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

by

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ABSTRACT

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

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Discussion on the web is mediated through layers of software and protocols. As scholars increasingly turn to study communication, learning and knowledge production on the web, it is essential to look below the surface of interaction and 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 and structure online communities toward particular objectives. Through analysis of this "how-to" literature, this dissertation intends to offer a point of entry into the discourse of design and configuration that plays an integral role in structuring how learning and knowledge are produced online. The project engages with and interprets "how-to" literature to help study software in a way that respects the tension that exists between the structural affordances of software with the dynamic and social nature of software as a component in social interaction.

INTRODUCTION

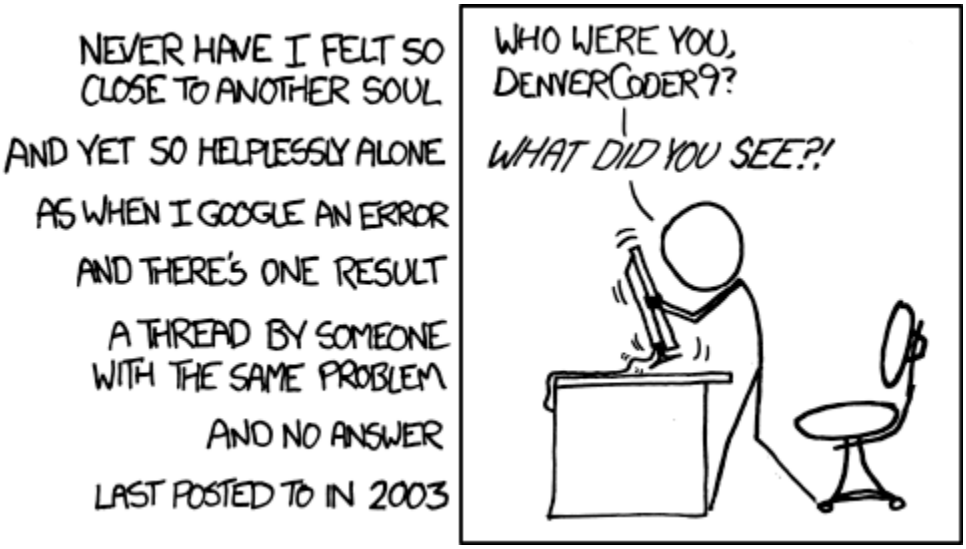

Figure 1 Wisdom of the Ancients, XKCD Webcomic, 2011

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. 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 which 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 helping study 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 behind and the practices and tactics software developers and individuals who implement and configure the software which supports online communities affect the nature of the discourse which occurs in those communities.

Online community sites, first and foremost web forums, are being 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. Through extensive ethnographic fieldwork, Ito and others 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" (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, 2008), studies of videogame fan-forums (Squire & Giovanetto, 2008; Duncan, 2010; Owens, 2010) suggest that young people are developing their abilities to interact with, critique and design video games. More broadly, virtual community sites and spaces mean for civic engagement and democratic practice (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 more areas of social science research turn to study these kinds of online communities, and the come to serve increasingly important roles in how people learn and develop knowledge, it is critical that we understand the ideas and theories of community and human motivation that are informing how they are built and managed. This is all the more important as ethnographic methods are turned 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 are result from the interplay of design and layers of software.

Interest in the study of online communities is large enough that there is now more than a decade of research methods work focusing on "virtual ethnography" (Hine, 2001) or "netnography" (Kozinets 2010). 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 a community. With this said, most of the work in this field 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. The goal 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 Lévy proposed a vision for the kinds of changes the internet was bringing to culture. Lévy'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 Lévy, and many other boosters of the web, is the idea that the web empowered individuals. It enhanced their autonomy both through giving access to knowledge and enabling them to create knowledge. In his 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" (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" (p. 39). Much of the work exploring informal learning in online environments is grounded in Lévy's vision. However, the web is not a free-for-all. It is a place that is designed and structured by particular individuals and through their software.

At the most fundamental level, the designs of the networks we use operate on a set of protocols. As Galloway suggests, TCP/IP (Telecommunications Control Protocol/ Internet Protocol) and the DNS (Domain Names System), the fundamental protocols that enable the web establish structures of control; "One protocol radically distributes control into autonomous agents, the other rigidly organizes control into a tree-like decentralized database" (2004, p. 53). 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" (p. 21). As Chun documents, every HTTP request is signed with a user's IP address visible to users, making their actions visible in HTTP logs even when users think they are invisible. We 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 & Statler suggest, researchers need to "disaggregate' the Internet; 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 (p.14, 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 an 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 informing 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?

