/site administrator of the community or social network wants to make members feel like they have power. Feelings, or possibly illusions of control, are in Howard's perspective an important thing for to build into online community systems. He offers a similar point a page later. One of Howard's central points is that users need to have influence in the community. This suggest that he wants to cede control to users, that he might be interested in notions of how communities develop their own governance. However, his definition for when members have achieved influence in a community belies a very different vision. For Howard:

Influence can be said to exist in a community when its members believe that they can control or at least shape the policies, procedures, topics, and

standards of evidence used to persuade others in an online community or social network. (Howard, 2010, p. 82).

The key word in this sentence is “believe.” Just as Howard wants to make sure members feel they are in control, he also wants them to believe they have a voice.

The first line of the foreword to Howard’s book is telling. “Communities don’t happen by accident, although you’d never know it from the haphazard way most companies go about trying to create them” (Howard, 2010, p. ix). Within the context of the book, communities are things companies create. Communities are not accidental or haphazard. They are manufactured and designed to get particular kinds of people to exhibit particular kinds of behaviors.

Using up your users. A chapter on motivation from Buss and Strauss's 2009 book *Online Communities Handbook: Building your Business and Brand on the Web* is similarly useful for exploring the interplay between a set of psycho-social beliefs that underpin the authors' explanation of desired functionality in online community software. From the beginning, it is clear that not only is there a commercial goal for the sites, but that site users are explicitly thought of as commodities themselves. For example, when Buss and Strauss explain that the key question is "How can you get the maximum mileage from your members?" the community members explicitly become a fuel to be consumed (Buss & Strauss, 2009, p. 80). Similarly, in a heading for a section on how to engage members, the authors suggest to "Grab them when they're fresh," members become something akin to a perishable fruit or vegetable. In both cases users become something for you as the site administrator to consume. The authors go on to explain how this approach translates into specific functionality.

For Buss and Strauss, the first activity on your site needs to be simple, enjoyable, and show "an immediate result (for example, a photo appears on the page) for instant gratification" and promise a long-term result, like another member who might comment on it. The reference to "instant gratification" itself represents a longstanding connection between the discourse of marketing and the discourse of behaviorist psychology. It is unclear the extent to which this represents a rationalization of functionality on the terms of marketing or if this indicative of an ideology that has itself guided the development of these kinds of gratification cycles in the functionality of online community software. In any event, the link and relationship is worth further study and exploration.

At this point, Buss and Strauss discuss the marketing term “stickiness” that has already come up in the books and has become a key term in eCommerce. Buss and Strauss describe stickiness as “website content that causes the user to spend more time on the site” (2009, p. 81). Stickiness is grounded in their pop-behaviorist psychology principles as an explanation for how to run an online community. As in much of the book, the psychological ideas and the theory of society and community embedded in those notions are implied as statements of fact. These are simply statements about the way the world works which the authors translate into ways of understanding how to structure online community. That is, Buss and Strauss do not provide an explanation of how their vision for running online communities is based on a particular behaviorist set of assumptions about psychology. The behaviorist perspective is an underlying assumed value. As they explain;

Not only do you need users to spend time on the website, you need them to come back again and again. You should therefore aim for the right balance between instant and delayed gratification. On the one hand, users should see instant results from their actions, giving them a satisfying experience on the website. On the other hand, there should be benefits that build over time, enriching the experience the more time they spend in the community. (Buss & Strauss, 2009, p. 83)

Buss and Strauss mobilized a theory of human behavior, one that is focused on instant and delayed gratification, in service of particular designed features. The functionality they describe is a staple of the design of online community systems. The

authors explain that loyalty programs where “users earn points for each website action” can be valuable because they can frequently remind users by serving their “self-gratifying desires” (Buss & Strauss, 2009, p. 83) The authors contend that “virtual rewards” trigger both instant and delayed gratification. They remind us that these rewards should “depend on your target demographic,” suggesting that “Teenagers are not interested in a business card exchange feature, while business users may be less likely to crave virtual pets to keep on their personal homepages.” The authors’ theory of self is based on behaviorist models. Reward the behavior you want, gratify the user, make and satisfy their cravings, keep pulling them back in and providing the stimulus of the reward.

The features Buss and Strauss discuss have more recently been discussed in as “gameification.” “Gameification” claims to use principles of game design in non-game situations, although ideas about of points, badges and virtual rewards clearly predate the notion of gameification. With that said, Margaret Robertson’s critique of gameification as “pointsification” (2010) and Ian Boost’s critique of it as “exploitation-ware” (2011) are well argued critiques of this type of thinking about users.

The behaviorist psychology of gratification and rewards becomes a theory of society as Buss and Strauss begin to explain the critical value of “social hierarchy” as an explanatory device for another particular set of functionality, the reputation system. They provide us with a theory of the social and then give us a case study from a site they worked on, Ciao.com, in which they illustrate what this theory looks like in practice. It is worth quoting these both at length to pick apart exactly what the authors are suggesting and what their vision of a social hierarchy looks like as a system.

Social hierarchy in your community is a powerful tool. Just like offline communities, online ones quickly sort themselves into a hierarchical structure, normally with the most experienced members at the top. By encouraging hierarchy in your community and offering visible status symbols based on seniority and activity level, you can create an environment in which members feel as if they are working toward an objective: the next rung on the social ladder. (Buss & Strauss, 2009, p. 86)

Here, Buss and Strauss explain that one of our most powerful tools is not part of the software; it is social hierarchy and our innate desire for social hierarchy. When the authors assert that online communities “quickly sort themselves into hierarchical structures” they establish a social framework that informs their approach to design. Their assertion that this is “just like offline communities” makes this out to be inevitable.

They then go on to suggest how this vision of human behavior can inform the design and development of software. For example, the authors recommend that a site admin will want to offer “visual status symbols” in this case of the characteristics they want to encourage, “seniority and activity level” and give users the feeling that they are “working toward an objective.” Specifically, the members’ objective is to reach “the next rung on the social ladder.” The instant and delayed gratification in this system is based explicitly on the idea that what motivates users (again the title of this chapter is motivation) is their desire to gain some arbitrary and non-monetary signifiers of their increasing social status in the given community site. Buss and Strauss go on to explain:

The consumer community Ciao.com has a non-monetary rewards system that issues colorful dots as a status symbol. Members can earn points to change the color of their dot by posting product reviews that other member's rate as useful, or by performing other community actions. You can find many members who post messages on their profile pages related to this community points systems. "Hooray, I'm finally red," they write. "Please read my product reviews and help me turn orange!" (Buss & Strauss, 2009, p. 87)

Buss and Strauss start by describing Ciao.com as a "consumer community" and explicitly suggesting that the community uses a "non-monetary rewards system." Again, the very idea of a "rewards system" brings with it the behaviorist inclinations of gratification. At each step of the description we see ways in which users are trivialized. As users engage in the activities that Buss and Strauss have chosen to reinforce—in this case writing product reviews and performing other undisclosed "community actions" — they receive the points that enable them to change the color of their apparently arbitrarily and infinitely trivial "colored dots." They tell us of how their users exclaim "hooray" at finally being red, and attempt to recruit each other to read their product reviews to "help me turn orange!" In Buss and Strauss's presentation, users and community members are commodities that can be controlled based on their desires for gratification. The structure of social interaction enacted and prompted by the software's reputation system and usage of virtual rewards is anchored in ideas about users' innate desire to climb the social ladder. The functionality of the software reifies a set of ideas about social hierarchy in the minds of the authors as a set of features which users directly engage with. The somewhat

abstract notions of social relations become concrete in how they are operationalized and instantiated in the functionality of these systems.

The alternative age of participation. There is an alternate vision for what online community can be. In the 2009 book *The Art of Community: Building the New Age of Participation* author Jono Bacon offers a fundamentally different perspective on online community. Published by O'Reilly Press, this book does not focus specifically on online communities as much as it focuses on how to form and support communities of people working toward common goals. As the community manager for Ubuntu, one of the most popular distributions of the Linux open source operating system, Bono brings a distinct perspective to online communities. In contrast to just about everything else being written about online community during this time period, Bacon focuses on how a range of free culture projects and initiatives convene and support a community of members to work together and ultimately take on their own governance.

To illustrate the kinds of free culture movement communities Bacon discusses of people who band together toward some ends he offers the following example: A set of people who came together to create a free and open source audio editing application. “We set up a code repository, a website, mailing list, and a bug tracker, and scheduled regular meetings. We organized hack days, bug squashing parties and online discussions to plan and decide on major architectural decision” (Bacon, 2009, p. 23).

In the case of developing this open-source audio editing application, the communication tools, like the mailing list and the website and the code repository, are employed as tools to support the work of the group. The communication tools are not

discussed as a set of features that define the community or as a carefully put together system of behavioral modification.

Read-mostly and write-centered communities. Nearly all of the communities, discussion forums and social networks discussed in some of the previous books fall into what Bacon would call “read-mostly communities.” Bacon, however, is primarily interested in “write-centered communities” (Bacon, 2009, p. 34-35). The difference here is not one of reading and writing text, but of accomplishing work and having a stake in shaping the goals and objectives of the community. The author is borrowing from the language of computer storage systems where writing to the drive changes its contents and reading from the drive simply presents information.

For example, he describes a “read-mostly community” as something where “a group of fans provide feedback on a forum.” In contrast, a “write-centered community” is something like the “free Culture communities such as Linux, Wikipedia, OpenStreetMap, Creative Commons, etc.” (Bacon, 2009, p. 36). In these write-centered communities,

Collaboration goes much further. It becomes much deeper, more intrinsic, and more accessible to all. Instead of merely *enjoying things together*, collaboration goes so far as to help people *create things together* (Bacon, 2009, p.36, original emphasis)

Shifting from enjoying “things” together, like particular pieces of music or bands, to collaboratively creating them, is the central idea in Bacon’s distinction. To be sure, it is actually far more difficult to separate out the “enjoying” things together from “creating” things together. For example, a fan-fiction Web forum (a forum in which fans of a TV

show or novel write and share their own show-inspired stories) is an example in which individuals are creating the objects being enjoyed by the community. To Bacon's point, examples such as fan fiction sites are different from sites like Wikipedia or OpenStreetMap. In those sites, a group of volunteers band together to design, administrate and govern the ongoing production and maintenance of a free culture product and or service. Acknowledging that there are shades of grey between enjoying and making things is not to concede the point that the networks of volunteers who band together to create and run things like Wikipedia or OpenStreetMap are distinct from discussion centric online communities.

The core vocabulary that Bacon uses to describe community, particularly in the write-centric, free culture communities is fundamentally different from that of just about all the other contemporary Web books. While this puts him in a minority position, it's valuable to interrogate his perspective to show how stark the contrast is between his view and the broader contemporary perspective and to suggest a vision for what a different language and vision for online community might look like.

Enable. One of Bacon's key terms, which shows up repeatedly throughout the book is enable. Here he describes why that term is so important to his conception of community.

I have tried to summarize what we community managers do in one sentence. The best I have come up with is: I help to enable a worldwide collection of volunteers to work together to do things that make a difference to them...Twenty of those twenty-one words are really just

filler around the word that I the word that I *really* think describes what we do: *enable*. Our function as community leaders is to enable people to be the best they can be in the community that they have chosen to be a part of. Our job is to help our community members achieve their greatest ambitions, and to help them work with other community members to realize not their own personal goals, but the goals of the community itself (Bacon, 2009, p. 14).

Bacon is interested in recruiting and bringing together a network of volunteers to work together toward common goals. The word volunteer is similarly important in this context. Bacon doesn't think in terms of users or participants, but volunteers. A volunteer is distinct from those other notions of membership in that it comes with the sense that the person is acting in an altruistic fashion for the better of a public good. The vision of online community Bacon is interested in (and is promoting in his book) has much more to do with community organizing as a form of social activism than it does with the bulk of the literature on online communities.

Governance. Two books published on or before the year 2000 discuss and explore the importance of the notion of governance in online communities. There is only one post-2000 book in the collection of online community books I have pulled together that devotes serious attention and consideration to governance. Chapter eight in Bacon's *Art of Community* devotes more than fifty pages to the topic. Other books ignore the topic and by doing so, imply that online communities are functionally dictatorships or company towns. Where many of the other authors may be interested in the appearance or

feeling of control in the hands of the participants they are primarily focused on extracting value from the users or members to serve the desires of the owners.

Bacon begins his discussion of governance by describing a particular Web forum, the Ubuntu Forums. For reference, the Ubuntu forums are run on the vBulletin software, discussed previously. However, it's not the features of the forums or the way that moderation tools in the software work that is particular interesting to Bacon. In the chapter he explains there are moderators in the forums who report to a Forums council, who in turn report to the Ubuntu Community Council. Outside any definition or roles or permissions within the vBulletin software, Ubuntu has established a system by which members of the Ubuntu community have explicit roles to play in the governance of the project.

