PRODUCTIVE WIKIS: HOW REVIEWER AND USER BIAS SHAPE PERCEPTIONS

OF TEXT

THESIS

Presented to the Graduate Council of
Texas State University-San Marcos
in Partial Fulfillment of the Requirements

for the Degree

Master of ARTS

by

Michael R. Trice, B.A.

San Marcos, Texas
December 2008

PRODUCTIVE WIKIS: HOW REVIEWER AND USER BIAS SHAPE PERCEPTIONS

OF TEXT

Committee Members Approved:

_____

Deborah Morton, Chair

_____

Cindy Royal

_____

Miriam Williams

Approved:

_____

J. Michael Willoughby
Dean of the Graduate College

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Figures   **Page**

ABSRTACT

PRODUCTIVE WIKIS: HOW REVIEWER AND USER BIAS SHAPE PERCEPTIONS

OF TEXT

by

Michael R. Trice, B.A.

Texas State University-San Marcos

December 2008

SUPERVISING PROFESSOR: DEBORAH MORTON

This thesis looked at how bias manifested among writers, readers, and editors of ten texts within a collaborative environment. Specifically, the study examined the observations of the thirty participants within an online environment to evaluate shifts in viewpoint in how they regarded the texts when comparing versions created by a single writer and versions that had been edited by multiple participants.

A "wiki" environment was used for the study. This "wiki" environment, akin to more a strictly regulated version of the Wikipedia project, allowed the study to tightly classify participants into exclusive roles of writer, editor, or reviewer. These roles were then used to analyze how participants interacted with the text based upon their designation as a writer, editor, or reviewer of the text.

By comparing these results and the narratives of the case study, the thesis examines the merits of statistical and humanistic evaluation in technical communication with an eye toward the need for terministic clarity in emergent technologies. In this study, the wiki provides the core cipher for that discussion by evaluating the use of this case study's wiki environment in comparison to other existing wikis to determine how this difference in codification affected the study's results.

CHAPTER I

THE NARRATIVE BEHIND THE CASE STUDY

This thesis began as a case study determined to analyze how collaborators allow

bias to construct their opinions based on the role played by the collaborator. Early on the

idea emerged to use an electronic environment to distill collaboration into the three

principle elements that any textual product passes through: writing (defined as the initial

origination of the text), editing of the originated text, and review of both the original text

as the edited text by readers. While individuals might have responsibilities that cross

these roles in some collaborative environments, this thesis sought to examine the core

concept of writer, editor, and reader as absolute rather than as a shared role. Since many

textual narratives function in this absolute world (such as novels, newspaper articles,

journal articles, many of the papers turned in by students at various scholastic levels), this

study presented an important opportunity to evaluate how bias influences views of a text

based on if a participant was exclusively the writer, editor, or reader of the text.

While this study focused heavily upon this analysis of bias, another branch of

observation grew from the nature of the environment chosen. To allow a large number of

writers and editors easy access to multiple texts, I opted to use a digital environment

known as a wiki. Much like a limited version of the Web-based encyclopedia, *Wikipedia,*

this site allowed writers to post their original stories while also allowing editors seamless access to edit all the submitted works. However, the relative dearth of applied wiki research quickly turned many elements of this thesis into a detailed methodology of how to construct a research-focused wiki environment. Thus, along with the analysis of bias originally planned within the case study, I have detailed the benefits, limitations, successes, and shortcomings of this environment as a vehicle for organizational and collaborative research.

A Word on Textual Narratives

My interest in textual bias arises from personal experiences as reader, editor, and writer. Participation in a variety of collaborative environments from classrooms to corporate proposal departments to professional and ad hoc writing workshops have constantly challenged me to examine how perception of a text varies from one set of eyes to another. Yet, one obsession of mine in these situations above all others drove this study: Do too many cooks actually spoil the stew or add to the flavor?

My earliest experiences in written narratives came from two series of textual encounters: my father reading J. R. R. Tolkien's *The Hobbit* to my sister and me and Sunday School sessions with The King James Bible. In many ways the juxtaposition between perceptions of authorship concerning these two works illustrates the history of what I will discuss in this thesis. Society seems to principally have accepted Tolkien's work as the *praxis* of one author, whereas the Bible (and especially the King James version with its origination as an advisory court translated text) presents an oft cited example of a collaborative text—and by collaborative, I refer to a single text produced

via multiple *mentes et manus* across the entire body of the work, not simply a collection of stories where each story has one originator; in the Bible's case due to the additions of varied monks and scribes over the centuries, as well as many translators. However, as the fields of writing, communication, and digital studies now understand—appearances of authorship, collaborative or singular, rarely illustrate the whole story in any sort of transparent manner. By this, I mean that many, if not all, works perceived as of single authorship possess editors and counsels beyond that recorded in either the popular or critical appreciation of the work. So it is worth examining why this narrative of single authorship persists out of a bias for one type of writing over another.

This possibility of bias arising from the appearance of sole versus collaborative authorship heavily influenced my thesis, where I opted to evaluate how writers, editors, and reviewers evaluated narratives based on whether the participants considered the narrative a work of one author (a writer) or a collaboration between multiple individuals (a writer and multiple editors).

To look more closely at how individuals evaluated a text, I recruited 30 individuals to serve as participants in a wiki site similar to that of *Wikipedia,* a Web-based encyclopedia where anyone may register to add or change the listed content. The exact details of the site I used for the case study are described in Chapter Two, but the important aspect of what this allowed me to do was isolate the participants into three tightly regulated groups: writers, editors, and reviewers. By doing so, I could make a detailed examination of how each of the three groups reflected upon shared texts, and how those evaluations differed between sole author (writer only) and collaborative (writer and editors) works.

I never intended for this study to suggest whether sole authorship or collaborative authorship is superior, but to examine how systems of writing shape perceptions. By examining the perceptions of these 30 participants I hoped this case study would help to determine how an actor's role in interacting with a text (reader, writer, editor) influences the perception of that text, particularly in the textual arena where such roles often have an originator-audience dynamic.

The Case Study: A Brief Overview

In order to address the issues stated above, this thesis examined how participants utilized the wiki environment as well as how participants rated work produced in this environment dependent upon the three rigorously defined roles. In a traditional wiki a person might play numerous roles, but this case study limited participants to a single role for the purpose of codifying role interaction over individual interaction. The primary inquiry examined:

- How involvement or lack of involvement within the collaborative process shaped the participants' evaluation of the final output as determined by the participants' defined role within the wiki process (writer, editor, reviewer).
- How the wiki system itself shaped the narratives of the participants as they reacted to the wiki environment.