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* (1994), *Hosting Web Communities: Building Relationships, Increasing Customer Loyalty, and Maintaining a Competitive Edge* (1998) and *Building Web Reputation Systems: Ratings, Reviews & Karma to Keep Your Community Healthy* (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* (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 the web forums and online community sites are set up. For example, here is how Derek Powazek 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, xxii)

While studies of discourse often turn to explanations based on power and control, power and control is often 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. Preliminary exploration of guidebooks for running and managing online communities suggest that this is a central theme in many of these texts, 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 all 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 particular 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 as offer a point of entry for understanding the theories of users, of design, and the values which 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.

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 project comes from an early attempt to make some changes to the project's 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 people and encourage them to become more involved in the project.

At one point I thought it would be great for us to think about adding a plugin (an extra 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 nice if users of the Zotero forums could see people's post counts (the amount of times

they posted) and if we could set different ranks of 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 a user had. I had seen this kind of functionality in a video game forum I frequented that used a different web forum software package called phpBB. I looked for a plugin that would do this and found nothing.

So I searched their forums (to clarify, the Vanilla forums project has its own forums for discussing the software project) and found some heated exchanges about the idea that someone might add this kind of functionality to the software. 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 requests a user explained that “Like all revolution, Vanilla's biggest problem is simply that it's different. It's also the strongest feature.” I thought this was just a simple piece of rather cut-and-dried software that enabled us to have 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 Movementâ".

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 where 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 can't do what users can and can't see, and how others in an online community site see users and their online actions. In short, the object of analysis 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.

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" (p.19, 2003). 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 administrating 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 drew attention to the users of any given technology through an approach they called the social construction of technology (1984). 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 (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" (p. 208, 1992). 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 users and designers.

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 guide books 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 material a actant in the network of action any given piece of software enables, disables, or suggests particular actions for its users. So, 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 can't 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. So, the designers of the phpBB software are limited and constrained by the features of the PHP scripting language, 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 actors 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 way's 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, the idea of reputation points in my experience with the Zotero forums illustrates how quickly a seemingly 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 on line 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 my preliminary exploration of 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. That is, 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 will work to suggest how researchers can use an awareness of how online community is itself configured make better judgments about what one can say as the result of 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 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 tools is acting as a cognitive whole (1995a). 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 theses 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 chose 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." (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 which 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 who 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 distributed notions of cognition and intelligence fit quite 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, 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 e 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 interest in 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. Lévy'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. Drawing 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 which 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, but also suggest that beyond simply documenting discourse the discussions themselves become resources which other players draw from to make decisions.

We can see another component of Lévy'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 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" (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 itself becoming an important skill.

Online communities don't simply result in the production of game objects either. Gee and Hayes 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, 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" (p.150, 2010). 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. More broadly

there is broad interest in studying informal online learning communities as a means to invigorate classroom practice (e.g., Greenhow , 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.

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. I envision the answers to these questions offering 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.

At this point I have identified three primary research questions.

1. What tactics do these authors present as ways to shape online discourse? Specifically;
    a. What visual and information architecture 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?
2. What values, and psychological theories of users and social theories of community, are evident in the explanation of these tactics?

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?

Tactics: Question one is intended to focus in on the particular features and designs that the authors of the books are advocating for. While I intend to broadly explore the authors' perspectives, my preliminary exploration of a few of these books (see preliminary investigation section in the appendix) I have also decided to focus particular attention on the visual and structural designs, approaches to moderating the discussions, and reputation systems. In my preliminary study of three books, each of these issues served as particularly rich sets of information for unpacking the ideological perspectives of the authors. Looking systematically at these features in each of the books will help to focus my study. By focusing in on these issues I hope to gain insight into how seemingly dry technical configuration details act as sites in which the more interesting and extensive social questions of question two are enacted.

Values and Ideology: Question two focuses on the ideological nature of developer and community manager's tactics. By examining how theories of human behavior and social organization and community are read into or used to argue for particular designs I intend to 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. Preliminary investigation suggests that the 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.