40 years of online community. A lot has changed in the 40 years since Community Memory tried to establish "strong, free, non-hierarchical channels of communication—whether by computer and modem, pen and ink, telephone, or face-to-face" as "the front line of reclaiming and revitalizing our communities." The resulting history has given us a series of platforms and a range of visions for what online community can and does mean.

Community as functionality and as product. When describing platforms like phpBB, vBulletin, and Invision Power Board the authors of these books describe community as a set of features. An online community came to be a set of system-defined roles and the rules that govern what different kinds of users can post and who can moderate. At the same time, other authors interested in more sophisticated definitions of community, as something that emerges as a result of that feature set, were transferring the idea of designing the features and functionality of systems into designing and architecting our actual relationships to each other as parts of those social systems. For the most part, voices in these books that pushed for thinking about community as something “sacred” or as something that shouldn’t be perceived as being owned, bought and sold are few and far between.

Persistent free information/open source undercurrents. Where is an undercurrent throughout the history of online communities that is entangled with the values of the free software/open source software movement. The very first book considered in this analysis, Bowen and Peyton’s 1988 book, *The Complete Electronic Bulletin Board Starter Kit*, situated BBSes in the free software movement, and Jono Bacon, community manager for Ubuntu and author of *The Art of Community* (2009) similarly situated his vision and values for online community in that movement.

Increasingly sophisticated notions of control and manipulation. Even at the earliest books in this analysis, books about BBSes, sysops were making decisions to keep people with 300k modems to off their boards because they thought cheaper modems marked them as an undesirable element. Since those days, the history revealed in books about designing, running and managing online communities present an increasingly

sophisticated set of ideas for how you can get people to do what you want them to do in your online community while providing an illusion of agency. The following section of this dissertation develops and documents how that control and manipulation is enacted.

Better and worse kinds of dictators. To acknowledge that online communities are, for the most part, fully owned and operated by owners, something akin to dictatorships is not to suggest that they are inherently bad or wrong. This is just to acknowledge and appreciate online communities for what they are and recognize that, in this sense, they are very different from what we imagine to be the case with community in general. Recognizing that this is how control works in online communities opens a new question. How do the members of an online community feel about the particular dictator in this particular community? That is, some of the modes through which online community is controlled and enacted come as those of the paternalism of a benevolent dictator. In these cases, the community members are being manipulated and nudged to act in particular ways but it is more or less transparent and they are willing participants in something that ideally has their best interests at heart. In contrast, there are other modes through which the dictatorship is exploitive, in which users are less aware of how they are being manipulated and are in effect being taken advantage of and exploited.

Enacting Control, Granting Permissions

The history of the rhetoric of online communities suggests they are, in general, products and commodities. Online communities are set up toward particular ends and run and administrated toward those ends. Which brings us to a few related questions: How exactly is control of online community enacted? To what extent is that control absolute?

Assuming that control is not absolute, how do members and participants in online communities exercise agency and how do the owners of online communities maintain control in the face of attempts for user agency?

I have organized this section into three different technical modes through which the creators, owners, and managers of online communities exert control over these communities. I've called these visual design/information architecture, moderation tools, and reputation systems. Aside from identifying the modes of control, I am also interested in identifying the actors who use these modes. In this case, control is enacted through a distributed network of designers, site administrators and moderators, the site's users, and routines in the site's software which make use of underlying networking protocols. Control of online communities is enacted as these actors operate through the three modes. The description of tools and tactics for control bring with them anticipations of the reactivity of members. That is, we can come to understand the agency of community members in the strategies and tactics the owners of community mobilize.

Visual design and information architecture. The design of a site is intended to encourage and discourage particular kinds of behaviors from users. These include both overt signals about the kinds of people that are invited to participate, like a site's tagline explaining it's a "place for women" as well as more or less overt approaches to shaping the nature of dialog and discussion in an online community like how prominent the "post" or "comment" button appears on a site. This mode of control is primarily the domain of the designer. In some cases, this will be a Web developer who created the particular site, much more often, the role of designer is actually itself distributed between the individual who configures and localizes the look and feel of a particular community software application (like phpBB or vBulletin) and the entire group of developers who have designed the system they are using.

Getting the right tag line. The most visible level on which designers' effect the shape and nature of interactions and discussion through visual design and information architecture is things like the name, logo and tagline for the site. Discussion of how to chose these things, and the value of making sure your site is distinct and stands out shows up most of these books. Remember the earlier discussion of Amy Jo Kim's commentary on the tagline for L'Eggs pantyhose site? She suggested, "Imagine, if the L'Eggs community had used a tag line like iVillage's "Real Solutions for Women," their site would have evolved in a very different way" (Kim, 2000, p. 22). The implication was that they could have done a better job of attracting the women that the owners of the site wanted to attract and of dissuading the pantyhose wearing men they did attract if they had had a better tagline signaling who welcome and who wasn't. In this sense, the design of a site serves to signal who should and who shouldn't participate. This point is reiterated through a range of more subtle features of community sites than their taglines.

Bury the post button: Page layout, empowerment and manipulation. Derek Powazek's *Design for Community: the Art of Connecting Real People in Virtual Places* published in 2002, focuses on how to add what he refers to as "community features" to websites. One of his focal points is how the design and layout of a site should structure user participation. The following excerpts come from his section "Rule 2#: Bury the Post Button."

In my experience with community features, I have observed a proportional relationship to the distance that the post button is from the front door of

the site and the quality of the conversation on the site. The farther away it is, the better it gets. (Powazek, 2002, p. 53)

The post button is intentionally placed to provoke a specific kind of conversation from a particular kind of user. At the end of the first sentence we find what he sees as the value that “community features provide.” In his case, the value he is trying to optimize is the “quality of the conversation” something that he will further explain to us shortly. With that goal in mind, he offers a theory of visual design that will strike many as counter-intuitive. To explain this idea he draws us in to think about the metaphorical “front door” of the site. Like many of these texts and works on Web design in general, the layout of a building is used as a way of describing the experience of moving through a site. In doing so, he, and many of these texts, spatialize sites. What was a series of files, or a series of linked documents becomes a home or a building. One can read into this the implication that we aren’t having intimate, or quality conversation on the front porch or in the parlor.

With this said, if the goal of a site is to engage in dialog why would one want to “bury the post button”? The point goes against much of the common wisdom of Web design exemplified in work like Krug’s *Don’t Make Me Think: A Common Sense Approach to Web Usability*. Why is Powazek suggesting to obfuscate functionality? He goes on to explain:

Why would this be? Because, in this case, the multiple clicks it takes to read the whole store are actually a great screening mechanism. Users who are looking for trouble or aren't really engaged in your content will be put

off by the distance. They lose interest and drift away. But the users who are engaged by the content and interested in the results of the conversation will stick with it. These are the people you want to retain, because they're much more likely to post great thoughts. (Powazek 2002, p. 53)

Making it more difficult for a user to get to the post button and respond and share their ideas is part of an explicit attempt to generate a particular kind of discussion. Here we find out a bit more about what it is that Powazek thinks counts as quality conversation. It has to do with separating out different kinds of users. There are “users looking for trouble” and users who “aren't really engaged” as kinds of people he wants to filter out. In that process he hopes to retain the “users who are engaged by the content and interested in the results of the conversation (Powazek, 2002, p. 53).” In short, Powazek has in his mind a set of categories of good and bad users and the design decisions he is providing are intended to result in a particular kind of discussion between the good kinds of users.

In this case, the design and relationship of pages, making someone click though multiple pages is the instrument, or the tactic, he presents to configure discourse. He goes on to explain this “can translate into different things when applied practically.” As an example he suggests “perhaps the best place for the call to action (“Post your thoughts!”) is at the bottom of the page instead of the top” (Powazek, 2002, p. 53). Notice here that the distance metaphor, how far away from the front door the individual was, has now shifted from clicks to scrolling down the page. He explains “That way at least your users will have had to skim through some content before they are given the chance to respond.”

So distance operates as both a function of clicks and of page layout. Both the design of the structure of a site with “community features” and the visual design of the individual pages is being explicitly explained in terms of structuring both of these features to create particular kinds of discourse and dialog.

This may seem like a somewhat self-evident point; of course designers are designing according to their goals. However, this presents serious implications for what anyone who studies conversations and discussions in online communities can say about what the textual records on a page of a particular online discussion can tell us. Any interpretation of online discourse needs to start with the recognition that, in all likelihood, the site has been designed to invite and engage particular kinds of people in particular kinds of discussion. This said, given that decisions about what tools to use to run a site are made without a full understanding of the design, limitations and structure of the underlying software there is a good chance that underlying software is also at odds with what a given community manager wants as well. The intentions of the software creator can resist the will of the administrator.

Here the specifics of this description become important. One suggestion for researchers is to directly consider the point Powazek proposes, that this is a particular design tactic and that if one wants to engage in a study of online discourse it is probably a good idea to look at where the post button is as the placement and location of the call to action is likely to act as a filter. Understanding exactly how that filter works and who is being filtered out and in is always going to be a tricky game. However, it is essential to realize, at the base level, that the designers of sites are using visual design and

information architecture in an attempt to prompt particular kinds of people to particular kinds of actions and discussions.

Amy Jo Kim offers a similar perspective in her 2000 book *Community Building on the Web: Secret Strategies for Successful Online Communities*. She explains, “What you want to do is create appropriate hurdles for contributions” (Kim, 2000, p. 71). In this case, “It’s up to you to figure out the restrictions that best meet the needs of your members and support the kind of community you are trying to create” (Kim, 2000, p. 71). The visual design of a given site can be organized to create exactly these kinds of hurdles and barriers in that fashion serve to direct contributions to one particular type.

Talking like the right kind of person. Under the heading “talk like a person,” Crumlish and Malone suggest in their 2009 book *Designing Social Interfaces* that “savvy enterprises appreciated the value of communicating to potential customers in a human voice” and go on to explain that “The corporation has always been a mask that disguises the human nature of the people who do the actual work of the business” (Crumlish & Malone, 2009, p. 26). They suggest that site designers’ attempts to write the text for all parts of the site, from the text in the sign up process to the text in the error messages, as you would talk to them like a person and not like a computer system.

“But what kind of person?” they ask. “The type of person you hope will get involved in your site” they answer. They go on:

Model the sort of tone and personality you’re aiming to recruit. This is all the more true in the context of social sites. If a website does not communicate from the get-go that it is populated, and written by, ordinary human beings, how will people ever feel comfortable there? The antiseptic

air of a hospital or the bureaucratic formality of the Department of Motor Vehicles is no environment for fostering connections, relationships, or collaboration... The bottom line is *authenticity*. Would you really say that? Can you read it over loud without cringing? Does it *sound* like your kind of people?” (Crumlish & Malone, 2009, p. 27)

Following this suggestion involves creating a theory of the user in the mind of the developer. The idea being that the software they are writing is in effect a stand in for themselves talking to the user. Just as the placement of the buttons for response is intended to nudge particular kinds of users into particular kinds of actions, so too the text of a site is crafted to create an air of authenticity. Crumlish and Malone go on to explain exactly why you want to do this. According to them, having your site “talk like you” and having it talk to people you imagine like you puts your users into an important “state of mind” and that “This receptive state of mind permits the reader to enter into a dialogue with the site and reinforces the feeling that the site is made by people and not machines” (Crumlish & Malone, 2009, p. 28). While the user is actually talking with a machine as they work through the sign up process for a site, or when they hit a error message, they want the user to feel put at ease in this receptive state of mind. The language and voice of the system the user interacts with is intended to push them to forget they are engaging in interaction with prograded rules of the application and make them feel like they are engaged in dialog with the developer.

Welcome to the site. Crumlish and Malone also suggest that you create a “welcoming area” for your users. The idea is to “Provide the new user with a warm gracious welcome to your site and services. This can be a special welcome screen right after registering for the service or a special email highlighting features” (Crumlish & Malone, 2009, 2009, p. 73). In this case they are suggesting a particular step in the information architecture and design of your site. The terms “warm” and “gracious” here are curious. What exactly constitutes a warm and gracious automated script that produces a set of text on the Web page? This advice makes sense in the logic of Crumlish and Malone’s suggestion that the site should talk like a person, specifically, that it should talk like they are talking to you. They want to impart a set of feelings and values in the language they use and the style it’s presented in to make it feel warm and gracious.