This work differed from many previous wiki examinations as it focused both upon how actual contributors viewed the wiki's content as well as a blind review of that content by a class of non-contributing readers. Also, I made no assumptions that openness and social interaction were the key objects of study in wiki technology. Rather,

I used a closed environment only accessible to selected participants. Additionally, the case study allowed no interaction between contributors outside of making changes to the texts and reviewing the texts. This meant that the most important elements for this case study were the actual texts produced and the participants' evaluations of those texts.

While the wiki environment had options to allow participants to communicate with one another, I removed these options from this wiki environment by disabling the ability of users to send messages to one another and obscuring the email accounts of users from being viewed by anyone other than myself. So, while I acknowledge that interaction within a wiki is vital to how many public wikis have functioned as systems of community, the purpose of this case study explicitly avoided commenting upon interaction among participants in order to more fully focus upon perceptions about content and internal evaluation of that content. The reason for this is simply that current humanities-based wiki studies have thus far focused on social interaction and external content evaluation to the exclusion of analyzing the nature of critical evaluations that have occurred within wikis, as will be furthered explained within the literature review.

The focus upon content production and content evaluation allowed the case study to solely examine how participants changed text within the wiki and how each of the three groups regarded these changes. My analysis then focused on comparing the results of the participants' surveys to determine how different groups responded to collaborative versus sole authorship text. In the next chapter I have discussed the scholarship that led me to making these choices.

CHAPTER II

A REVIEW OF TEXTUAL BIAS AND WIKIS

While the key question explored within this case study involved writer/editor/reviewer bias, several preliminary issues needed to be fully examined prior to delving into the actual case study. These issues settled into three principle parts:

- Which empirical and literary methods best served the case study?

- How have historical elements of bias shaped our understanding of textual communication systems?

- Given both of the above, how does the system of this case study reflect upon textual bias?

Techne within both technical communication and literary narrative can share similar roots as Russell Rutter wrote concerning his hypothetical stance on how modern technical communication might be viewed by Roger Ascham. In *History, Rhetoric, and Humanism* Rutter wrote of Ascham, "he would be disturbed, though, by definitions of technical communication that deny its imaginative definitions" (Rutter, 1991, p.153). I find this concept key in the sense that technical communication has relied heavily upon the process of *inventio* in a very Lockeian sense by exploring the empirical output of the writing process to evaluate, illuminate, and define its humanistic values so as to inspire

"new media," "technical communication," and even "writing" have been irrevocably convoluted by people of letters to the point that only the precise coding of distinct systems can allow for a reasoned dialogue. I mention this to demonstrate that while highly empathetic toward Rutter's (1991) embrace of literary and rhetorical mechanisms within technical communication, I also find that the complete renouncement of empiricism within the addressing and awareness of systems condemns us to "the multiplication and obstinacy of disputes" Locke (2007 version) warned against within the key systems of his time, written and verbal language. This attitude toward systems of communication should be given close attention when examining the design of digital environments along with the means and modes of their communicative application. The HTML backbone of the Internet as designed by Berners-Lee has provided a lesson in linguistic simplicity with a communicative system that allowed a Lockeian common language to be embraced and encouraged invention because the system itself was so easily mastered.

Rutter, for his part, backed a multi-millennial old sentiment of Cicero when he wrote, "we need to reassert that wise people who can speak and write well are still the best assets we've got" (Rutter, 1991, p.136). This statement asserted a power of specialization that new systems, such as HTML and wikis, challenge in their focus on mass collaboration via simplified, common language. While the ability to program HTML and wiki code has remained a minority or specialized ability to date, the struggle for simplicity suggests that this need not remain the case and certainly is more in keeping with Locke's desire of common language than Cicero's defense of the wise man pursuit of rhetorical prowess. I have drawn attention to this to suggest that Rutter's goal are

indeed admirable, but those goals require simple, common empirical tools as a foundation for the *techne* of any communicative environment to be able to move toward creative invention and application. When I decided to utilize a wiki environment for this case study, I did so based on a desire to provide as simple an environment as possible to those participating within the case study. While I understood the application of environment would be new, I also understood that the backbone of the environment should be reliably simple to ensure participants focused on the texts of the case study over the inventive use of the environment in which they found themselves.

While wikis have not been heavily studied as methods of textual analysis the need to study classical textual application in general digital environments has been discussed for the last twenty years. In his introduction to *The New Media Reader,* Lev Manovich tied digital systems and literature together, going so far as to state the Web as a hypertextual whole touts complexity, unpredictability, and dynamic nature beyond Joyce or any other single author (Manovich, 2003, p. 7). I do not believe this represented a pound-for-pound argument, but a statement that the system of the Web in its totality exceeds the totality of any single creator by allowing for greater dynamism even among less individually talented narrators. If a system allows for such artistic achievement, then the system deserves our close attention in both theoretical and empirical study.

Manovich goes one step further in discussing how software systems have exponentially changed the individual and group ability of artistic expressions:

…computer scientists who invented these technologies – J.C. Licklider, Douglas Engelbart, Ivan Sutherland, Ted Nelson, Seymor Papert, Tim Berners-Lee, and others –

are the important artists of our time – maybe the only artists who are truly important and who will be remembered from this historical period. (Manovich, 2003, p. 7)

Here, Manovich championed the humanistic and inventive value of those who create the communicative systems. While Manovich avoids reference to rhetorical theory, his basic proposition is that the applied *techne* of these scientists have translated the complexities of the artistic process to a simplified, common usage that opens the floodgates for anyone to create quality media, whether films in Final Cut Pro or hypertext via the Web (Manovich, 2003, p. 7). The widespread use of these systems thus creates a shared language of usage and artistic creation not unlike that proposed by Locke. If such systems work for film and hypertext, then similar systems may well work for text, even beyond the connectivity of hypertext itself. It begs the question of whether software can create a better way to write. Such questions helped shape why I utilized a digital environment in studying textual writing, because the wiki system allowed me to isolate the experience of being a reader, editor, and writer in a fashion that would be difficult to record outside of the digital environment by strictly limiting what type of actions each participant group could engage in. The end result was that the case study environment created easy to define terms for what participants could and could not do, and that the environment existed in a methodology easily transparent to reproduction. I have described these elements in detail in Chapter Three.