Looking for Difference: Question three focuses on exploring the differences in ideology and perspective and enactions in software that exist between the books. Already, with my preliminary readings of these texts, I can see a series of potential discords and tensions between them. I am interested to see how the ideas about these software systems have changed in 22 years over which I have found guide books 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.

METHODS AND ANALYTIC PROCESS

This project treats these texts as participation in a discourse. 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 I have selected for analysis and the process I used to select a diverse set of 28 books from 1988-2010. I then explain how I am conceiving of my analytic focus and a tentative plan for my analytic process.

Analyzing these texts as Discourse

I intend to approach analysis of these texts in keeping with Fairclough and Gee's approaches to the study of discourse (Gee, 2005 & Fairclough, 2003). While the study of discourse is often associated with Foucault's work on power and institutions, Gee and Fairclough 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 texts for "world building:" That is, 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, p. xi, 2005). How people do things with words online and how those online community systems interact in those actions. 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, in preliminary explorations 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 sociologist John 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 these actors' attempts 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 published works from these texts and the accounts within them are themselves sources where developers and administrators can read-up on how to run online communities. These texts are sites where the cultural models or scripts for these technologies is being defined and distributed. 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 a resource that

developers and administrators can 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, one that is, at least to an extent, receptive to the ideas and approaches in them. With this said, it is not necessarily that these texts shape or define larger cultural scripts. As the reflections and ideas of working practitioners the content of these guide books is similarly shaped by the working ideas with in the community of software designers and administrators. To this end, this study is not about identifying where these ideas come from, but instead about using these books as points of entry into discussion of how particular functionality in this community software is deployed and what values are evident in how it is deployed.

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). Respecting that in many cases, individuals' beliefs and ideas are themself 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. I will suggest that these configuration stories, stories of configuring software systems and stories of configuring discourse itself, suggest a range of valuable lessons for understanding both the nature of online discourse and strategies and points of focus for how researchers can use an awareness of how online community is itself configured to help enable them to make better judgments about what it is that one can say as the result of the recorded record of conversation which persists in online communities.

Book Selection

At this point I have identified 28 books, spanning from 1988-2010, that I intend to study in this project. The intended audience for these books is individuals who either want to set up, run, design or build their own online communities. 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 a significant diversity. The books are written by a diverse set of authors including web designers, web developers, community managers, some 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. While I may consider discussions of other kinds of functionality, 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 Powerboard, 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 I am primarily interested in studying asynchronous discourse on the World Wide Web I have also decided to include a series of how-to books about running and

managing BBSes. Web forum and web bulletin board systems drew on the functionality and setup of earlier Bulletin Board Systems suggests the need to also explore earlier discussions. 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. At this point I am not sure if I will isolate these books and discuss them as a distinct period or if I will try to work them into a stronger set of continuity around the functions and features I am focusing on. That will become apparent in my analysis and in depth work with the texts.

Chronological Table of Books by Date, Number of Amazon Reviews, Number of Copies in WorldCat[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; Sysop; Business
Using Computer Bulletin Boards	Management Info	1990	0	168	Business; Sysop; 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	Sysop; 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
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

[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 accessible and successful a book is.

Analytic Focus

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

- **Site and page design:** This would include explanations of how to use visual design and site structure to achieve particular objectives. Using design to prompt users to act in specific ways. I have already found a range of examples discussing visual design. 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. For an example of what I find valuable in this kind of information see my initial analysis of Powazak's *Designing Online Community* in the appendix.
- **Banning users and moderating user content:** This would include 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. In preliminary analysis 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. For examples of details in the kind of analysis I imagine doing on this topic see discussion of Patrick O'Keefe's *Managing Online Forums Book: Everything You Need to Know to Create and Run Successful Community Discussion Boards* in the appendix.

- **Reputation systems:** 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. In these instances 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 kinds 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. For more detail on how this analysis might look see my preliminary analysis of Buss and Strauss' *Online Communities Handbook: Building your business and brand on the Web* in the appendix.

- **The socio-cognitive theories of users these books draw on to explain users and community:** 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. I imagine much of this will bubble up out of my focus on the first three components, but by specifically targeting this I hope to capture how these books are mobilizing existing psychological and sociological theory. 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. My preliminary analysis of Buss and Straus's *Online Communities Handbook: Building your business and brand on the Web* in the appendix gets into some of these issues.