Crumlish and Malone see this in terms of the kinds of welcoming events one might give when someone comes to a new place. They suggest, “Providing a welcome area or start space is akin to orientation for a new job or college, or giving your friends a tour of your home the first time they visit” (Crumlish & Malone, 2009, p. 75). The site speaks for them, acting as a tour guide to itself speaking in the voice of its developers.

The sentiment here is similar to that of Cliff Figallo’s perspective from a decade earlier, in his 1998 book *Hosting Online Communities*. Figallo suggested “The interface works like a combination of your welcome mat, your front door, and your living room. If it works to bring visitors that far into your site, you have a chance of introducing them to the rest of what is there” (Figallo, 1998, p. 148). The structure and design of a site is established to prompt particular actions. The series of pages and steps to orient and push them toward particular kinds of activity. Crumlish and Malone offer this analogy, “The

more welcoming you are (in a light-handed fashion, of course), the more your users will feel comfortable and *want* to spend time on your site” (Crumlish & Malone, 2009, p. 75). Herein we see their ultimate goal. You set your site up like this so that the visitor will want to spend time there. This has both the quality of making them feel at home and happy on your site and serving the goal of the marketing notion of “stickiness” you want people to want to hang out on your site because you want to make something meaningful to them and you make your money and establish the value of your application by getting a lot of people to spend a lot of time on it.

Moderate, filter, ban. When Stefanov, Rogers and Lothar introduce phpBB in their 2005 user guide they present it as two things. In their words, “phpBB is a free, open-source Internet community application, with outstanding discussion forums and membership management” (Stefanov, Rogers & Lothar, 2005, p. 1). Aside from the forums, phpBB is a membership management system. At the heart of these applications, platforms like phpBB and vBulletin, and the various bespoke social Web applications, is a process of managing, moderating and filtering users and their contributions.

Most online communities use technical mechanisms to moderate discussion and interaction. Sites run obscenity filters, users can be banned, and discussions can be pruned, broken apart, hidden, reorganized and edited. In most cases, moderation is enacted by interplay between scripted rules in software systems and the judgment of site members empowered with the permission to use a range of moderation tools. Examining the nature of moderation in online communities offers insight into the interplay between

established and enforced rules of etiquette and what is technically possible for a system given the underlying features of network protocols like HTTP.

In this section, I first talk extensively about how moderation tools are configured in discussion board software. This provides a general overview of the kinds of things that can be done in any system, and focuses in on how these have been designed and configured in these online communities straight out of the box. It is valuable to look at applications like phpBB, vBulletin, and Invision Power Board, as many of the more custom purpose built systems for other online communities are more particular and idiosyncratic. From there, I consider a series of historical developments in more generic design patterns that show up across more customized systems overtime.

Understanding how and why moderation tools are used for particular goals provides an important part of the context for studying the records of online communities. It also offers insight into how communication in online communities is dependent on an interconnected set of procedural scripts enacted by software and a range of actions offered to different types of users with different levels of permission.

Finely tuned control of users: 7 Types and 5 Levels of Permission in phpBB 2.

When you visit a discussion board running phpBB 2, it looks relatively straightforward. You see a range of discussion areas, each of which have in them a set of threaded discussions. Once you sign up for an account you can create new discussion topics and respond to other topics. What a new user to a system like phpBB isn't aware of is just how complex the same system looks from the site administrator's perspective. Different kinds of users with different types of permissions are able to see and use different functionality.

The phpBB 2 software comes with 7 permission types; view, read, reply, post, edit, delete, sticky, announce, vote, and poll create. It also comes five different levels of permission; all, registered, private (a label individually applied to members who get access to a private section) mod (moderator) and admin (administrator). Most of these are self explanatory, view, read, edit, delete, all control your ability to see sections of the discussion board and make and edit posts. Sticky is an ability to make a discussion topic “stick” to the top of the section, so new discussion threads don’t replace it as the first discussion in a given section. Announce lets you make site wide announcements that show up in a text box across the pages of the site and the voting and poll permissions enable users to create and vote in polls that show up as their own threaded discussions. The five permission types come with default sets of permissions.

The “all” level shows what users who haven’t logged in can see. It’s worth noting that in many cases there are sections to phpBB discussion boards are not viewable to users who haven’t logged in. In general, the Web harvesting and crawling tools like Google are unable to log in to these sites to capture these parts of online communities. This means that 1) these parts of online community discussions do not show up in search results and 2) are not recorded in archived copies of sites like those available through the Internet Archive’s Way Back machine. These permission types are not unique to phpBB; they are more or less the same across tools like Invision Power Board and vBulletin. As a result of this design, anyone working with archived copies of discussion forums is very likely looking at a small fraction of the discussion content of these sites.

Becoming a registered user of a phpBB site is the basic level of entry to participation. At this level, the user can generally view most of the discussion board

sections and has the ability to post and edit and delete their own comments. With this noted, there can still be other sections of the discussion areas that are only visible to members that an administrator or a moderator has designated as having “private” access, and can still be other sections that are only visible to moderators and administrators.

The result of all these layers of permission and control is that there is likely always something that is obscured behind what we can see on the screen as a particular kind of users. Ultimately, for any of these systems a table in a database establishes the levels of permission associated with each individual account that creates a filter on the discussions and available options a user sees in the discussion forums. Aside from what users can or cannot see, these systems include automated tools that moderators are enabled to use to manipulate communication in much more substantive ways.

Tools for moderators. Consideration of Invision Power Board 2’s moderation tools, as described in the software’s user guide, provides a frame of reference for understanding the kinds of things that moderators are enabled to do in these systems. In each of these cases, the logic of the tools of online community is exposed. A user with the right level of permissions (in this case the moderator) is empowered to make particular kinds of actions on the content in the database and the processes that the online community’s software runs to support communication. Ultimately, all of this functionality is dependent on the underlying constraints and designs of the database that contains information on posts and users and the kind of information that can be collected about a site’s visitors and users through the underlying Hyper Text Transfer Protocol that enables those visitors and users to access the system.

The user guide for Invision Power Board 2 documents the full range of ways the system empowers moderators to manipulate and control discussion text. Nearly all of Invision Power Board's features are also available in tools like vBulletin and phpBB and are explained in their respective guidebooks, so I will interleave some description of related features into this section. Briefly describing and explicating the different kinds of moderation tools these platforms comes with provides insight into exactly how control is enacted.

Inline moderation tools. The inline moderation tools of the Invision Power Board platform let moderators act on a range of individual posts and individual threads. These include the abilities to “merge posts, move posts, split topic and set invisible/visible” (Mytton, 2005, p. 123). Moderators can use these tools to channel the discussion in different directions. If they think a discussion is getting off topic they can split it into multiple discussion threads, similarly they can merge and move posts at their whim. The ability to make posts visible and invisible is intriguing. Instead of just deleting posts administrators and moderators can just hide them from particular kinds of users. As a result, there is a record of what was said but it's just not visible to everybody. In short, moderators have been set up with a significant number of tools to be able to tweak and change the order and structure of active and inactive discussions.

It's not just the content of the posts that they can control, however. Moderators in this particular system can also “unsubscribe all members from e-mail notifications for this topic” (Mytton, 2005, p. 124). Where the other options for inline moderation involve changing the content of the discussion, this method enables the moderator to change how users become aware of posts. In many cases, users posting in a discussion thread are

automatically subscribed to emails notifying them of new comments in the discussion thread. As a practical matter, turning off email notifications for a particular thread is a potent way to shut down a conversation. Users can keep posting there, but none of the participants in the discussion will be notified that there are new comments there. Now, any of the users can come back to see that there are new comments and ongoing discussion, but for those users who rely on emails to notify them of activity in their discussions it will seem like the discussion just ended. There is no visible notification that this feature has been turned on in a given thread to anyone other than the moderator.

Think about the difficulties this imposes on making sense of a discussion thread. If half way through, a moderator decided they were tired of seeing a particular discussion float to the top of the list they could quietly turn off email notifications for the thread. Users who manually visit and login to the site to see if there is new content will find the discussion and continue to participate in it. However, to all the users who participate in the discussion based on email notifications it will appear as if the entire discussion ended. This illustrates a broader point about how moderation works in online community systems. In many cases, the interface to a community and discussion on the website is just one of a series of modes through which users interact with the community. In this case, the email clients that different users use become an interface to the content of the community. In other cases, users subscribe to updates for online community via an RSS reader, and still others might subscribe to a Google search alert for particular terms that Google finds in the text of a discussion thread which can bring them in to participate in a particular discussion. The result of all this, is that making inferences about the text of online communities based on an absence, for example noting that a particular user who

normally responds to this kind of issue but in this case did not respond to it, is incredibly difficult to do. There is a range of techniques like turning off email notifications that make it easy for a user to just have never been aware that a conversation continued beyond their own comment.

Mass moderation tools. The inline moderation tools are relatively straightforward. The moderator has the ability to execute a range of additional actions on discussion topics and posts. In these situations, the moderator is interacting with basically the same interface that the rest of the users and visitors to the site see. Beyond this, many of these systems come with the ability to manipulate the content of discussion forums en mass.

Invision Power Board 2 comes with a tool called “prune/mass move” which allows admins and moderators to “move or prune many topics according to certain criteria” (Mytton, 2005, p. 126). I’ll delve a bit into the criteria in a moment, but first, the term “pruning” comes up in many of the books on online communities and it’s worth considering the implications of it. Let there be no confusion, pruning discussion threads is deleting them. With that said, the notion of pruning comes with the idea that much like a gardener cuts prunes away parts of a bush or a tree so too a community manager/administrator must cut back and prune away some of the discussion to make room for new growth. While there is often a persistent mentality that the archive of the aggregate discussions is valuable, it is important to recognize that there is also this competing view that there is value in pruning away some of the discussions overtime to keep an online community healthy.

The criteria for pruning and mass moving discussion topics offers further insight into the logic of the discussion board software. As Mytton explains, mass moving and

pruning “can be done based on: Topics with no new posts over a specified period of time, Topic types (open, locked, moved topic links, or any topics), topics with less than a specified number of replies, topics started by a certain member.” (Myton 2005, p. 127)

The criteria driven approach to mass moving and pruning discussions enables an administrator or moderator to leverage the data fields in the underlying database to identify discussion without even reviewing or rereading them. The administrator or moderator can erase every discussion started by one particular user; they can delete all of the topics based on any number of different parameters that characterize those topics. In short, the moderator or administrator is empowered to make sweeping changes to the discussion content of the community. In contrast to the inline tools, these en mass tools enact a very different kind of agency on behalf of the administrator/moderator. In the inline moderation techniques, the moderator decides to intervene in a particular situation and uses the moderation tools to do so. In the en mass cases, it’s likely that the individual moderator/administrator will not really understand the ramifications of what they are doing to each of the individual threads that is affected. As a result, if one wanted to make inferences based on the fact that a particular topic has been removed or deleted from an online community it is difficult to be able to infer who did this and to what end. Where one might imagine that some moderator was attempting to suppress or remove a particular set of opinions or perspective, it’s just as possible that the deleted topic was either part of a continual plan for pruning content from the site, or, that it was deleted as a kind of collateral damage resulting from some attempt to tidy up the forums en mass.

IP member tools. In a section called “IP Member Tools” Mytton explains how administrators can see a considerable amount of information about site member’s IP Addresses. I’ll let Mytton briefly explain how IP addresses work. “Every machine and server on the Internet has its own unique IP address, which identifies it for the duration of its Internet session. This can be used to track down the ISP (Internet Service Provider) that the member is using, and its country. It can also be used by the ISP to track down to an individual customer” Mytton, 2005, p. 106). An Internet Protocol address is a prerequisite for interactions over the web. While there are ways to mask or alter one’s IP address it generally does provide relevant information about each user visiting a site. Invision Power Board provides a set of tools for administrators and moderators to use to record and use that information to moderate and ban users. I’ll quote it at length to give a sense of exactly how this works in the system.

IPB contains tools to allow you to find out which IP addresses your users have been using and to look up information about that IP. You can then use the IP to place a ban if it belongs to a troublemaker, or use it for troubleshooting purposes. Clicking on IP member tools will show you a screen with two boxes. The first allows you to see all the IP addresses that a specific member has used. Typing their name into the box will list all the IP addresses. You can then see how many times each IP has been used, the last time it was used, how many users have been registered with the same IP and a link to find out more (Mytton, 2005, p. 106).

By logging and organizing information about every IP address a registered user has used to log into the system the Invision Power Board system, and the other range of systems built on the same principles, are able to make it easy to enact control through information recorded in the IP address. While anyone running a system can keep HTTP logs that will maintain this information, the design of these systems are set up in such a way to make it as easy as possible to operationalize that basic information into information that can be used to try banning users. This approach to using IP addresses comes up extensively in Patrick O’Keefe’s book on managing and running online forums.