A Brief History of Bias

While the focus of this study was upon textual spaces, Rutter's comments have encouraged my discussion to start slightly earlier with a look at Cicero's *De Oratore.*

Particularly, given Rutter's embrace of wise people capable of reading and writing well, Cicero's view of oration relates directly to our textual tradition. Cicero wrote, "knowledge of very many matters must be grasped, without which oratory is but an empty and ridiculous swirl of verbiage…because it is in calming or kindling the feelings of the audience that the full power and science of oratory are brought into play*"* (Cicero, Book I, Sec V). Cicero's pragmatism as a politician frequently reflected in the directness of his commentary regarding communication. This was certainly true in the above where his commitment to an empowered speaker can be directly connected to the textual tradition of an educated, *well read,* singular author capable of inducing reaction within an audience. In fact, Cicero's view of speaker-audience relation expresses the Western tradition of textual interaction up until the 20th Century.

Cicero's predecessors in the Sophists, Plato, Aristotle, and others also championed this favoritism toward an empowered author. However, even with the strong Classical foundation of authorial empowerment, audience empowerment was not strictly a development of modern textual analysis. Many ideas of reader reaction and close textual analysis can be found as early as Aurelius Augustine in the 4th and 5th Century C.E.

In Book IV of *On Christian Doctrine* Augustine addressed his critics by stating, *"*There are two things upon which every treatment of the Scriptures depends: the means of discovering what the thought may be, and the means of expressing what the thought is" (Augustine, paragraph 1).

Augustine then went into a treatise that included such close reading skills as analyzing the use of punctuation choice and what amounts to the symbology of word choice (Augustine, Book IV, paragraph 13). Augustine also made another vital jump in reader empowerment when he discussed how one could become a greater orator by listening to great orators (Augustine, Book IV, paragraph 5). This was not a statement of a teacher imparting knowledge upon a student so much as testament to how a student went about obtaining knowledge. This was a significantly different view from the Classical understanding of teaching in that it empowered the student to learn from a source outside the chosen mentor. In historical retrospect, these concepts began to ask the question of whether the originator could be improved by external forces.

All this said, Augustine's stance originated in a belief of absolute—in fact divine—authorial power in the texts he discussed. His stance was to push for readers to come to the innate conclusion of the text. Intentionalism has remained an element within modern textual analysis, though it is hardly a unanimous belief; yet, Augustine's work did show an arising appreciation of the role of the audience (or student) as separate from the power of an author. If even a divine author requires an active, informed audience to understand a message then the author/orator alone cannot control the flow of information within the system because meaning must be reciprocated to have utility. The audience must understand the nuances of the system as well, especially as it grows more complex with the advent of punctuation and the emotional distance of text. Thus, the classical period moved from absolute favoritism for the teacher/speaker/author to recognition of audience literacy that moved some responsibility from the originator to the reviewing public.

At this point, I should jump ahead of Augustine by several hundred years to once again address Locke. Locke's fascination with language deserves some context given the dynamic evolution of the English language from 1066 through Locke's publication of *An Essay Concerning Human Understanding* in the late 17th century. As important as Locke' empirical tendencies were to how we address language as a system, they were framed in a time when, according to Baugh and Cable's *A History of the English Language,* England was searching for a sense of linguistic stability (Baugh & Cable, 2002, p. 255). While Baugh and Cable hesitated to credit Locke with creating a common style through his push to make the simplified language of science (at that time) the language of all prose, they did credit Locke with making plain language an acceptable style that the elite would sanction (Baugh & Cable, 2002, p. 255). Locke's emphasis on understanding as a key component of the system of language arose from a decidedly scientific and empirical realm. That is to say that proper rigor required agreed upon codifications that weighed the aggressive author's desire for invention against the audience's need to understand and examine the author's content in precise detail. While privilege remained with the author/creator as the inventor of an idea, a movement toward equality emerged. Specifically, the idea emerged of a right and obligation to duplicate content for the purpose of expounding, expanding, and building upon the original work of the author/originator, much like the desire to duplicate scientific testing. It is of little surprise that an empirical style that favored duplication and testing of ideas would also lead to concepts of free expression of ideas, seeding a counterbalance to state sanctioned copyright policies that would survive until the advent of the Internet's collaborative systems.

In the 20th Century, literary theory tackled the relationship of author and reviewer directly as one of power. Bahktin's dialogic theories and Foucault's addressing of institutionalized power mechanics can be directly translated into references of authorial and rhetorical performance and power. One excellent example in the field of technical communication came about in an article written by Jennifer Daryl Slack, David James Miller, and Jeffrey Doak in "The Technical Communicator as Author."

In the article, the writers discussed various views of authorship within technical communication, opening with Foucault's "What is an Author" to which they assign that the power of any discourse lies in whether that discourse has been assigned an authorial presence (Slack, Miller, & Doak, 1993, p. 13). In other words, if a discourse exists without a cultural identifiable authorial presence, that discourse is disempowered. In this way, the only means for readers to exert influence would be in the publishing of their discourse. The article continued by stating: "authorship empowers certain individuals while at the same time renders transparent the contribution of others" (Slack, Miller, & Doak, 1993, p. 14). This extended agency was new to modern analysis. In this view, it was the institutionalized bias of granting the term and identity of authorship that silenced other discourses. An author was thus not just responsible for the creation of her/his text, but also the silencing of those texts it displaced, including unpublished contributors. While not noted within the article, this theory relies upon a certain element of scarcity within the world of content where only limited discourses may be published and only certain individuals may participate as author. A lack of scarcity could challenge such a system, and diminishing the rate of scarcity would at the least diminish the power of such silencing. Take for instance that while, in this theory, the publishing of the article

silenced other voices who submitted to *The Journal of Business and Technical Communication,* where the article was first published, the fact that the article contains three authors and over a score of other authors dramatically decreases the ratio of silencing then if a single author had produced the texts in a vacuum. However, what about the editors and journal reviewers that also shaped the article remained disenfranchised from staking a claim to authorial voice, relegated to the afterthought of editorship.

Later in the article the authors defined the role of technical communicators "as variously adding, deleting, changing, and selecting meaning" (Slack, Miller, & Doak, 1993, p. 30). This expression of author as any articulator within a discourse certainly possessed a grounding with dialogic theory where Bakhtin stated that, "Language is a continuous generative process implemented in the social-verbal interaction of speakers" (Voloshinov, 1973, Chapter 1). If language can be described in such a state, then writing might well exist in such a state if it could exist in a textual system that supported this *continuous generative process.* This was a key element in examining text within a wiki environment, which not only saves and makes available each edit contributed within the environment, but permanently makes available comparisons between versions. A wiki, thus, has the potential to create an explicit record for a continuous, generative process in textual form.