Tentative Analytic Process

Identifying sections for analysis through initial reading (Step 1): I plan to do an initial reading of each of the books in which I identify and take brief notes about the

sections of each book that deal with each of these 4 issues. I will also take notes on any other any issues that emerge as relevant to my research questions , but the primary focus will be to pull together a targeted set of information from each of the books on each of these topics. Throughout the course of pulling together this information I will memo about my reflections on each of the books individually so that I can retain my initial impressions about the overall thrust of each book aside from how I eventually fit them together into a broader narrative.

Focused analysis of sections of the texts (Step 2): Once I have this comprehensive overview of where each book discusses which issues I plan to plan to read my notes, and the books against each other to identify the similarities and differences between the authors perspectives. Here I intend to work across the works to identify themes of similarity and difference on each of the four points. From here I imagine finding things prevalent across all of the books and some things on which a range of different perspectives emerge.

Identifying prevalence and contrasts in themes across the texts (Step 3): Once I've developed these broader sets of themes on each of the four areas I am studying the texts for I plan to work out the extent to which these ideas are prevalent in each of the books, which of the ideas I see as being in conflict and work to reconcile the differences between the books through development of a theory about what perspectives and values of the authors lump them together into different camps on different issues. I will draft a brief comprehensive account and theory dealing with the books in each category.

Seeking out discrepant evidence and negative cases (Step 4): At this point, I plan to take my working theories back to the individual books to explicitly look for evidence

that counters my interpretations. I will be explicitly looking for examples that counter my account of the books. Explicitly seeking out counter examples and discrepant evidence I intend to make the claims I argue both more nuanced and more valid (Maxwell, 2004, p. 112). That is, if I have things I think to be true for all of the books I will seek out examples that counter that claim. Similarly, if I come to believe there are different theories operating behind some categories of books (for example that the more commercially focused books have espouse more behaviorist ideas of users while the texts that come from a more open source perspective espouse theories of users grounded in the value of social exchange) I will look for counterexamples in each of the categories.

Recontextualizing analysis in context of the original works (Step 5): Once I am ready to write up each of my sections I intend to go back to the initial books and make sure that when I am writing up each section I contextualize each authors perspectives in the aims of their works and work to keep significant chunks of each author's perspective intact when presented in the actual chapters of my dissertation.

Reading the Book Reviews (Step 5): Many of these books have been reviewed considerably on sites like Amazon and Goodreads, as well as a range of trade publications. I will compile a collection of reviews of these works for me to work through in the project as a mode for identifying other readers take away from the books. I intend to review these book reviews after I have put together the entirety of my study as a way to identify additional sets of themes, takeaways and responses to the texts. This information will serve to either reinforce or complicate my theories about the texts.

ANTICIPATION OF VALIDITY THREATS AND INHERENT LIMITATIONS

While validity is a property of inferences from evidence and not a general property of research design, I can anticipate and offer up strategies and approaches I intend follow 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 primary value of the guide books is that they serve as widely broadcast sets of ideas about these communities. As such they do not represent any kind of normal or average implementer's ideas. With that said, it is important to note that the books are generally written by individuals who have been particularly successful at managing 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, however, 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. Instead, they must be understood as a genre of 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 as less accurate report of historical events and more mobilized experience reified and distilled into a cultural tools that accomplish work. Since the ideas in these works were intended to be *used*, they are more likely to represent the authors' 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 Author's 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 going to be challenging. I have included two explicit tactics in my plan for analysis to help try and address this issue. First, after I have started to develop a sense of thematic points and apply them to the books, I will go back to each book and seek out discrepant evidence. Before categorizing a book as representing one perspective or another I will identify what kinds of statements

and claims in the books would invalidate the claim I want to make and search the sections where one might find that kind of information (Step 4). This approach will help me to qualify claims I intend to apply to texts. Aside from this, when I write up my analysis, I will go back to recontextualize my presentation of an author's work in the context of their given project and goals (Step 5). Most of my reporting will involve substantive retelling of authors ideas, with significant block quotes to present the rich data for a reader to interpret themselves. For examples of how I imagine this working, see my example analysis of sections from three of the books.