Dealing with problem users, bans and chaos. Patrick O’Keefe’s 2008 book, *Managing Online Forums: Everything You Need to Know to Create and Run Successful Community Discussion Boards* offers readers a wide range of advice and suggestions for doing exactly what the title of the book suggests. The book is the result of O’Keefe’s years of experience running, managing and administrating an array of online forums, including everything from SportsForums.net, KarateForums.com, phpBBHacks.com, CommunityAdmins.com, and PhotoshopForums.com. O’Keefe’s book is very directly focused on running, administrating, and managing web forums. In his case, O’Keefe primarily discusses the functionality of two of the most widely used Web PHP and MySQL-based platforms, vBulletin and phpBB.

While there is a considerable amount of content in the book that is potentially of interest, one section of the book provides additional discussion of problem users and the kinds of tactics and strategies that one might invoke to curb and control their behaviors. The chapter titled “Banning Users and Dealing with Chaos” describes a range of problem users and how to deal with them. The problem users include everything from

“adverquestions” in which new users show up and offer thinly veiled marketing messages, to “content thieves” who repost forum content elsewhere, to users like the “reply-to-every-post-guy”, the “freedom of speech guy” who insists that the “freedom of speech entitles people to say whatever they wish, whenever they wish, wherever they wish” which he explains remains “one of the most common misconceptions and problem issues for community administrators.” O’Keefe has provided us with an inventory of a range of problem users. Other types of users described include the “I’m Creating My Own YourSite.com” user and the most intense “Hate Him, My Minions! Hate Him!” in which someone who runs a competing online community site “becomes jealous of you and abuses his position to manipulate his user base” and sends them all to attack your site (O’Keefe, 2008, p. 185-199). O’Keefe goes on to suggest exactly how to structure and manage forums to deal with these problem users.

Curbing abuse: Report buttons and automating face-work. After providing a range of suggestions for how to handle particularly difficult user situations, O’Keefe suggests that a post reporting system is a great way to curb abuse. In this case, having your forums include a “report post” button next to each post that will add the post to a queue for the administrator or other site managers to review. Beyond including the button, he encourages admins to encourage members to use the report button and make sure that moderators use their judgment in deciding when to remove posts for violating the guidelines for the discussion board. Creating and posting these kinds of guidelines gets its’ own chapter many of these books. There is a technical system and an emergent social system in place here. First there are the structural components, the report post button, and the queue of reported posts; the second requires getting participants in the

discussion boards to use the report post button and finding and recruiting moderators who will read the queue and use their judgment in deciding what is and is not a violation. This mixture of a technical system and social norms, in effect, implements a particular set of ideas about governance. Anyone can report anyone, and moderators judge if the reported activity is in conflict with the sites rules or norms. Already significant to the study of online discourse is the fact that moderators delete and prune discussion on the site. Discussion threads are not direct transcripts of conversation — they can and often do change over time, particularly if they are on hot-button subjects.

O’Keefe then explains how “helpful notices” can affect posting. For example, on his phpBBHacks.com support forum site, whenever a user starts a new post they are prompted with a notice in red text right above the subject line where they title their post which urges them to make sure that they are posting in the right section of the forums. As another example of a helpful notice, he suggests the value of prompting users who respond to discussion threads that are older than a specified age that, again in red text, “The thread is X months old and that he might want to consider creating a new thread instead” (O’Keefe, 2008, p. 204-205). Where the report post button functions to police posts in the discussion by helping identify inappropriate posts for removal, O’Keefe’s helpful notices act to pre-police posts. The goal here is to influence the poster at the moment they are about to post by giving them a particular bit of just-in-time guidance. In the case of the later suggestion, this guidance can be programmed to only appear in particular kinds of discussions. Administrators are consciously deploying these cues to shape discussion. Thus, those studying communication in these kinds of sites need to

think about how things like the post box, or the posting page itself, may include this kind of just-in-time information in an effort to steer conversation in a particular direction.

Word censors. Under the heading of “innovative tools” O’Keefe goes on to explain two examples of ways that a developer friend helped him by creating what he refers to as “hacks” for Web forums he manages. (O’Keefe uses the term Hack to refer to extensions or plugins for software like phpBB). These hacks are interesting on a few levels, principally the way they illuminate what he refers to as “automation” can directly affect the nature of online discourse. The hacks also offer a way to understand how guidelines, norms and rules of a community site can be enacted as procedural or algorithmic rules. These scripts and hacks effectively become actors in the communicative discourse of the forum. They lay in wait and pop out at prescribed moments in discursive interaction to mediate and perturb the order of the communicative act. In this sense, the Web forum, and its hacks are something akin to robots participating in and altering the kinds of discursive interactions Goffman would describe as face-work. For example, consider how O’Keefe describes a particular problem on his phpBBHacks.com site. He explains,

We had used the word censor to block out inappropriate language but I was thinking about that system one day and it dawned on me: What if those posts were stopped when the user tried to post them? And what if the community software explained why and even highlighted the sections of the posts where the violation(s) occurred, allowing users to make adjustments without losing their post? (O’Keefe, 2008, p. 206)

The word censor he describes is functionality that will block out words from an inappropriate word list when displayed on the site. It's worth noting that word censors show up in many of the books with similar discussion of their relative merits for controlling user behavior. Instead of obscuring censored terms, O'Keefe wanted his site to automatically reject posts with censored words. He then wanted to provide in context information about what terms had triggered the censor. As a result, all communication on the site first involves a brief inquisition from the site's censor. A post will either pass or fail, and if it fails the user can make changes to what they want to say before it is ever recorded. Where the previous censoring tool wouldn't display words on the censor list, this new plugin won't let even traces of them remain. O'Keefe goes on to provide us with the text prompt he gives users who trigger the word censor.

Your post has triggered our word censor feature. The portions of the post that triggered the censor are highlighted in the preview below. Please adjust it and attempt to post again. Please note that abbreviating the term/string that was censored or circumventing our word censor feature in any way constitutes a violation of our user guidelines, and your post will be removed. (O'Keefe, 2008, p. 207)

When you tell the user what is being censored they can easily work around it. Instead of writing "ass" you write "a\$\$" and you have tricked the word censor. This note is included with the reference community guidelines, to wrap a normative layer around the word censor functionality. Earlier in the book, when describing the concept of basic built in word censoring functionality, O'Keefe suggested the importance of this norming

layer: “Don’t forget, you can never censor every vulgar term. Don’t even try. It’s not possible.” He explains, “People will use words or come up with new ones that you didn’t or cannot censor and you will have to remove their posts.” The lesson is, “do not institute an ‘if it’s not censored, it’s OK’ type of guideline” (O’Keefe, 2008, p. 25) O’Keefe wants to use the word censor to help automate part of the rules and norms of the site, but for him, it is critical that the automated functionality not become the rules and norms of the site. His hack both exposes the logic of the censor to the user, inviting them to revise their comments but at the same time explains to them exactly how they could circumvent the rules. For O’Keefe, this is where the social contract of the site’s guidelines becomes critical. The guidelines ensure that users don’t game the censor and if they do those users invite harsher reaction.

This brings up some significant considerations for studying discourse in these online communities. For O’Keefe the benefit of this approach is clear, “This saves us time and it saves the member time—his post doesn’t have to be removed and we don’t have to document the violation and contact him, because the violation is never made.” (2008, p. 207). There is a benefit to both him and the community member, they both save time and avoid an altercation. With that said, there is no record of what happened here. The user attempted to say one thing, the system politely asked them not to say it, the user self-censored based on that feedback, and all that remains is the result of this interaction. In short, when this kind of functionality is enabled on a site we are studying something that isn’t so much a transcript of what was intended to be said but instead a transcript of a conversation which was pre-censored at the point of origination.

The difficulties of banning users. From here, O’Keefe describes several approaches for banning troublesome users. Each of the user guides for community discussion systems describe the methods they provide for banning users and each mention that it’s generally a problematic issue. Any user can generally just create a new account. As he explains “Idiots and bad people exist and you’ll be dealing with them.” For him, the process of banning a user is something that the user brings upon themselves. “As an administrator, you are simply reacting to what a member does” (O’Keefe, 2008, p.207). Most of what he says about banning is what one might expect; he identifies particularly egregious individual situations that might result in needing to ban a user and discusses minor ways that a user might repeatedly violate the community guidelines in such a way that they ultimately should be banned.

O’Keefe’s extended discussion of methods for banning and his reflections on those methods are critical for understanding how control functions in these Web forums. Specifically, how administrators shape online discourse from the technical level. O’Keefe first describes banning usernames. Banning a username keeps a particular user from posting to the forum. Here the site administrator wields considerable control and power. They can turn on and off a given user’s ability to discuss. However, usernames are relatively weak ways to control or exert power over the people who use those usernames. As O’Keefe explains, “The member may just sign up again, but the username is her identity on the site and should, as such, be the first thing you ban.” There is nothing stopping this person from signing up for another account and starting to post again. Banning a username is not so much an exertion of technical control; people can sign up for accounts and start posting again. Banning a username is primarily about normative

control. Publicly shaming someone and blocking them from participating in the community under a particular username and the identity that username represents.

From there O’Keefe discusses another kind of ban, banning IP addresses. He explains, “Your community software should allow you to check what IPs a user has posted from.” If it turns out that a user “made all of the posts from one address” banning their IP “may actually work.” Even if they made most of their “posts from IPs that are similar except for the last few digits you can block an IP range and that also might work.” With this noted he recognizes the substantive risks, “Besides not always being effective, it sometimes prevents other users on the same Internet service provider (ISP) from reaching your community” (O’Keefe, 2008, p. 212). While administrators exercise considerable control over their communities the tools at hand, blocking usernames and IP addresses, are both relatively blunt instruments. An antagonistic user easily overcomes these methods. While banning an account is a trivial task, it doesn’t actually stop someone from simply creating new accounts if they so desire. Similarly, one can get around an IP ban by using a proxy server to connect to the site from a different IP address.

Attempts to ban users based on information in the underlying communication protocols are not new to IP addresses. As mentioned earlier, in 1988 Bowen & Peyton noted that some BBS sysops set a configuration option to “Deny access to callers who use 300 baud” because they felt individuals with less expensive modems were more likely to be juvenile (Bowen & Peyton, 1988, p. 74-75). Similarly in 1998, under the heading of “The User Authentication Quandary” Cliff Figallo described how some online communities were trying to use email accounts with particular Internet service providers

as a way to block out undesirable users. He started by noting the problem of using email addresses to authenticate users, “The user might have more than one email address or might give his friend’s address” (Figallo, 1998, 102) or beyond that “the increasing availability of free email services and addresses through sites that allow users to create them at will.” In short, relying on email addresses as the unique identifiers for users was becoming messy, a user could just go and create another email address and come back and harass you. To which, Figallo explained “This is resulting in some community sites refusing authorization for accounts showing email addresses not tied directly to an ISP.” So only email addresses like @comcast.com or @cox.com, addresses that can be traced back to a particular user. At the time, this was already falling apart as a mode for uniquely identifying users, as Figallo goes on to note “Unfortunately, the largest source of email addresses in the world, America Online, allows its users to create and change user names at will, and refusing anyuser@aol.com takes a big bite out of the potential pool of registrants” (Figallo 1998, p. 102). The longstanding interest in creating ways to selectively ban potential users based on these kinds of procedural methods continue to prove elusive and failure prone. The structures of the underlying communications protocols are not particularly well suited to the kinds of control that site administrators would like to enact.

Creative approaches to banning users. In a section titled “Get Creative” O’Keefe explains a series of ways to thwart attempts from bad actors to access and interact with an online community. Creativity in this case tends to mean more levels of obfuscation and manipulation. First off this includes making it look like your site is down. “You could make it so that a 404 (not found) page displays when a specific IP visits your community.” He explains how you can configure a .htaccess file to display a 403 (forbidden) page to any user from a particular IP range. Here, O’Keefe is using Apache and the HTTP protocol to shut down participation. But beyond the protocol, he suggests adding an additional layer of deception. He explains, “You can customize your 403 page to look like a 404 page, which will give the impression that the site is down” (O’Keefe, 2008, p. 214). O’Keefe is not simply suggesting that one should use the HTTP protocol to block access, he wants you to take the additional step of misrepresenting what you are doing and making it seem like the site is down.