How These Thoughts on Bias Influenced the Case Study

In a wiki environment authors are asked to inhabit a textual environment capable of sustaining what Bakhtin called a continuous generative process. How wikis do so vary

from system to system. I wish to overview a series of works that have addressed three different kinds of wikis to demonstrate this variety in order to better illustrate the choices I faced in how to run the wiki environment for this study.

Arguably, the most discussed journal article to thus far cover the wiki system came in Jim Giles' "Internet Encyclopedias Go Head to Head" in *Nature.* The 2005 article compared the accuracy of Wikipedia to that of the online version of Britannica. Wikipedia is a wiki-based encyclopedia where anyone may register an account and add or edit entries. At the time of the Giles article Wikipedia had about 45,000 registered users of the English version and 3.7 million entries since its founding in 2001 (Giles, 2005, p. 900). Giles compared the accuracy of fifty shared entries between Wikipedia and Britannica cover matters of scientific fact (Giles, 2005, p. 900). These articles were sent out for review by experts in the field, and 42 of the articles were returned (Giles, 2005, p. 900). The article stated that the reviewers found a comparable number of factual errors, omissions, or misleading statements: 162 for Wikipedia and 123 for Britannica (Giles, 2005, p. 901). However, the article neglected detailed coding of those terms, opening the door for a detailed report by Britannica published on the company's corporate Web site (Britannica, 2006).

Giles observations did serve to highlight many of the popular conceits about wiki environments. Wikipedia relied upon an open platform with a massive amount of editors to serve as checks and balances upon the information within the wiki. However, Giles focused solely on empirical analysis of the factual content of the wiki; at the same time, Britannica's response also remained focus on the empirical accuracy of the two encyclopedias. The study thus looked only at the factual accuracy of content, not how

users of Wikipedia viewed this content or even how they came about creating the content. The clear question of the Giles study originated in whether a wiki could be accurate, not how could a wiki be accurate. In my own case study, I recognized that I also wanted to know why participants held certain views of the articles reviewed; thus, any empirical evidence would need to include the measured reflections of participants or be balanced against a humanistic, narrative account of these reflections.

I also explored the wiki project, "A Million Penguins", conducted by De Montfort University and with a research report written by Bruce Mason and Sue Thomas (2007, p. 1). This wiki was created in collaboration between De Montfort University in Leicester and Penguin Books. The "Penguins" wiki project shared the Wikipedia investment in open source approach, inviting unlimited participants to join in the project. Mason's report stated that 75,000 different people viewed the wiki, of which 1,476 people registered as wiki users (Mason & Thomas, 2007, p. 4). Of the slightly over 11,000 edits, however, 25% were made by only two users (Mason & Thomas, 2007, p. 16). Mason gave detailed analysis of these two users in his study, but the study offered little structural definition for how the wiki was designed or even why design choices were made. The entire planning process was summed up in a single paragraph that articulated one rule the designers considered before deciding "such constraints were anathema to the spirit of the wiki, and the team knew that however well they planned beforehand, they must be prepared to be highly responsive and flexible once the project was live" (Mason & Thomas, 2007, p. 3). Unfortunately such obscuring of the digital environment and its administration granted no means to determine how the specifics of this particular wiki environment shaped the results of the study. Such lack of transparency confirmed to me

the importance of detailing what rules and coding were used within my case study and why I made those choices. It became clear to me that my methodology required accountability not to some generalized concept for a wiki, but to the specific environment I had created for this study.

The focus of the De Montfort study remained upon the community interaction of the project, and little coding occurred to inform a reader of what choices were made in creating the wiki environment—beyond the fact that the study utilized the MediaWiki system—or how decisions were made by the administrators during the project's lifespan. This interestingly enough resulted in what can be construed as the silencing of the coders' authorship in favor of the community's discourse, an interesting and important discourse but one that still silenced the discourse of the wiki environment itself. By ignoring how the environment was coded, the designers become silent collaborators much like that suggested within "Technical Communicators as Author." This silence unfortunately codified all wikis under a single definition due to the absence of a definition that clearly explained the design specificity of the "Penguin" wiki. What rights did administrators have? What rights did contributors have? How were these rights exercised throughout the study? Such questions drastically shaped the results of the case study, but remained under codified.

The final wiki environment I examined came from Don Tapscott's and Anthony D. Williams' *Wikinomics.* In this book, they discussed the wikis in the sense of businesses opening their knowledge bases to the public in hopes that the public would solve complex research issues the business could not. Their early example was the "Goldcorp Challenge" (Tapscott & Williams, 2006, p. 9). In this case a Canadian mining

company released the vast majority of its geological data in a contest that awards $575,000 to the best solution for finding gold deposits that the company's own researchers believed existed but had failed to locate. The authors explain that this geological data represented significant revenue potential to the company (Tapscott & Williams, 2006, p. 8). However, once the company opened access to their knowledge bank, solutions poured in from numerous sources and, in this case, resulted in enormous windfalls for the company.

The point for my case study was that in the case of *Wikinomics* a wiki represented the opening of a knowledge base to a large base of users who could create their own articulations of the content within that knowledge base, effectively allowing them to become authorial voices. This extremely open definition of a wiki within the public narrative should only intensify the need for close coding of what is meant by a wiki within research as it expands the notion beyond wiki software into any open knowledge base. This helped to illustrate how unstable the definition of a wiki remained within popular and research circles, particularly across fields.

In the case of the environment and methodology I have included within the next chapter, the use of writer, editor, and reviewer was meant to highlight the methods of articulation and power within my case study to establish how these varied forms of articulation altered views of shared content. For my study the wiki existed as a closed method to codify these three roles within a limited set of texts. I opted for the wiki environment due to its ability to closely define these roles, because of its continuous, generative nature for editors, and the ability to strictly code how individuals interface with one another within the study. However, while these codifications were useful, the

study also remained focused pm Rutter's and Manovich's desire for qualitative analysis when considering systems of communication. Perhaps none make that case more clear regarding systems such as databases than Jane Perkin and Nancy Blyer in *Narrative and Professional Communication* when they state:

Data or chunks of data might represent an interpretable narrative; however, data more usually appears as static, discrete, and decontextualized information. A narrative perspective is needed to add context, significance, elements of sequence or of time, plot lines, characters, and narrators—all essential aspects of creating relations and thereby making meaning. (Perkins & Blyer, 1999, p. 25)

This historical and contemporary overview of bias and wiki technology should assist in explaining the choices made in Chapter Three where I have detailed the environment and methodology used to build the case study environment and examine the interactions within that environment.