Respecting the Diversity of Divergent Perspectives: *How can you be sure you are representing the diversity of 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 it will be necessary for me to make sure that that diversity is represented in my analysis as well. So, to make sure that diversity is present, I fully intend to try to work comprehensively to include discussion of each of the books or at least of representing a diversity of distinct perspectives on each topic. Aside from this, Step 3 in my analytic process is directly focused on identifying the prevalence and contrasts in themes across the texts. During this analytic stage, I plan 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 will 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.

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 will be 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 can help 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 will be directly informed by my perspective and approach, but similarly, I have tried to make that process as transparent as possible.

Beyond these approaches and methods, I plan to end my research process by reading the book reviews, both published formal reviews and reviews of the books from Amazon.com against my own interpretations of the text. In this process, I intend to pull

quotes and perspectives that both support or complicate my own interpretation and incorporate them in my report.

MODEL ANALYSIS AND INITIAL TENATIVE THEORY DEVELOPMENT

What follows is a close reading of selections from three how-to guides: Derek Powazek's *Design for Community: the art of connecting real people in virtual places* released in 2001; Patrick O'Keefe's 2008 book, *Managing Online Forums: Everything You Need to Know to Create and Run Successful Community Discussion Boards;* and Anna Buss and Nancy Strauss's 2009 book, *Online Communities Handbook: Building Your Business and Brand on the Web.* These three books were selected from a larger set of 15 books which serve as the basis for a larger study. These three were selected because they each offer particularly compelling and diverse points of entry into developer and administrator discourse.

In this study, the notion of "web community" is itself defined by the way that books about web communities describe them. For Powazek, this includes any kinds of social interactions over the world wide web, although the book is primarily focused on asynchronous interactions like commenting. For O'Keefe, this is about online forums, primarily those running software applications like phpBB or Vbulletin. For Buss and Strauss online communities are defined as "Web 2.0 sites such as wikis, message boards and blogs"[10]. Together, these definitions focus on asynchronous text based modes of discursive interaction on the web.

The goal here is not to be comprehensive, but rather to engage with sections of each of these books in order to illustrate the value of this approach, isolate some

important factors for consideration in the study of online communication, and to begin to work, from the bottom up, toward an understanding of social interaction and conversation in online communities' relationship to the technical and functional layer of the software. In Powazak's, case I will present his overarching description of what online community software does and engage in depth with a tactic he suggests called burying the post button. In O'Keefe's case, I will present a series of tactics he offers for what he calls "banning users and dealing with chaos" as this material provides substantive ways for thinking about the extent and the limits of technical control. Finally, I will walk through how Buss and Strauss explain online community users as commodities. These commodified users, described from a behaviorist psychological perspective, establish the basis for valuing virtual rewards and reputation systems as tools for creating and sustaining social hierarchies.

The goal of this initial analysis is to provide an initial tour of what an ongoing and critical engagement with this literature can tell us about software that frequently includes the words "social" and "community" in its description.

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, is one of the first major books which focuses on how to add what he refers to as "community features" to websites. Published by New Riders, a publisher of popular technical books on web design, the book includes a range of prescriptive advice. Drawing on Powazak's experience developing the sites fray.com and kvetch.com as well as his experience working as a consultant for Netscape, Lotus, and Sony the book provides a technical audience of designers with tactics and theory for the

use and value of a range of what he describes as "community features". Along with the prescriptive advice for how to implement and design ways for end users to interact with websites, the book includes ten interviews with an impressive array of individuals working on online community software development from the early 2000s. The book represents an interesting moment in history. While much has happened and changed in the last 10 years the book remains a foundational text which presents a particular perspective on the design of web forums, and discussion and commenting components enabled in a range of different sites. The book is widely accessible; it is on the shelves of at least 210 of the world's libraries who participate in WorldCat. While the book offers a range of engaging points to consider, my intention here is to focus in on how Powazek frames the mission of designing for community and then to explore how that mission is and is not evident in the details of how he suggests that designers actually implement that vision in particular designs.

In the following quote, from the book's introduction we find one of the central tensions that exist in the idea of enabling what Powazak describes as "community features:"

> 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. (p. xxii.)