In case these ideas sound particularly extreme, so much so that you might think they are idiosyncratic to the author. O’Keefe goes on to explain some easy ways to “simulate downtime.” In particular, the “Miserable Users” hack for vBulletin and “Troll” for phpBB, both of which “combine downtime, slowness, general confusion, and the site actually working.” The goal of the “Troll” and “Miserable Users” hacks, like his suggestions for the 403 .htaccess hack is that they will hopefully “frustrate these troublemakers and drive them away.” Not only are O’Keefe’s ideas about how to deal with troublesome users more widespread, there was actually enough desire for such functionality that similar plugins were created for the two most popular discussion board software platforms.

The global ignore or hall of mirrors. Instead of making it look like the site itself is down, O’Keefe offers a related approach for shutting particular people out of the conversation. “Sometimes referred to as global ignore, you can incorporate a function that lets the banned user log in but then makes their user go unseen to all users of your community.” The user thinks they are participating in the community but they are not actually participating. “He can still make his posts, but only he (and maybe you and your staff) can see the posts—no one else. Basically, in his eyes, the site works as is intended. He will, hopefully, just think that everyone is ignoring him and go away” (O’Keefe, 2008, p. 214).

The globally ignored user has been muted, a rather deceptive practice. It is hard to conjure up a comparative situation in other modes of communication. If you mute someone on a conference call, so that only they could hear themselves, it quickly becomes clear that no one is pausing, waiting to talk, or doing any of the other things we do when we are engaged in communication. Because the globally ignored individual continues to see themselves occupying the same space in the threaded discussion, it would likely take more time for them to realize what is going on in communication. This technique is used in other Web applications as well. When offering advice to anyone designing social Web applications in *Designing Social Interfaces*, the same tactic is described as the “Hall of Mirrors” explaining that you can put problem users “in a “Hall of Mirrors” in which only they (and perhaps other who have been banned to the Hall of Mirrors) can see their posts.” In this setting “They will wonder why no one is falling for their tricks any more” (Crumlish & Malone, 2009, p. 391). The global ignore or hall of mirrors illustrates the complex mixture of control and lack of control administrators and

moderators have. It only works as long as the user is logged in with that particular account. Seeing that they have been muted in this fashion could be as easy as logging out.

These deceptive practices illustrate a sophisticated mixture of extreme control and an extreme lack of control. The range of methods and approaches that an administrator can take are part of a complicated social dance, any and all of the technical approaches to banning and keeping users away come with significant limitations. An individual can simply sign up for a new account, or change their IP address. At the same time, it is clear from these extreme examples just how much power administrators have to shape and manipulate the experience of online discourse. The lessons for those interested in studying discourse and conversation in online communities should be the need for understanding the context of communication. There are clear practices of obfuscation that admins have at their disposal and there is every reason to believe that particular discussants deemed to be bad actors are being silenced in any number of online communities. This is not to suggest that there aren't ways of finding evidence and information about this silencing. In many cases, it would be valuable for a researcher to spend some time thinking about the ways users can be shut out of a particular online discussion and where the researcher might find traces or evidence either in the particular community or on other sites that explain how and why particular kinds of users were silenced.

Given the problems that come from attempting to ban users, some designers of online communities have developed modes for publicly shaming users. In *Designing Social Interfaces* Crumlish Malone (2009) suggest, “utilizing the technique of disemvoweling to censor unwanted comments or spam with out having to actually delete

the posts or comments” (p. 280). Traced back to usage on Usenet in 1990, the idea of disemvoweling generally involves procedurally removing all of the vowels from a users comment or post while leaving all the consonants. The technique, now used on a range of blogs like Gawker and Boing Boing, is intended to leave the users comment somewhat legible, but also publicly shame the user in a way that deleting their comment wouldn’t. As Crumlish Malone suggest, by using the practice in public the site sends a message that this behavior is “unacceptable”; further, it makes that particular “bad apple looks stupid” (2009, p. 280).

Empowering users to collaboratively moderate. Increasingly, the design of these systems are adding particular functionality, like the “report abuse” button mentioned previously, that turns some of this moderation control over to the normal registered users of the site. As the idea of “social” comes to replace the idea of online community, we increasingly find these kinds of collaborative moderation systems where users thumbs up and thumbs down or give star ranking to other user comments, posts or contributions which in turn control what is and isn’t visible in community discourse.

As Howard explains in the 2010 book *Design to Thrive* you want to “allow users to read a posting by another member of the forum and to assign a score to the value of the contribution” (Howard, 2010, p. 66). From there, “The scores of individual members can then be averaged over time and equations can be developed to allow those members of the community who have a high number of postings that have received a high rank to float to the top.” (Howard, 2010, p. 66). Moderating content is distributed through the votes of logged-in members. Instead of presenting an ongoing threaded discussion, each comment is part of a set of sortable stand-alone bit of information to organize according

to its popularity. Crumlish and Malone describe similar systems as “vote to promote” (2009, p. 266) and “systems for collective choice” (Crumlish & Malone, 2009, p. 267). In *Design to Thrive*, Howard goes on to explain that this approach has:

Two positive effects in terms of remuneration for the community. First it gives members something to shoot for (as in a video game) and it has a certain entertainment value that many people enjoy. Second, reputation and effectiveness scoring has the effect of shutting down and discouraging inappropriate postings and ineffectual messaging techniques. It discourages people from participating in flame wars, name calling and *ad hominem* attacks, which are going to lead to lower averages scores over time.” (Howard, 2010, p. 67)

For Howard, this kind of thumbs-up thumbs-down functionality both incentivizes the kinds of behavior he wants to see on his site and disincentivizes the behaviors he doesn't want to see. In this sense, it is a moderation technique that helps surface the behaviors he wants to see modeled and replicated by users. In contrast to previous approaches to deleting, or removing discussion content these techniques just shuffle it out of site. The result is that it becomes increasingly difficult to figure out exactly what a particular user would have seen at a given time. Where you can read backward in a discussion forum and generally feel confident that you are looking backward through an ongoing discussion, when comments and user responses become something that is shuffled and sorted based on things like votes, it becomes increasingly difficult to piece together what a given user may have seen in a given situation.

Moderate, ban, filter. Collectively, this survey of the tools and techniques available for site moderators and administrators to moderate and filter content and ban users suggest the staggering complexity involved in making sense of the records online communities leave behind. Alongside this, the development and nature of these tools illustrates the complex struggle that emerges between attempts to moderate and control users. Users can continue to stir up trouble in that it is very difficult to find a technical way to identify them and keep them banned if they continue to cause trouble. They can always simply start up another account. Those points aside, this entire section further underscores the logic of control and management at the heart of the idea of online communities. These are places created and managed toward particular ends by the administrators and moderators who set up and maintain them. Further, much of their power and tools are not obviously displayed. In part, because it is so easy for users to just come back and cause trouble, many of the tools, like the global ignore or the ability to just stop sending out email notifications are rather coy attempts to use a kind of soft power to manipulate and push online community discourse in the direction that the site management want it to go into.

Reputation systems. At this point, much of our experience on the Web is structured and created based on sets of underlying reputation systems. In the 2010 book, *Building Web Reputation Systems: Ratings, Reviews & Karma to Keep Your Community Healthy*, Randall Farmer and Bryce Glass explain that designing these systems is “one part each engineering, social science, psychology, and economics” (Farmer & Glass, 2010, p. x). That is, the design models for ranking users and users’ contributions to sites are as much a form of social engineering as they are technical. From Farmer and Glass’s perspective, explicit reputation models and systems are “critical for capturing value on the Web, where everything and everybody is reduced to a set of digital identifiers and database records” (Farmer & Glass, 2010, p. 20). A far cry from the utopian visions of 3D avatars finding spiritual enlightenment on the Web in the 1990s, the systems that undergird the Web are increasingly based on the assumption that everything and everybody is reduced to records in a database in the system.

This section briefly tours the origins of some of these reputation systems, looking at their development in BBSes and in the online community discussion board platforms. From there, the remainder of the section delves into recent work reputation systems in social Web applications to document the increasingly sophisticated developments of social theories of user action and agency that inform the design of Web applications. This analysis points toward the way that the idea of distributed and collective intelligence is working its way into the design of online community. Increasingly, the view of an online community is itself organized and created as the result of analysis of the reactions and actions of other community members. The entireties of these systems treat user action as set of inputs that inform and structure the resulting outputs. As these systems become

more and more sophisticated they are developing a deeper respect and acknowledgement of the reactive nature of how their users engage with these systems. Interestingly, the result is that more and more of the natures of these reputation systems are actually being obfuscated from end users, instead functioning to control the internal functionality of systems.

The origins of reputation in the database. While the term “reputation system” for online communities didn’t come into use till the late 90s and early 00s the fundamental principles that make it possible were there even in BBSes. For example, this explanation of how a BBS functions from Chambers 1995 book, *Running a Perfect BBS* illustrates the emerging logic of the reputation system.

Each time an existing user logs onto your BBS, the bulletin board program loads part of the corresponding user log entry into memory and keeps a record of how many files the caller receives from the system, how long the user remains online, and the number of messages the caller writes. This statistical data is often used by the bulletin board program or external utility programs to create reports, flag those who are not participating (by sending files to your system and entering messages), and award extra time and services to those members of your system who do more than their share. (Chambers, 1995, p. 23)

From the bottom up, online communities are powered by database logic. Users’ actions are logged and loaded and can easily be compared and contrasted to other users. Already, in Chambers explanation of this process we see the beginnings of the logic of

the reputation system. As the sysop you can use the data recorded in the logs as the basis to punish and reward users based on the logged records of their activity. All you need to do is identify which behaviors you have records of are the ones you want to incentives and you can provide those users with additional privileges.

Institutionalized gossip. The first of the online community books in this study to explicitly talk about reputation systems is Amy Jo Kim's 2000 book, *Community Building on the Web: Secret Strategies for Successful Online Communities*. Kim's discussion of reputation systems comes under the heading of "institutionalized gossip" (p. 109). As she explains, "In both offline and online communities, people develop reputations primarily through word of mouth." That word of mouth part is the gossip part. Kim goes on to explain how it becomes institutionalized, "you'll need a more explicit way to track and display reputation in communities where actions speak louder than words, where those actions are measurable, and where they're meaningful for decision-making" (Kim, 2000, p. 109). Identifying modes to measure actions that are meaningful to decision making is the crux of the reputation system for Kim. Kim uses eBay as a model reputation system:

In a commerce-based community, knowing someone's trading history is an important criterion for a member contemplating a financial transaction. Were the goods delivered as advertised, and in a timely manner? Did the payer's check clear? On eBay, buyers and sellers start off with neutral, blank-slate reputations, which change as other members rate their interactions... each person's eBay reputation is a cumulative summery of

the positive, negative, or neutral marks that others assign to them. (Kim 2000, p. 109)

Here, the cumulative ratings of transactions from one particular eBay user become the basis of their aggregate reputation score. It is helpful information for making a decision about if this particular person is trustworthy. Importantly, Kim goes on to note “In a conversation-oriented Web community, implementing an explicit reputation system is tricky, because reputation is highly subjective in social interactions.” While it’s easy to see how rating transactions on eBay makes it helpful to measure the reputations relevant to selling things, the subjective nature of evaluating other social interactions leads Kim to suggest that it’s better to avoid building explicit reputation systems for these kinds of activities. She goes on to explain, “Unless there are specific, relevant actions to measure, a reputation system is usually not called for – it’s better to rely on word of mouth” (Kim, 2000, p. 109). Since writing this, however, there have been many increasingly sophisticated attempts to measure and monitor user’s reputations and use those measurements to prompt users to make the kinds of actions that a site owner wants them to make.

Ranks in phpBB, vBulletin and Invision Power Board. As online discussion board platforms like phpBB, vBulletin and Invision Power Board rolled out in the early ‘00s they came with some relatively simple reputation systems built into their core design. Members of online communities running on these platforms are likely aware of the way the systems calculate and display ranks.

Under the heading “manage ranks” Mytton (2005) explains the functionality and goals of these rank systems in the user guide for Invision Power Board 2:

Ranks are used to encourage members to post. As their post count increases, they will rise up the ranks, and gain status within your community. Used well, they encourage more posting and therefore greater activity. You can define your own member ranks from the Manage Ranks option. From a fresh installation, you will see three already defined: Newbie (0 posts) Member (10 posts) Advanced Member (30 posts). Once a member reaches the Min Posts value, their rank will be automatically changed. ‘Pips’ (or a custom image you can create) will appear beneath the member’s name in their profile and in their posts at this point. (Mytton 2005, p. 96)

The logic of this system is simple enough. You want your users to post more so you track their post count and give them different markers of status based on those ranks. What Mytton does not mention is that often these attempts to encourage members to post result in people gaming the systems (this point was discussed more extensively in the introduction in relation to the design of the Vanilla Web forums system). While this

system can encourage users to post, it doesn't say anything about the quality of these posts. For example, in one phpBB forum I participated in there was a whole off topic section of the forums where some users would regularly create discussion threads simply to post hundreds of messages to raise their post count to advance to higher ranks. As Kim had suggested, it is very difficult to implement systems that measure user action for these kind of systems, as it's hard to automatically quantify exactly what is valuable about a user's response. With that noted, it remains curious that all of the major discussion board platforms developed at this time come with these kind of ranks enabled out of the box. Despite the fact that these features were already known to be problematic, it was just assumed that this kind of functionality was required to be able to make an online community system. As the design of online community systems has matured one of the most extensively developed set of features is a far more nuanced approach to designing and modeling reputation systems.