CHAPTER III

ENVIRONMENT AND METHODOLOGY

In this chapter I have outlined the environment of the case study and the

methodological approach proposed for this thesis, including participant roles, tools used,

research methods, and any concerns derived from the use of human participants in the

case study. The methodological approach of this case study included two primary goals:

to examine the results of the participants' interactions within the submitted texts by

empirical and narrative analysis and to encourage an examination of the methodology of

the wiki environment used. The empirical analysis of textual bias largely took the form

of survey evaluations, while elements of narrative analysis grew from recording the

stories of participants as passed on to me via phone, email, and interactions within the

digital environment.

I viewed the collected elements through an empirical and humanistic lens—

inspired by the works of Russell Rutter, Lev Manovich, and John Locke, among others,

and as examined in Chapter Two—to determine how the software environment helped

define the role of writer, editor, and reviewer into easily parsed terms. I defined these

roles within the environment through which rights within the wiki were assigned to

which participants. In this case, rights refer to actions a group of participants were allowed to take within the wiki, such as reading or editing particular texts. The specific rights allowed to each group are explained later within this chapter. The output of writers, editors, and reviewers was then compared via graphic trends to see how each group deviated from the average output of the entire population in their responses to a series of survey questions.

Since so much of the study relies upon understanding the digital environments used and the technology behind them, I have structured this chapter to:

- First, explain the basic procedure for the study,

- Second, present an overview of the methodology for content analysis,

- And finally, offer an explanation of the case study environment.

Case Study Procedure: Roles and Timelines

This project involved a five-week case study with three participant groups: writers, editors, and reviewers. The specific role for each group has been detailed below.

Writers

Writers submitted one or two articles apiece varying from 500-2,000 words in length. I requested the writers send two articles one week before the case study began; the text could be fiction, memoir, essay (movie review, critical scholarship, opinion piece), instructions, or a business document. The exact wording of the request is below:

> Thank you for volunteering to be a writer for the wiki case study. Please submit
> your article of writing in the body of an email to this address

(mt1225@txstate.edu) by next Saturday (09/13/2008). You may feel free to use an existing text, so long as you own the full rights to the submitted text. The piece should be 500-2,000 words in length.

If you have changed your mind about participating as a writer, please respond as quickly as you are able so that a replacement may be notified. If you need extra time, email me and I will attempt to make arrangements where I can.

Essays and fiction dominated the submissions likely due to the fact that participants came primarily from either undergraduate writing courses or fiction-orientated writing groups. While two writers did not submit texts, none of the writers emailed back with a request to be removed from the study.

These works were then placed on the wiki as articles. For the purposes of this study, an "article" referred a text viewable in the wiki that could be edited only by the writer group. The wiki was secured via password protection and anonymous, pre-assigned usernames so that only authorized participants (editors, writers, and myself) could view the website, and so that participants could not be identified outside of the study. Reviewers could not access the wiki.

Each week two articles were placed into the wiki, for a total of ten articles over the course of the study. Writers were allowed to make changes to the article they submitted. They could also see the copy of their submission in the editors' wiki page section, but could not make changes to that version. At the end of each week, all writers were asked to complete surveys on both the writer and editor versions of that week's submissions, rating five factors—originality, cohesiveness, personal value, style, and

readability—on a scale of 1-5.

Editors

Editors could view both the writer and editor version of each article, but only had access to make changes to the editor version. They were individually assigned a 30-minute period each day for each editor's exclusive use, and told they could edit anytime outside of these specified windows. The time periods helped ensure that each editor had an opportunity to access the two editor versions for that week without being locked out by another editor since only one person could make changes at a given time on a given page.

At the end of the week, the editors rated both versions of all articles for that week. They evaluated the same five factors—originality, cohesiveness, personal value, style, and readability—as the writers on the same scale of 1-5.

Reviewers

Reviewers also performed the same rating function, but they did not know which text were the editors' versions and which were the writers' versions of each article. Reviewers were sent a link to a secure Web site outside of the wiki environment where the four versions of text for that given week were displayed in quadrants.

In effect, reviewers operated in an entirely different space from both writers and editors, as they never were allowed access to the wiki.

Writers, Editors, and Reviewers

All participants completed two additional surveys: an entrance survey completed with the consent form and an exit survey completed after the end of the case study. The

surveys have been included in Appendix A. The weekly surveys allowed me to track how the participants responded to both versions of each text by grading the five categories mentioned above on a scale of 1-5. By keeping the survey short and simple, I hoped to encourage participants to complete all four surveys each week. In essence, this sacrificed a high level of specificity in the surveys to ensure a higher attachment rate for reviewers.

How Roles Were Assigned

Participants were assigned to a group based primarily on subject's preference as designated from the entrance survey. However, there was an attempt to keep all three groups representative of the different 'writing experience' levels noted in the entrance survey: professional, never published, occasionally published (See Appendix A).

Table 1. Roles by Text. This table demonstrates how each group interacted with the two different versions of the texts presented in the case study.

Writer Version: Article	Editor Version: Wiki Page
Edited by Writer	Edited by Editors
In Wiki, Viewable by Writers and Editors	In Wiki, Viewable by Writers and Editors
Viewable by Reviewers on Web site at End of the Week	Viewable by Reviewers on Web site at End of the Week
Editors, Reviewers, Writers Rate in Survey	Editors, Reviewers, Writers Rate in Survey

Weekly Timeline

The timeline essentially functioned on a two-week cycle. In the first week, Monday through Saturday, writer and editor texts were open to changes from the

appropriate groups. Starting on Saturday, the texts were locked and the surveys opened. The locked texts were then posted on the reviewers' Web site. The surveys remained open from Saturday through the next Friday. Thus, for writers and editors, surveys for Week One were open while they edited texts from Week Two. This cycle continued for five sets of texts over six weeks.

Table 2. Case Study Time Table.