While studies of discourse often turn to explanations based on power and control it is not generally explained and expressed so forcefully by those we study. There is an important tension between the first two sentences of this quote and the last two. In the first sentences, Powazek is focused on empowering users. In these sentences the "tools to

communicate" are all about empowering users, about handing over control. This is part of a central idea in many of these texts, that old media was a controlled experience in which producers produced and consumers consumed. With that said, the last sentences are also all about power, but not at all about empowering users. The end of the quote is all about the soft power of the designer. The act of control in this case comes through deciding what tools one is going to give their theoretical users, how one will allow them to communicate. Importantly, 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. In the final sentence we find out exactly what it means to be a designer of community in this text. In this case, the designer creates "carefully crafted experiences" the experience of being a part of the online community is itself a designed thing. That experience is itself designed for "maximum impact" where the idea of maximization itself implies a vision of enabling specific kinds of communication between particular kinds of users. Throughout all the texts on online community design management and configuration the tension between empowering and giving up control to users and controlling, manipulating or exploiting them is ever-present.

Throughout the book there are a range of places to explore how these ideas fit with Powazak's prescriptions for those interested in building sites and platforms that enable community interactions. Digging into one of these ideas in depth will help to explicate how this view of the relationship between users and designers is embodied and enacted in design. 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. (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 us 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 your 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 Powazack suggesting to obfuscate and make it more difficult for a user to do what they want to do? 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. (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 Powazak 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." In short, Powazak 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 kind 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, however, 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." 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 are likely many sites in which the software is also at odds with what a given community manager wants as well.

Here the specifics of this description become important. One suggestion for researchers is to directly consider the point Powazak 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.

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 ofO'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. Where Powazek's book is more broadly about designing for a range of potential emerging community features O'Keefe's is very directly focused on running, administrating, and managing a particular species of online community site, the web forum. In his case, he primarily discusses the functionality of two of the most widely used web PHP and MySQL-based platforms, vBulitin 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 "adverquetions" 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 attack your site (p.

185-199). He goes on to suggest exactly how to structure and manage forums to deal with these problem users.

Curbing Abuse: Report buttons and Automating Facework

After providing a range of suggestions for how to handle particularly difficult user situations, O'Keefe starts by suggesting 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 in both Powazak and O'Keefe's 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. 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" (p. 204-205). Where the report post button in Powazek's book attempts to police content in the discussion and potentially remove inappropriate posts, the helpful notices suggested by O'Keefe 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. These cues are being consciously deployed by administrators to shape discussion. It's essential that anyone who wants to study communication in these kinds of sites 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.

Under the heading of "innovative tools" he goes on to explain two examples of ways that a developer friend helped him by creating hacks for web forums he manages. 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 (O'Keefe uses the term Hack to refer to extensions or plugins for software like phpBB) 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 facework. 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. (p. 206)

The word censor he describes is functionality that will block out words from an inappropriate word list when displayed on the site. 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. (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, he 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 that “People will use words or come up with new ones that you didn’t or can’t 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” (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 explaining 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.” (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 in a particular

way, the user self-censored based on that feedback, and all that remains it 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.

Difficulties of banning and new levels of manipulation

From here, O'Keefe describes several approaches for banning troublesome users. 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 bring upon themselves. "As an administrator, you are simply reacting to what a member does" (p.207). Most of what he says about banning is what one might expect; he identifies particularly egregious individual situations which 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 methods for banning and reflections on those methods are critical for understanding how control functions in these web forums. Specifically, how admins 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" (p. 212). While administrators exercise considerable control over their communities the tools at hand, blocking usernames and IP addresses, are both relatively blunt instruments. These methods are easily overcome by an antagonistic user. 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. 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 an .htaccess file to display a 403 (forbidden) page to any user from a particular IP range. Here, he 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” (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.

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" (p. 214).

The globally ignored user has been muted, a rather deceptive practice. It is hard to conjure up a comparative situation in face-to-face 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 kind of space in the threaded discussion it would likely take more time for them to realize what is going on in communication.

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 who are 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.

Behaviorism Reputation and Social Hierarchy by Design

Anna Buss and Nancy Strauss's 2009 book, *Online Communities Handbook: Building Your Business and Brand on the Web* differs distinctly from the two books discussed thus far in its explicit commercial focus. Strauss and Buss both work as consultants with companies interested in web communities. While O'Keefe and Powazak discuss earning money, it is not the central frame through which they think about and describe online community. Published by New Riders Press, the *Online Communities Handbook* is similarly targeted at a technical audience but with much more of an explicit focus on how online communities can be used for marketing products. While discussing the same topics as the other books, here users are customers who are recruited, motivated, and, if they slow down their participation, reactivated.