Reputation at the heart of designing social. "What is reputation in an online community? In its broadest sense, reputation is information used to make a value judgment about an object or a person," so opens Farmer and Glass's 2010 book, *Building Web Reputation Systems: Ratings, Reviews & Karma to Keep Your Community Healthy* (p. x). In this three hundred-page book from O'Reilly Press these authors provide a comprehensive approach to modeling, designing, and encouraging users to become inputs and outputs for the management of user generated content.

The reputation statement. For Farmer and Glass (2010), the crux of reputation systems is the development of reputation statements. For these authors, at the most base level reputation is summed up as "a source makes a claim about a target." This could be

something explicit like, “Bill says Harvard is expensive” or implicit, like “Wendy chose Harvard over Yale” (Farmer & Glass, 2010, p. 7). In both cases, one can make inferences about the target based on this relationship. For these authors, the process of designing these systems becomes about defining the targets of reputation, identifying sources to develop opinions and codifying the claims that sources can make about your targets. The figure below shows how this notion is applied in a visual grammar to a system for rating movies. In this case, the user Stan has given a four star rating to the movie *Aliens*, which can then be used to aggregate a collective rating for the movie. This example illustrates a core point of their approach, reputation is their generic term for them reputation is a property of objects as well as individual. So in this case, Stan is contributing to the reputation of the movie in this particular site.

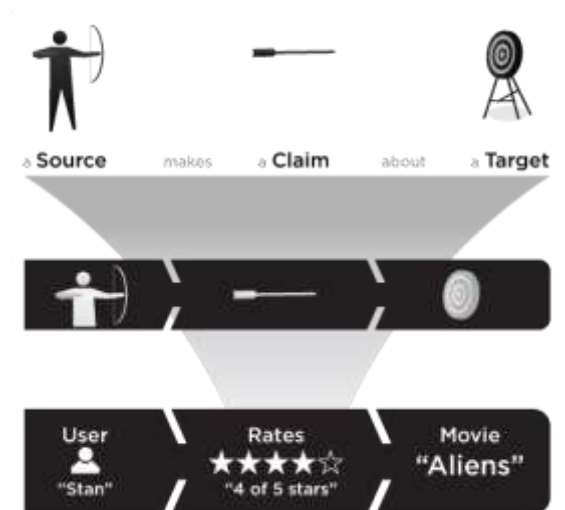


Figure 5. Reputation Statement Diagram: p.22. Much like in archery, anyone can fire a claim at anything. It doesn't necessarily mean the claim is accurate. Throughout this book, claims will be represented by this stylized arrow shape.

Much of the book is about when you should and shouldn't show what parts of your reputation system calculations. There is considerable acknowledgement of the fact that significant reactivity comes from users seeing this kind of information and changing their behaviors. In general, they suggest shying away from showing reputation scores for people and instead on focusing on reputation scores for objects (particular reviews, or comments or videos etc.).

To provide a sense of how complex the systems are that they are explaining and suggesting developers consider creating consider their explanation of Flickr's interestingness system. Briefly, the photo-sharing site Flickr defaults to ordering images on the site by their "interestingness." The interestingness of a photograph is the result of a wide range of actions any number of users take to interact with the photo combined with information about each of the users who view the photo that results in a score for each particular image and informs an overall rating of interestingness of the photographer who took and shared the photo. All of the activities users engage in with each photo are weighted through a series of filters, in this case the stronger a relationship that a viewer of a photo has to the photographer in terms of connections within the social network component of Flickr results in more weight to their actions on the photograph. Through this range of inputs and weights a composite score is calculated daily for all of the photographs on the site and the 500 most interesting are shown on the "explore" page of the Flickr website. The actual scores, and the exact process of how the scores are calculated is not made public, and the order of the 500 photos is actually randomized to make it less clear exactly how this is calculated. As Farmer and Glass explain "randomness makes it nearly impossible to reverse-engineer the specifics of the

reputation model—there is simply too much noise in the system to be certain of the effects of smaller contributions to the score” (Farmer & Glass, 2010, p. 89). Given that people would try to game the system if they could figure out the exact nuances of how it is weighted the decision to obfuscate how exactly the scores are generated serves to help the designers of Flickr encourage the behavior they want to see in general without giving enough information out to make it easy for users to focus on how to game their system.

The example of the Flickr interestingness reputation system illustrates the increasingly sophisticated way that user actions are becoming part of a network of input that creates and structures the outputs those users experience in online communities.

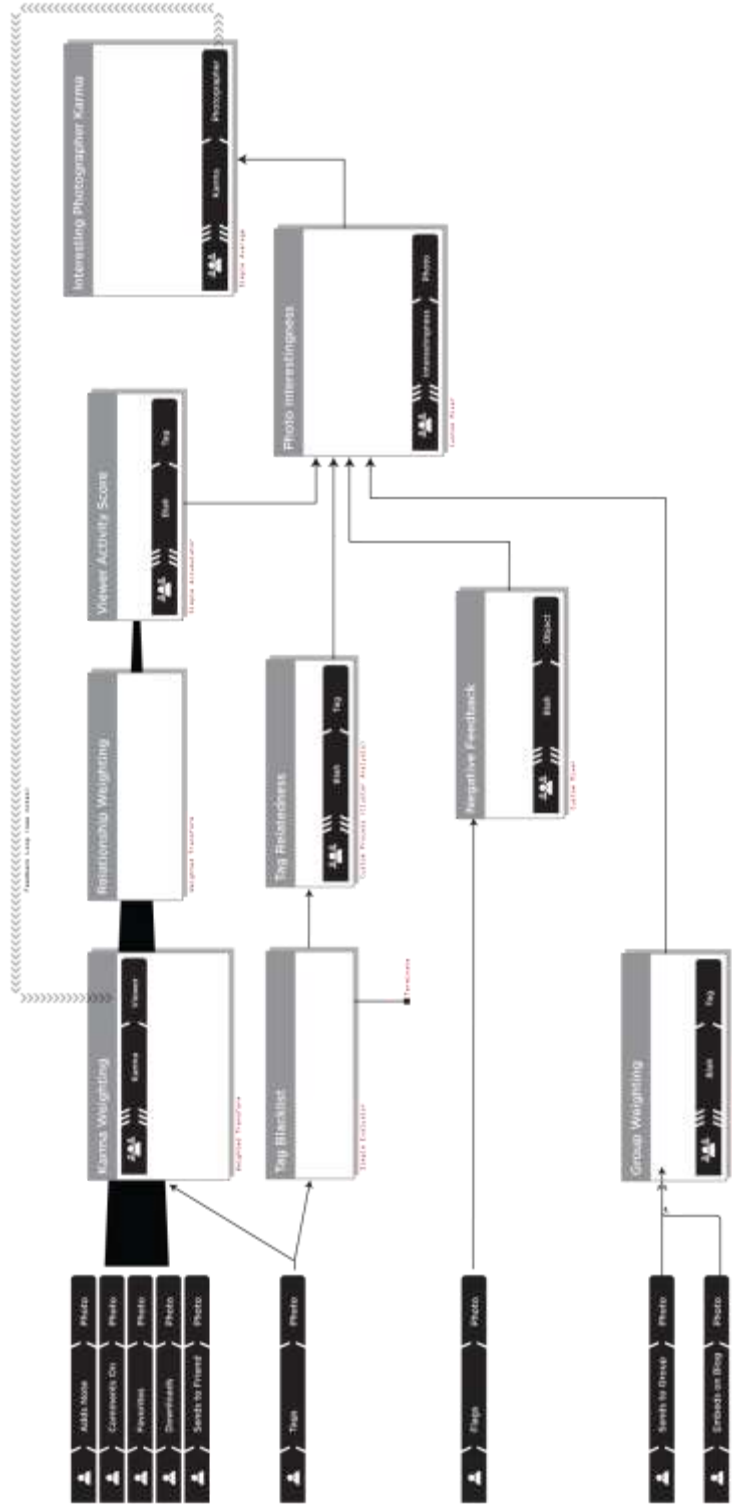


Figure 6. Reputation Model for Flickr Interestingness: p.84. In this model, a range of different forms of information created by users action contributes to the reputation of the photo

Designing for reactivity. As already mentioned, one of the core principles of Farmer and Glass's approach to designing reputation systems for online communities is to consider the reactive nature of the systems one implements. For example, here is how they explain why they are generally opposed to the use of leaderboards for ranking users based on their contributions.

The most insidious artifact of a leaderboard community may be that the very presence of a leaderboard changes the community dynamic and calls into question the motivations for every action that users take. If that sounds a bit extreme, consider Twitter; friend counts and followers have become the coins of that realm. When you get a notification of a new follower, aren't you just a little more likely to believe that it's just someone fishing around for a reciprocal follow? (Farmer & Glass, 2010 p. 195)

In incentivizing users to make particular actions to make it onto a leaderboard, to climb the ranks, they suggest the designers of a site call into question the motivations behind the behaviors that they want users to engage in. The example from Twitter underscores this, by prominently placing the metrics of followers on the site the site is explicitly encouraging people to treat those numbers as the metrics of value in the community and it changes the nature of the way people interact. No longer are people just following folks because they are interested in hearing from them, but to try and see if they can gain them as a follower as well.

Ultimately, Farmer and Glass are rather wary of approaches to showing metrics of reputation in online communities. Instead, much of their advice focuses on how to create models that function to sort, organize, and filter user generated contributions like comments, reviews and such and to rank and weight users evaluations of each other to decide what content is shown to what users in what contexts. It's intriguing that their work, and many of the similar kinds of ideas that come out of Crumlish and Malone's (2009) *Designing Social Interfaces* book largely focus on attempting to obfuscate many of these metrics at the same time that educational technology enthusiasts have become particularly excited about notions of gamification, exemplified in a range of educational research projects focused on digital badging funded by the MacArthur foundation, that more or less bring over exactly the kinds of features and functionality that the designers of online community reputation systems think are not particularly useful, namely incentivizing users with badges and maintaining leaderboards to rank users based on their activity.

Database record being. As the idea of the social Web has eclipsed much of the notion of online communities the reputation system has increasingly become the logic that defines and structures our experiences with each other over the web. As Farmer and Glass explain, two of the architects of these reputation systems explain, measuring and creating loops of feedback between input metrics and output metrics are essential to structuring interaction on the web, "where everything and everybody is reduced to a set of digital identifiers and database records" (2010, p. 20). From the point-of-view of the reputation system on a site like Flickr, users are the source of inputs that help to define the results of the system as viewed by other users. Interaction and exchange between

people is increasingly not just computer mediated, but are actively structured, designed and engineered. The kinds of face-work in social interaction that Erving Goffman (1955) described are becoming more and more enmeshed into a process where algorithms and models that govern what is seen when are themselves actors in communication.

CHAPTER 7: CONCLUSIONS AND DISCUSSION

The 28 books analyzed in this dissertation result from, and articulate, perspectives in the discourse of the design and implementation of the server side software that enables online community. The tactics discussed by each of these authors suggest the goals and values of their work. Analysis of these books demonstrates the role software plays in online discourse. This analysis also documents design elements that researchers interested in studying the textual record of online discourse should attend to in research on online communities. In my conclusion and discussion I briefly present a set of questions for researchers to ask of the records of any particular online community and some strategies to use to try to mitigate some of the inherent issues with interpretation online community records.

Through a historical review of the rhetoric of online community I've suggested that the dominant ideology of online community establishes websites that grant permissions to varying degrees to different users toward the goal of controlling users to exhibit the kinds of behaviors that the owner of an online community wants them to exhibit. While there is a persistent mixture of desires for the users or participants of online communities to have a role and a voice in online communities, those desires are largely in contrast to the explicit modes by which control is enacted in those online communities. By and large, online communities are governed by a logic of ownership, control and limited permission, and as such it's important to approach the records of

these communities with skepticism in terms of what they actually represent about the views and perspectives of members and participants.