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1		Week One Texts Posted to Wiki for Editors and Writers. Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Week One Texts Locked and Copies Posted to Reviewer Web site. Week One Surveys Opened.
2		Week Two Texts Posted to Wiki for Editors and Writers. Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs. Week One Surveys Closed.	Week Two Texts Locked and Copies Posted to Reviewer Web site. Week Two Surveys Opened.
3		Week Three Texts Posted to Wiki for Editors and Writers. Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs. Week Two Surveys Closed.	Week Three Texts Locked and Copies Posted to Reviewer Web site. Week Three Surveys Opened.
4		Week Four Texts Posted to Wiki for Editors and Writers. Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs. Week Three Surveys Closed.	Week Four Texts Locked and Copies Posted to Reviewer Web site. Week Four Surveys Opened.
5		Week Five Texts Posted to Wiki for Editors and Writers. Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs.	Editing Occurs. Week Four Surveys Closed.	Week Five Texts Locked and Copies Posted to Reviewer Web site. Week Five Surveys Opened.
6						Week Five Surveys Closed.	Exit Survey Sent.

Candidate Selection Process

I sought subjects from local writing groups and college-level writing courses, both undergraduate and graduate. The subjects represented a wide range of ages from 19 to 61. The participants all exhibited a native speaker level of English proficiency due to the subject sources existing within an area where English is the dominant language. While I acknowledge the need for future studies of additional languages, the limitations of this study pushed toward an English proficiency requirement. This was because all writers, editors, and reviewers needed a generally shared competency in the language of each text to successfully complete the evaluation of these texts via weekly surveys.

I approached subjects through local writing groups and college classrooms. In the case of students I requested permission from the professor to speak with students, and in the case of writing groups, I received permission from the writing groups to contact members via email. In all cases, I simply asked for those who were interested in a case study about online writing workshops to contact me. If a participant showed interest, I supplied a consent form and entrance survey. All participants who returned a consent form were accepted into the case study.

No forms of incentive (beyond the act of participating in the study and any benefits derived from study participation itself) were used within the study, either to enlist participation or keep participation going once the study had begun. Written consent forms were provided at the time of recruitment along with an entry survey. A copy of the consent form is available in Appendix B.

Methodology of Analysis: A Word on Content Analysis in Internet Studies

In the article "The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web," Sally J. McMillan identified a five-step process for content analysis on the Web: Formulate the research question, select a sample, define categories for coding, carefully train coders, analyze data (McMillan, 2000, p. 81-82). Back in 2000, when McMillan wrote the article, the Web's primary threat to research was how to handle its newness: defining what a site, page, view, or any number of other terms meant was a vital aspect in determining the value of a studies analysis. Loose coding of terms still struggling to find definition in an emerging field could quickly create more questions than answers. While the Web has stabilized many of its terms to one degree or another over the last nine years, McMillan's points have remained useful when looking at emergent and understudied aspects of the communicative technologies for these same reasons.

The wiki, as both an object of research, certainly has fit this rubric for identification of protocols with dangerously under-defined context units when it comes to content analysis. Much like the World Wide Web of 2000, to date content analysis of wikis has been a field of sporadic publishing from divergent fields. While interdisciplinary research can help cast light upon many different elements of a single problem, it also must deal with competing definitions for context units and terministic conflicts across fields of research. Chapter Two addressed the sometimes ambiguous nature of research concerning how to define a wiki, and no one field has suitably defined the contextual units of a wiki or even what fully constitutes a wiki in theory or practice. For example, unanswered questions include "what differentiates a wiki from a Content

Management System (CMS)" or "must a wiki be open to editing by all its viewers to

retain the theoretical ethos of a wikis rhetorical claim to openness?" The lack of

established and accepted answers on such subjects requires careful coding by a researcher

when dealing with wikis in any study so as to clearly establish a rigorous definition of

that case study's use of the term wiki in order to avoid discipline confusion and clearly

frame results.

Due to issues of definition, the important elements of this study have been tightly

coded and defined in precise detail within this chapter. This includes the terms writers,

editors, reviewers—and the digital spaces in which these individuals acted. Hopefully

this tight coding will mitigate McMillan's most damning finding in her study of early

Web content analysis: that they "failed to build rigor into their research designs in their

haste to analyze a new medium" (McMillian, 2000, p. 91). In fact, the ability to closely

regulate the rights of participants within the wiki allowed the actions of participants to be

more tightly coded than would be possible in person by ensuring who was able to see

which text, providing copies of all editing, and controlling communication in a method

not possible in face-to-face interaction. This allowed the case study to focus on

interaction with the text over interaction between individuals.

Method of Content Analysis

The primary method of evaluation for this case study was content analysis of the

changes made in the wiki, the results of the surveys, and impressions built from

individual emails. Of the three, the first two were evaluated through tracking empirical

data, while email correspondence was evaluated as a narrative entity (mostly a critique of

the wiki space itself).

Since bias was the focus of this case study, evaluating the results of the surveys remained the main empirical focus. This included charting the survey results and comparing the trends of writers, editors, and reviewers versus an average of all participants within the study.

Content analysis also focused on identifying signs of bias between editor and writer version by comparing individual and group ratings of texts across both versions. Thus, the key stats for comparison was factor of difference in the surveys between groups and individuals as charted in Chapter Four.

The Case Study Environment

The case study consisted of four environments: the wiki production environment for writers and editors; static Web pages for reviewers; the survey Web pages used by reviewers, writers, and editors to complete weekly reports; and email communication used throughout the study between myself and all participants.

A careful description of each environment follows.

The Wiki Environment: An Overview

The wiki involved a set of Web pages that allowed multiple users to read and edit the content on those Web pages. This shared content was created by storing the data from the Web pages within a database and granting access to edit that database to members of the user base. I found that a wiki differs from most other Web pages in that users can change existing content on the Web page, both by addition and deletion. The common

right of deletion was what differentiated wikis from many other interactive Web applications I examined, such as forums and comment fields—in a wiki, a user may delete and change the content of others as well as add new content. In other current interactive media, a user is generally limited to either adding new content or deleting only their own content. The right to delete the content of other users is typically a hierarchical power reserved for site managers or administrators in non-wiki environments such as forums and comment fields. However, many wikis keep records of all content produced within the wiki, even after deletion. This was true of the TikiWiki system I employed, where all changes were not only recorded but all versions of a text could be compared side-by-side across edited drafts. This combination of right of deletion and persistent record of all changes within the environment represented the cornerstones of wiki environments as I came to define them. While one can view this as just another version of existing database technology, the specialized use of this technology suggests that it is a new technology in its application of rights for deletion and addition—the same way that email was a new technological application even though it essentially has remained just a means of sharing field entries across databases.