The book offers many points of entry for understanding the values in the discourse of configuration in these how-to books; however, the chapter on motivation is particularly 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 (p. 80). Similarly, when they suggest, in a heading for a section on how to engage

members, to “Grab them when they’re fresh,” members become some kind of 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 a marketing term that has become a common place term in eCommerce, the idea of stickiness. Buss and Strauss describe stickiness as “website content that causes the user to spend more time on the site” (p. 81) Stickiness is grounded in their pop-behaviorist psychology principles 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.

> 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. (p. 83)

Buss and Strauss are mobilizing 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. They go on to explain how loyalty programs where "users earn points for each website action" and frequently remind them that a score of 200 points would let them access the site's video library can serve these self-gratifying desires. In the logic of their theory, these "virtual rewards" trigger the 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." At each step, the theory of self becomes more unabashedly behaviorist. 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. While Powazak and O'Keefe were clearly interested in manipulating users through various methods, they did not commodify users in the same way. Manipulation for Powazak and O'Keefe reads as primarily a paternalistic endeavor, trying to manipulate community members in the best interests of generating discussions that are valuable and meaningful to the community as a whole. For Buss and Strauss though, manipulation is a clear case of the exploitation of users as a means to a commercial end.

The features Buss and Strauss discuss have more recently been rebranded as "gameification" under the guise that they represent lessons from video game design

applied to designing online communities. Clearly, the ideas of points, and badges and virtual rewards predate this conversation about gameification, suggesting that the new term is simply another guise under which the same behaviorist and consumptive notions of the self and society can be rebranded. With that said, Margaret Robertson's critique of gamification as "pointsification" (2010) and Ian Bogost's critique of it as "exploitation-ware" (2011) are equally well pointed critiques of this brand 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 they are suggesting and what it 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. (p. 86)

For the most part, talk of tools in this study so far has focused on software and plugins and hacks for software. 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 they assert the fact that online communities "quickly sort themselves into hierarchical structures" they naturalize the idea of hierarchy. Similarly, their assertion that this is "just like offline communities" further attempts to naturalize,

and suggest the inevitability of such a situation. Halfway through the quote, they shift from asserting the natural-ness of social hierarchy to using that assertion to suggest online community administrators and managers should encourage this hierarchy to their ends. From there, they clearly evoke the same kind of stimulus reward ideas already espoused. 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," that is 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.

> 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 members 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!" (p. 87)

They 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 which you consume and manipulate based on their desires for gratification. The very structure of social interaction enacted and prompted by the software's reputation system and usage of virtual rewards is explained as the result of projecting this behaviorist psychological model onto a view of the innate desire for "social ladder" climbing. The functionality of the software is explained to us as a manifestation of these asserted social and psychological facts.

Technical Literature, Configuring Discourse and Software

Powazak, O'Keefe, and Buss and Strauss's books each result from and articulate perspectives in the discourse of the design and implementation of the server side software which enables online community. The tactics each of these authors suggest explicate the goals and values of their work. These texts demonstrate the role software plays in online discourse and design elements that those interested in studying the textual record of online discourse should attend to in their studies.

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 given 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 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.

The nuances of experiences like O'Keefe's reported in these how-to books provides a potent vector for further triangulating the relationship between power and control on the web. The tension between control and empowerment found in O'Keefe's description 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*. In both cases, consideration of technical issues as documented in other texts, in Galloway's case in the specifications for the protocols that make the web work. and in this study in the description of how to set up online community sites. Both offer substantive sources to explore how the constraints of the technical infrastructure of the web interact with human action to enable and disable particular instances of control and empowerment.

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 generalized other 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.

Taking this idea seriously presents a potentially intriguing way to think about the discursive and social in software studies . The social and cultural is not to be understood as some outside force, but in keeping with Gee's approach to Discourse, any kind of social force is much more accurately thought of in terms of internalized theories about others. In this case, these are particularly interesting as each of these authors' 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. Beyond being inscribed on pages these ideas are encoded as the scripts by which the server side software we interact with as users operates. The ideas of users depicted in these texts become actants in our social interaction.

Software as Actant, Actor, and Mediator in Facework

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 facework that occurs in online communities. In the case of the excerpt from Powazak, 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 us 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 and empowering me to engage in specific behaviors. 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.

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