Control, Empowerment and its Limits

Visual design, information architecture, text prompts and reward systems are all designed with the intention of stimulating particular types of discussion between particular kinds of users. Much of this is evident to someone who is willing to closely read the resulting interfaces. The placement of a post button, the structure of a reward system, all leave interpretable traces in the rendered pages on a user's screen. As is evident in O'Keefe's examples of extensive manipulation of problem users, administrators have considerable power to control what is passed to a user's Web browser. At the same time, the problems with different techniques for banning users illustrate the fundamentally limited nature of those control techniques. The technical means of control are limited by the ability of users to change their usernames, or IP address. The administrator's tools for banning a person are all tools for banning poor surrogates for actual people, usernames and IP addresses. The forum administrator depends on the norms and rules established in the posted textual guidelines for the site to establish and retain control.

Analysis of these books offers a useful means to further triangulate how power and control work on the web. The tension between control and empowerment found in descriptions of the tactics used provides nuanced validation of the same tensions Galloway found in his examination of the specifications for TCP/IP and DNS in *Protocols: How Control Exists After Decentralization*. Chun's argument that the Web

was “sold as a tool of freedom” but it can also be understood as a “dark machine of control” (Chun, 2006, p. 2) could very well be applied to this brief description of the history of online communities. With that said, this idea of virtual utopia giving way to dystopia over sells the experience of these in practice. One could alternatively suggest that an era of boosterism for the high minded potential of these systems gave way to a much more mundane set of practical and more technical presentations of how particular systems work in practice.

Theories of Users as Generalized Others in Design

These texts espouse theories of users. They each offer taxonomies of users. In this respect, the texts offer insight into ways administrators and developers think about their users. Exploring how these authors describe good and bad users — whether as engaged and on topic participants and commentators or as the people who make them money — offers a point of entry into how the idea of these user types play a role in the design and functionality of these systems. The various ideas of the good and bad user are sets of expectations through which functionality is described and explained.

These generalized others, these ideal types of users, play a key role in the design and configuration of online community software. The ideas of different kinds of users serve as warrants in the arguments that each of these authors present for why one should design and implement software in a particular way. Studying these texts suggests models for how developers’ ideas of particular theoretical good and bad users play a role in their design decisions which in turn are manifest in the actual material affordances of the software itself.

These theories of users are committed to the page and disseminated as cultural scripts for other developers and administrators to look up and potentially integrate into their internal theories of users. Beyond being inscribed on pages, these ideas are also encoded into the procedural scripts in the server side software we interact with as users operate. The ideas of users depicted in these texts become actants in our social interaction as they are operationalized into the design of the software itself.

Software as actant, actor, and mediator in face-work. Throughout the stories and advice in these texts, the functional and structural characteristics of these software systems can be thought of as interjecting themselves as actants, as mediators or as procedural participants in the face-work that occurs in online communities. In the case of the excerpt from Powazek about the post button, the designer has interceded to structure the visual layout and interaction of the site to act as a filter for particular kinds of interaction. While he is not blocking out particular kinds of users he is explicitly suggesting that designers put together the infrastructure of online communities in ways that promote particular kinds of values. In the case of Buss and Strauss, we find suggestions from designers to use a behaviorist theory of the self and society to underpin a system of rewards and encouragements doled out by the online community software to reinforce and reward particular behaviors that drive profit. From reading these texts we cannot know how individual users perceive or are affected by these mediators of interaction, but we do gain an understanding for how developers and administrators might be thinking about and designing for particular identified, intended behaviors.

The software is an actor, one that carries traces of the platform, of the plugins and hacks, of the administrator's decisions. The scripts that pop up and give helpful advice,

the plugins that make it look like the site is down, the reputation system that tells me I have 200 points—all are simultaneously manipulating me to behave in particular ways and enabling, empowering me to engage in specific behaviors, and suggesting ways others should engage with and treat me. These how-to texts offer an approach for identifying how developers and administrators design for particular intended behavior and embed their values and ideas into the functionality of these systems. While designed with a particular set of theories and values about communication and users, the resulting software then acts with and upon users. Users interpret, work around, and use the software to their ends and their use and action is itself interpreted and evaluated by the developers and admins. Developers, admins, users and software intermingle continually configuring and reconfiguring online discourse.

Applied Implications of Understanding Online Communities

Aside from these general conclusions about understanding the relationship between online communities and our general understanding of the Web I wanted to briefly offer a set of particular set of implications from this work 1) for those interested in studying online communities and 2) for those interested in using or building online communities for educational purposes.

Implications for studying online communities. In establishing a research method for netnography, ethnographic research on online communities, Kozinets suggests that the wide availability of archival data in old discussion boards and listservs provides the equivalent of “every public conversation being recorded and made available as transcripts” (Kozinets, 2010, p. 68). While he recognizes that the “the nature of the interaction is altered—both constrained and liberated—by the specific nature and rules of the technological medium in which it is carried” (Kozinets, 2010, p. 68) this idea that the textual records of content from online discussion boards and other mediated communications are the same as transcripts of public conversations is fundamentally problematic given the results of this study.

The set of tools available to those who run and manage online communities to manipulate, reorganize, and otherwise exercise control over online discourse mean that any attempt to study the records of online communities must begin with the assumption that what one has access to is partial, fractured, and likely reflects the desires and whims of whomever it was that continues to make them available.

Someone interested in studying a particular online community should start by understanding the underlying design and structure of the community. The historical section of this dissertation offers insight into some of the ideas at play behind particular tools and their functionality, which can help someone interested in studying a particular community to contextualize their work in context of the tools in the given system. For example, knowing that a tool like Invision Power Board v2 by default creates roles of Newbie (0 posts), Member (10 posts), Advanced Member would keep an analyst from inferring intent of the particular administrators of the community to these labels.

Knowing that these are the default terms in the software and not the explicit choice of the individuals running a particular site might even, in context, contribute to understanding how little care the administrators of a site have spent in customizing and configuring it. Aside from specific examples with individual platforms documented in this dissertation the general approach to finding user guides and manuals for running the software of a particular online community can likely offer this kind of contextual information.

Returning to the idea of netnography, when discussing the online records of online communities available in discussion boards and list serves Kozinets' suggests, "Archival cultural data provide what amounts to a cultural baseline. Saved communal interactions provide the netnographer with a convenient bank of observational data that may stretch back for years" (Kozinets, 2010, 104). The notion of a transcript suggests that one has access to a full and complete recording of discourse. As I've already suggested, given this study it is a fundamental error to mistake the records of online communities as recordings or transcripts. Intriguingly, Kozinets' suggestion of thinking about them as "archival data" offers a much more nuanced way to approach them. Where the analogy to a transcript suggests a complete record of discourse, a robust sense of the idea of the archive suggests the partial nature and the important role that power plays in the constitution of that partial record.

If we get away from the popular notion of archives as any set of old material and shift to understand some of the work on actual archives, places that collect, preserve and provide access to historical materials I think we find a better place to think about studying the records of online communities. In *Silencing the Past: Power and the Production of History* Michel-Rolph Trouillot examines the historical record and

historiography of the Haitian revolution. One of his principal contentions is that while it's common to think of archives as places that preserve the past, it is equally right to think of them as institutions that produce silences of the past as well. Archives select, preserve and provide access to materials along with their mandates, and in the case of the colonial archive Trouillot considers, historians interested in understanding the experiences of those who were colonized need to read in between the lines of what material remains to try and understand the perspective of the colonized.

A comparison between the colonial archives Trouillot studies and the archived text in an online community might seem overblown, but while there is a completely different magnitude of control and power at play in the colonial archive and the records of some anime discussion forums the same principles are at work. What persists is what those in power have a vested interest in making persist or at least didn't care enough to erase. From this perspective, it is best for those interested in studying online communities to approach the extent material they can find with the same kind of suspicion that a historian would bring to studying records in a colonial archive. Furthermore, to bring an awareness and sensitivity to the kinds of controlling actions the technical infrastructure of the conversation and discussion that originally produced those records afforded/encouraged. It's important to ask whose voice is heard here? How do I know this is what it purports to be? What parts of this set of records are missing? Who constituted this collection of records, and for what purpose? Lastly, where might I look in this data for perspectives and points of view that differ from those who had the power to decide what is and isn't kept?

Implications for educators interested in using and building online

communities. The ideas about community and many of the assumptions about community embedded in the design and rhetoric of online community are likely not very similar to the ideas and notions of community that educators bring to the table when they think about building online communities. It is all too easy to pick up and run with the tools and visions that Silicon Valley and venture capitalists have developed and embedded in the design of these systems. When we think about using these tools, for instance when educators embrace badging systems based on web forum and online community systems, it is important to remember that these are by and large tools created to extract value out of users. They are not designed with the goal of creating public goods, even if they sometimes wear that language.

I would suggest that educators and individuals interested in the potential role that online communities can play in civic society revisit some of the initial visionary ideals of online community. In particular, be suspicious of anyone talking about online community without discussing the notion of governance. In keeping with that perspective, it is likely a good idea for educators to spend time with books like Jono Bacon's *The Art of Community* which focus on the logic that supports and animates the open source and free culture movements.

As educators go to study and develop systems that give out badges, like those funded through the MacArthur Foundation's Digital Media and Learning grants to create online badge systems, it is important to understand the ideas and ideology behind their design. Briefly, much of the motivation and explanation for the value of digital badge initiatives is grounded in appeals to how reputation systems work in particular online

communities, like Stack Overflow and Slashdot (Carey, 2012). In this respect, the rather sophisticated approaches to thinking about the reactivity of users in different designs of reputation systems is likely useful to those endeavors. With that noted, I encourage educators and educational researchers interested in these topics to recognize that the design of these systems is grounded in a particular set of ideas and theories about human motivation, an area where educational and developmental psychologists have a considerable amount to offer to this conversation.

Specific questions to ask of records of online communities. The broad trends in this research are useful in their own right. However, I think they are particularly useful for directly informing research practice for studying online communities. To make the results of this research more directly actionable for researchers interested in studying online communities I have prepared the following list of questions to ask of online communities and some potential strategies to consider taking.

1. Visual design and text: Where is the call to action? For example, where is the post or comment button on the screen and what might this suggest about the context a user may have before posting. How and where are members invited to post? What is the site's tagline and what kinds of cues does the tagline suggest about who is and isn't invited to participate? In each of these cases, think about how the design, layout and text invite particular kinds of participation from particular kinds of users and might dissuade other kinds of users from participating in other ways.
2. Steps and processes: Piece together what the sign up process and the moderation processes are for the site. You can likely find information about this in stated

policies and rules for the site. Think through how these processes might act as filters to sort out what kinds of people are able to say what kinds of things. For that matter, think about how the process might set a tone for how users should participate or behave.

3. Reputation systems: Is there an indication of the presence or absence of ranks and roles for users? The reputation system might suggest a particular perspective from the owners of the site on how to motivate and nudge members to post more.
4. Design decisions and community platform defaults: Before inferring what a particular feature in a site means identify if it is in fact just part of how a particular platform works. Is a feature of a site a design decision of the site owner/administrator or is it a default or generic feature of the platform they are using? Keep in mind that in many cases a particular kind of rank or reputation system might be there just because it's a default. With that said, realize that the decision to use a particular system (for example phpBB or Vanilla Web forums) is likely to itself be something worth considering in terms of what it suggests about the site owner's values and perspective.
5. Relationship to site owners: Consider what kind of relation is likely to exist between the site owners and the site users. For example, if you were interested in the perspective of the men who participated in the L'Eggs pantyhose site's online forums, the fact that those men are directly at odds with the site owners' vision suggests it could be difficult to find their voice in records of the community the owners maintain. If you have reason to believe the members you are interested might be particularly at odds with the goals of the site owners you should be all

the more suspicious and critical in how you approach the records of the online community.

6. Historicize interpretation and analysis: When are these records from and what ideas and values were at play during that particular historical period that might have implications for your interpretations? I've suggested a set of historical periods that surface from reading these how-to guides, re-read some of the information about a particular historical period and think about how that might change how you approach your interpretation.

Strategies to consider. Alongside those targeted sets of questions, I have also pulled together a more broad set of strategies. Working from the assumption that one shouldn't trust the records of an online community as a transcript of communication each of these stratifies could be used to help to triangulate what actually occurred in a particular online community.

1. Seek out third party archived websites: For example, see if the Internet Archive or other organizations that participate in the International Internet Preservation Coalition have copies of the community. Web archives provide snapshots of what an online community's pages looked like over time so they are likely to help surface discrepancies or removal of parts of the records of a community.
2. Look for traces of absences or silences in the records: Take the approach that historians take to colonial archives. Look for evidence of absence, like discussions that don't make sense because there are references to users comments that are no longer there, or missing date ranges in parts of the discussion threads. Given that many of the tools for Web forums and community platforms involve

tools for mass moderation and removal of posts it's likely that there will be entire users contributions removed or blacked out, or significant missing sections in many records of online communities.