Email, comment fields, and forums are all designed from databases and defined by how the content is created and shared within the application accessing the database; so the wide-spread right to delete the content of other users remained the key fundamental distinction between a wiki system and a comment field or forum database—or even email if one considers that wiki style rights would allow one to delete email in another person's inbox. While most wikis have also encouraged the use of hyperlinks to connect posts that share related content, technically a forum could do the same, though this rarely has

occurred in pervasive practice due to the different *purpose* of the forum, and not as an exclusive systemic issue of how the forum environment functions. Therefore, the linked nature of content within a wiki, while useful, has not been so much its defining feature as its open editing access, particularly as regards the right to deletion.

It is important to note that a wiki can, and often does, offer different editing "rights" or "permissions" to different groups of users; thus, some groups might only be able to read a wiki, while others might be able to read and edit. In this way, a wiki need not grant all rights to the entire population of the Internet in order to function as a wiki, in either practice or theory. Wikis may vary greatly in who may use them and to what extent those who use them may edit content.

The Case Study's Wiki Environment

The wiki used in this study had a limited population of twenty users—10 writers and 10 editors. Writers were identified as those who possessed rights to read the entire wiki and could edit only texts they submitted, called "articles" (Figure 1). From a technical perspective, any writer could edit any article in the wiki environment used for this study, but I emailed the that writers requesting they only edit their own articles and requesting they report any violations of this request. Over the course of the case study no writers reported any violations of this request within their articles. During each week of the study, two separate authors each submitted one article a piece to the wiki.
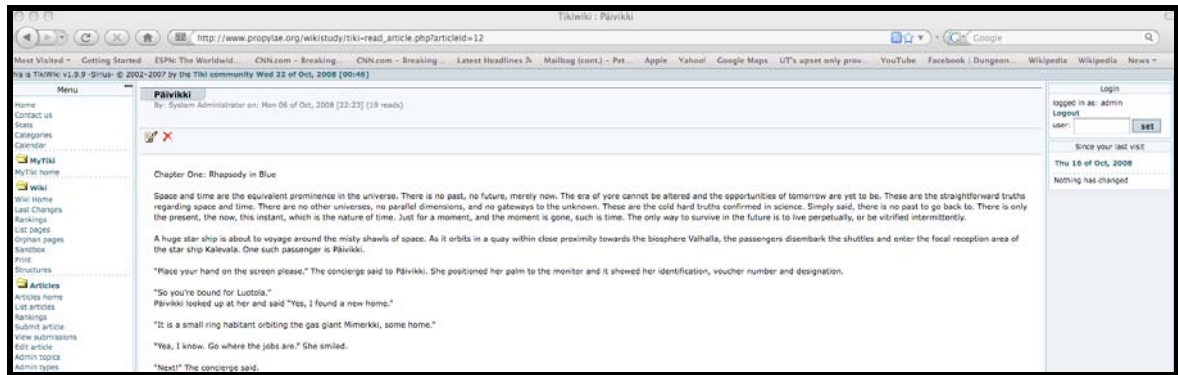
Figure 1. Writer Article. A glance at article layout in the wiki.

The editor coding signified those users who possessed rights to view the entire wiki and edit specified pages within the wiki environment called "wiki pages". All of the wiki pages were locked except the two texts for each given week, so only I could edit the locked pages and editors could not add new pages. I kept editors from adding new pages to make sure that editors continued to edit the same text and were force to collaborate with other editors. In essence, editors had access to edit two wiki pages per week. This allowed me to tightly code the role of the editor as someone whose role was exclusively to collaborate on one of the two editor versions each week. The tightening of who could use the wiki and how they could use the wiki helped control what was being evaluated within the case study.

These editor pages were copies of the articles originally submitted by writers for that week (Figure 2). All 10 editors had access to edit the two editor pages for each week.

Figure 2. Wiki Page for Editors. Glance at the wiki page for editors.

      Anyone else who attempted to access the wiki was greeted with a message saying

the site was down for maintenance (Figure 3). This was done to help protect the author's

work from plagiarism and ensure a controlled environment for the case study by limiting

the number of participants to ensure all actions could be tracked efficiently.

      The wiki system used was the open source TikiWiki project. I chose TikiWiki

because it was a stable, open source environment that allowed for the restricted

interaction I needed in codifying the roles of writers and editors.

Figure 3. Login Screen.

Reviewer Web Page

The reviewer coding for this case study referred to 10 participants who could not access the wiki in any form. Instead, each week reviewers logged into a separate secure Web page that had the final editor and writer versions for both of that week's texts (Figure 4). This ensured that reviewers would never know which text was the writer version and which was the editor version. The positions of the texts created by the writer and editors were flipped throughout the study to foil any attempts at guessing which texts were writer or editor versions. While I would have preferred that reviewers work within the wiki space, there existed no means to protect the reviewers from learning which texts were editor and which were writer versions. Since reviewers formed the blind population, their inability to discover which version was which overruled any concerns about the use of a second environment.
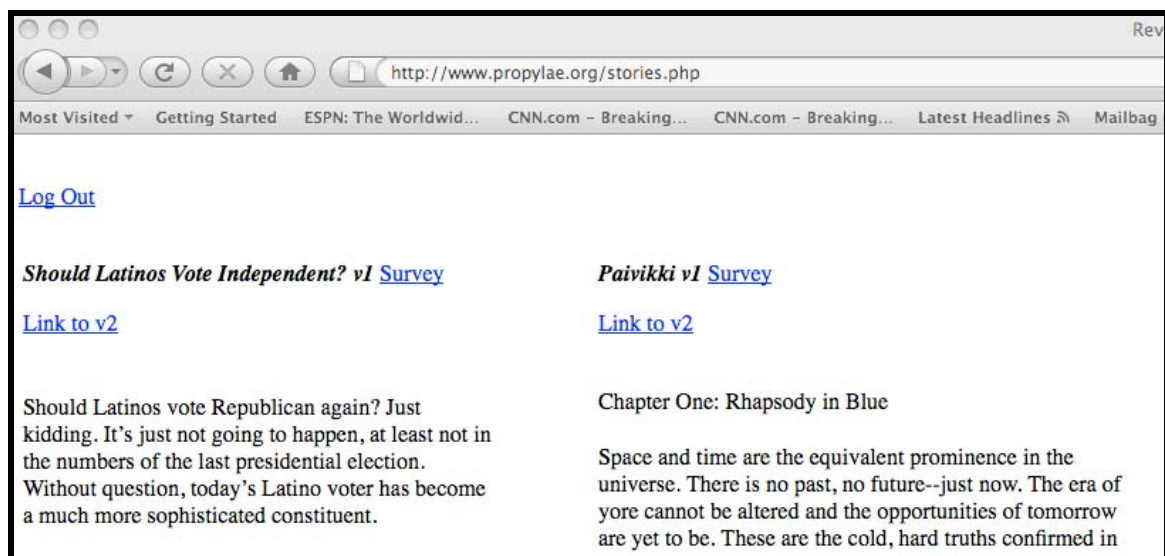

Figure 4. Reviewer Web site. Layout for how reviewers examined text.