3. Seek out moderators and users for their perspectives: Much of an online community is likely to be hidden, only visible to particular users with particular permissions. So if you can identify and find someone to discuss this with you have a good chance of identifying what absences and biases might be evident in the records you have to look at.
4. Look for perspectives on the online community from other online communities records: Look for discussion of the community you are studying in the records of other online communities. Different communities are likely controlled by different sets of administrators and moderators and you could very well surface opinions and perspectives on the community you are studying by seeing how it is discussed and described in the records of other online communities.

Conclusion: Further Disaggregating the Internet

One of the opening ideas in framework for this dissertation was to take seriously the suggestion by anthropologists Miller and Slater, from more than ten years ago, that social scientists studying community interaction on the Web need to focus on “disaggregating the Internet. That instead of looking at a monolithic medium called ‘the Internet’,” it is critical to focus on the range of practices, software and hardware technologies, modes of representation and interaction that may or may not be interrelated by participants, machines or programs (Miller & Slater, p.14, 2001). This disaggregated

vision of the Internet is the vision of online communities we find through the discourse evident in how-to books for administrators and managers of online communities.

Collectively, one of my biggest takeaways from this research is the importance of zeroing in on the particular features of particular online communities and the interplay between the software, administrators, moderators, underlying infrastructure of the Web and members and participants play in producing community on the web. Along with this set of relationships, the idea of the user in the mind of the site administrator and developer is critical. In this respect, it's not simply the relationships between software, administrators, moderators, members and participants but also the ideas that each of those actants have about each other that play a key role in shaping the kinds of computer mediated face-work that occurs in online community. I hope that social scientists interested in working with the records of online communities find the questions and perspective I have developed here useful in informing their studies.

APPENDIX: EXAMPLE BOOK DATA COLLECTION SHEET

Overall summery, notes and commentary on the book (2-3 paragraphs).

1. **Author Bios:** How does the author present himself or herself? What is their expertise? What are the back-of-the-book blurbs that are supposed to convince me of the author's expertise?
2. **Introducing Online Community:** What is the point? Big picture definitions of Web communities, author's goals for the book. Who is identified as the audience?
3. **Technologies in the Book:** What technologies are discussed in the book?
4. **Visual Design and Information Architecture stories:** Give a brief description with page numbers and pull quotes. **In blue: offer a tentative theory of underlying values/ideology**
5. **Moderating Content and Users:** Banning users, filtering comments, is there deception or no deception. When is it OK and when is it wrong, the ethical demission. Is there a section in this on explicit rules and policies for users? Is the freedom of speech story present? **In blue: offer a tentative theory of underlying values/ideology**

6. **Reputation systems:** Is there discussion of giving users points or badges for participation. This would be everything from post count, to post ranks, to actual badging systems. Look for watch words like social hierarchy, and also look for counter arguments about users “gaming” these systems and decreasing the quality of discussion. **In blue: offer a tentative theory of underlying values/ideology for each.**
7. **Theories of Users:** Document incidents where kinds of users are described, troublesome users, helpful users, users who could become moderators, etc. Build out lists of kinds of users in each of the texts. **In blue: look over the whole list, how is this similar and different from the other books? What kinds of users show up in books that focus on which kinds of tactics and approaches?**

REFERENCES

- Akrich, M. (1992). The de-scription of technical objects. In W. E. Bijker & J. Law (Eds.), *Shaping technology/building society, Inside Technology* (p. 205–224). Cambridge, MA: The MIT Press.
- Bacon, J. (2009). *The art of community: Building the new age of participation*. Newton, MA: O'Reilly Media.
- Black, R. W. (2005). Access and affiliation: The literacy and composition practices of English-language learners in an online fanfiction community. *Journal of Adolescent & Adult Literacy*, 49(2), 118-128. doi:10.1598/JAAL.49.2.4
- Black, R. W. (2008). *Adolescents and online fan fiction*. New York, NY: Peter Lang.
- Bogost, I. (2011, May 3). Persuasive games: Exploitationware. From http://www.gamasutra.com/view/feature/6366/persuasive_games_exploitationware.php
- Bryant, A. (1995). *Growing and maintaining a successful Bbs: A sysop's handbook*. Reading, MA: Addison-Wesley.
- Bowen, C. (1988) *The complete electronic bulletin board starter kit*. The Bantam Book software library. New York, NY: Bantam Books.
- Buss, A., & Strauss, N. (2009). *Online communities handbook: Building your business and brand on the Web* (1st ed.). Indianapolis, IN: New Riders Press.
- Carey, K. (2012, November 2). Show me your badge. *The New York Times*. Retrieved from <http://www.nytimes.com/2012/11/04/education/edlife/show-me-your-badge.html>
- Chambers, M. L. (1994). *Running a perfect BBS*. Indianapolis, IN: Que Publishing.
- Chun, W. H. K. (2005). *Control and freedom: Power and paranoia in the age of fiber optics*. Cambridge, MA: The MIT Press.
- Clark, A. (2008). *Supersizing the mind: Embodiment, action, and cognitive extension*. New York, NY: Oxford University Press.

- Crumlish, C., & Malone, E. (2009). *Designing social interfaces: Principles, patterns, and practices for improving the user experience*. Newton, MA: O'Reilly Media.
- Douglass, R. T., Little, M., & Smith, J. W. (2005). *Building online communities with Drupal, phpBB, and WordPress*. New York, NY: Apress.
- Duncan, S. C. (2010). Gamers as designers: A framework for investigating design in gaming affinity spaces. *E-Learning and Digital Media*, 7(1), 21-34.
- Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. London, England: Routledge.
- Farmer, R., & Glass, B. (2010). *Building web reputation systems*. New York, NY: O'Reilly Media.
- Figallo, C. (1998). *Hosting web communities: Building relationships, increasing customer loyalty, and maintaining a competitive edge*. New York, NY: Wiley & Sons.
- Fuller, M. (2003). *Behind the blip: Essays on the culture of software*. New York, NY: Autonomedia.
- Galloway, A. R. (2006). *Protocol: How control exists after decentralization*. Cambridge, MA: The MIT Press.
- Gee, J. P. (2005). *An introduction to discourse analysis: Theory and method* (2nd ed.). London, England: Routledge.
- Gee, J. P., & Hayes, E. R. (2010). *Women and gaming: The Sims and 21st century learning*. Basingstoke, England: Palgrave Macmillan.
- Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Learning, teaching, and scholarship in a digital age. *Educational Researcher*, 38(4), 246–259.
doi:10.3102/0013189X09336671
- Hedtke, J. V. (1990). *Using computer bulletin boards*. Portland, OR: Management Information Source for the Twenty-first Century.
- Hine, C. (2000). *Virtual ethnography*. London, England: Sage Publications.
- Howard, T. (2010). *Design to thrive: Creating social networks and online communities that last*. Burlington, MA: Morgan Kaufmann.
- Hutchins, E. (1995a). How a cockpit remembers its speed. *Cognitive Science*, 19, 288, 265.

- Hutchins, E. (1995b). *Cognition in the wild*. Cambridge, MA: The MIT Press.
- Ito, M. (2009). *Hanging out, messing around, and geeking out: Kids living and learning with new media*. Cambridge, MA: MIT Press.
- Jenkins, H., Purushotma, R., Weigel, M., Clinton, K., & Robison, A. (2009). *Confronting the challenges of participatory culture: Media education for the 21st century*. Chicago, IL: The MacArthur Foundation.
- Kingsley-Hughes, K., & Kingsley-Hughes, A. (2006). *vBulletin: A users guide: Configure, manage and maintain your own vBulletin discussion forum*. New York, NY: Packt Publishing.
- Kim, A. J. (2000). *Community building on the web : Secret strategies for successful online communities*. San Francisco, CA: Peachpit Press.
- Kirk, A. (2007). *Counterculture green: The whole Earth catalog and American environmentalism*. Lawrence, KS: University of Kansas Press.
- Kozinets, R. V. (2010). *Netnography: Doing ethnographic research online*. London, England: Sage Publications.
- Lankshear, C., & Knobel, M. (2006). *New literacies: Everyday practices and classroom learning* (2nd ed.). Maidenhead, England: Open University Press.
- Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. New York, NY: Oxford University Press.
- Levy, P. (1997). *Collective intelligence: Mankind's emerging world in cyberspace*. Cambridge, MA: Perseus Books.
- Martin, J. L. (2011). *The explanation of social action*. New York, NY: Oxford University Press.
- Maxwell, J. A. (2004). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Maxwell, J. A. (2011). *A realist approach to qualitative research*. Thousand Oaks, CA: Sage Publications.
- Miller, D., & Slater, D. (2001). *The internet: An ethnographic approach*. Oxford, England: Berg Publishers.
- Montfort, N., & Bogost, I. (2009). *Racing the beam: The Atari video computer system*. Cambridge, MA: The MIT Press.

- Mytton, D. (2005). *Invision Power Board 2: A user guide: Configure, manage and maintain a copy of Invision Power Board 2 on your own website to power an online discussion forum*. Birmingham, England: Packt Publishing.
- O’Keefe, P. (2008). *Managing online forums: Everything you need to know to create and run successful community discussion boards*. New York, NY: AMACOM.
- O’Sullivan, M. (2009). Video Interview with Founder of Vanilla, "A WordPress for Forums." Retrieved from: <http://vimeo.com/5405609>
- Owens, T. (2010). Modding the History of Science: Values at play in modder discussions of Sid Meier’s Civilization. *Simulation & Gaming*, 42(4). doi:10.1177/1046878110366277
- Powazek, D. M.(2002). *Design for community: The art of connecting real people in virtual places*. Indianapolis, IN: New Riders Press.
- Pinch, T. J., & Bijker, W. E. (1984). The social construction of facts and artefacts: or How the sociology of science and the sociology of technology might benefit each other. *Social Studies of Science*, 14(3), 399-441.
- Powers, M. J. (1997). *How to program a virtual community*. Emeryville, CA: Ziff-Davis Press.
- Robertson, M. (2010, October 6). Can’t play, won’t play | Hide & Seek - Inventing new kinds of play. Retrieved June 3, 2012, from <http://www.hideandseek.net/2010/10/06/cant-play-wont-play/>
- Segaran, T. (2007). *Programming collective intelligence: Building smart web 2.0 applications*. Newton, MA: O’Reilly Media.
- Shelton, K. (1997). *Virtual communities companion*. Albany, NY: Coriolis Group Books.
- Song, F. W. (2009). *Virtual Communities: Bowling alone, online together*. New York, NY: Peter Lang Publishing.
- Squire, K., & Giovanetto, L. (2008). The higher education of gaming. *E-Learning*, 5(1), 2-28.
- Stefanov, S., Rogers, J., & Lothar, M. (2005). *Building online communities with phpBB 2*. New York, NY: Packt Publishing.
- Steinkuehler, C., & Duncan, S. (2008). Scientific habits of mind in virtual worlds. *Journal of Science Education and Technology*, 17, 530–543. doi:10.1007/s10956-008-9120-8

- Steinkuehler, C., & Chmiel, M. (2006). Fostering scientific habits of mind in the context of online play. In S. Barab, K. Hay, D. Hickey (Eds.), *Proceedings of the 7th international conference on learning sciences*. Poster presented at the International Society of the Learning Sciences, Bloomington, IN, 27 June- 1 July (pp. 723–729). Chicago, IL: International Society of the Learning Sciences.
- Trouillot, Michel-Rolph. (1995) *Silencing the past: Power and the production of history*. Boston, MA: Beacon Press.
- Wolfe, D. (1994). *The BBS construction kit: all the software and expert advice you need to start your own BBS today!* New York, NY: John Wiley & Sons.
- Wood, L., & Blankenhorn, D. (1992). *Bulletin board systems for business*. New York, NY: John Wiley & Sons.
- Woolgar, S. (1991). *Configuring the user: The case of usability trials*. Cambridge, England: Routledge.

BIOGRAPHY

Trevor J. Owens graduated from West Allis Central High School, West Allis/West Milwaukee, in 2003. He received his Bachelor of Arts from the University of Wisconsin-Madison in History and the History of Science in 2006. He worked as the Community Lead for the Zotero project at the Center for History and New Media at George Mason University for four years and completed his Master of Arts in History and New Media at George Mason University in 2009. Since 2010 he has worked as a digital archivist in the Library of Congress Office of Strategic Initiatives.