Surveys

Each week, all 30 participants were asked to complete a six-question survey online. The questions asked each participant to rate the texts on a scale of 1-5 on five qualities: Cohesiveness, Originality, Readability, Style, and Personal Value. The sixth question was for the username of writers and editors. The five qualities were defined within the survey as:

- Cohesiveness—how is consistent the text
- Originality—how fresh is the text
- Readability—how easy is the text to read
- Style—how compelling is the actual writing of the text
- Personal Value—how much does the text speak to you personally

The idea was to create a series of general terms to see how each group responded to both the writing (cohesiveness, readability, style) and more narrative subject-based (originality and personal value) categories in the text. This allowed me to directly compare how the average editor and writer ratings for these categories compared to the average reviewer rating. Since the reviewers were blind to whether the version they rated was the sole author or collaborative/edited version, this presented the reviewer averages as a baseline to judge bias between editors and writers.

The survey was the exact same for each text version and across all five weeks. Additionally, a printed entrance survey and exit survey were used. The samples of each type of survey can be found in Appendix A. The online surveys were conducted through an account at SurveyMonkey.com, a Web site that specializes in creating customized

surveys. This allowed me to create the survey online and email my participants a link to the surveys each week for ease of use.

While the surveys were extremely general and lacked detailed definition, I made this choice because I was requesting the participants to complete four surveys a week. While a more detailed survey may have offered greater clarity in specification, I was deeply concerned that it would result in a decrease in completed surveys. Given the relatively small population of the three groups, I opted to keep the surveys as simple as possible.

Emails

Throughout the case study, I used emails to notify the participants of important events and to answer individual questions. I emailed participants as a whole twice a week: once to let editors and writers know that the week's articles were up and a second time to tell all three groups that texts were ready for review and to provide a link to that week's surveys. Editing was always locked during the survey period for a text to ensure everyone was rating the same sample.

While I never initiated individual contact via email, several participants emailed for clarification of technical or procedural issues during the study. I also received one telephone call from a study participant, but email was far and away the preferred manner for participants to contact about questions or observations.

Of additional note is that participants had no means to contact one another within the study. Each participant received a generic username (editor7, writer9) that kept

identities anonymous. The wiki did not allow for messaging within the wiki or the storing of participants' email addresses.

Security

Secure logins served a dual purpose. They provided pseudonyms to all users, thus protecting anonymity. Additionally, they ensured that only those involved in the case study have access to the texts submitted within the study. This minimized risks of plagiarism or unwanted exposure for those participating in the case study. Also, the pseudonyms provided via secure login meant that even participants who knew one another would remain effectively anonymous to the other party(ies) during the case study. Since some participants came from the same classes or writing groups, this was a definite risk.

CHAPTER IV

RESULTS OF THE CASE STUDY

The results of this case study have been distributed into participation, evaluation, action, and narration. Participation measures who participated in the study and how often. Evaluation examines the characteristics of the surveys. Action takes a closer look at the activities that occurred within the wiki environment. Finally, narration reviews a couple of specific stories that existed outside these measurements—the kind of narrative elements defended by Perkins and Blythe.

Participation

The case study began with thirty interested parties: 10 writers, 10 editors, and 10 reviewers. Recorded action was taken by eight of the writers, eight of the editors, and at least nine of the reviewers, for a total of 25 identifiably active participants. Of those participants, two writers and two editors only took actions in the first three days of the study.

Since reviewers did not log into the wiki, I could only track unique reviewers by the number of reviewer surveys completed each week. The fact that surveys did not require a unique name from reviewers meant that while I could identify how many reviewers were active any given week, I could not confirm shifts in reviewer identities across weeks. I was able to confirm unique reviewers per week because the surveys tracked IP addresses and only allowed one entry per IP address per survey. However, since a user might use a different machine (such as from work or home) week to week, IP addresses were not a reliable way to confirm unique reviewer identities across weeks.

Weekly this participation broke down as follows:

Table 3. Study Participation.

Week	Writer (Surveys)	Editor (Surveys and/or Edits)	Reviewer (Surveys)
1	Writer6, Writer7, Writer15	Editor5, Editor9, Editor10, Editor12, Editor13	Eight Reviewers
2	Writer15	Editor5, Editor9, Editor10, Editor13	Seven Reviewers
3	Writer10	Editor5, Editor8, Editor9, Editor10, Editor13	Nine Reviewers
4	Writer10	Editor9, Editor10, Editor13	Six Reviewers
5	None	Editor9, Editor10, Editor13	Seven Reviewers

Thus, writers participated the least as a group within the case study on a weekly basis (keeping in mind that story submissions largely occurred the week before the case

study began), reviewers participated the most as group, and editors squarely in the middle as a group.

It was possible that since writers could not edit any text beside their own that they lost interest quickly in the study. One solution in the future would be including surveys within the wiki itself to make it a more active presence and creating a more dynamic environment by allowing direct commentary through the surveys. A future study might also allow a writing group to edit the works of other editors to see if the evaluative graph of writers shift when they act as editors. The fact that reviewers did not suffer from this issue might suggest that the narrower window per week for reviewers to act helped in involving reviewers. Alternatively, reviewers may not have felt that their "job was done" the same as a writer who submitted a text early in the study. Sadly, none of the evaluations illuminated this issue beyond one writer who did state the surveys' generality caused the writer to lose interest over the five weeks.

Evaluation

In all, 189 surveys of the 10 texts were collected. This included 130 surveys from reviewers, 43 surveys from editors, and 16 surveys from writers. Additionally, reviewers surveyed 65 writer versions and 65 editor versions, editors surveyed 22 writer versions and 21 editor versions, and writers surveyed nine writer versions and seven editor versions. A side-by-side graphing of all editor versions and all writer versions can be
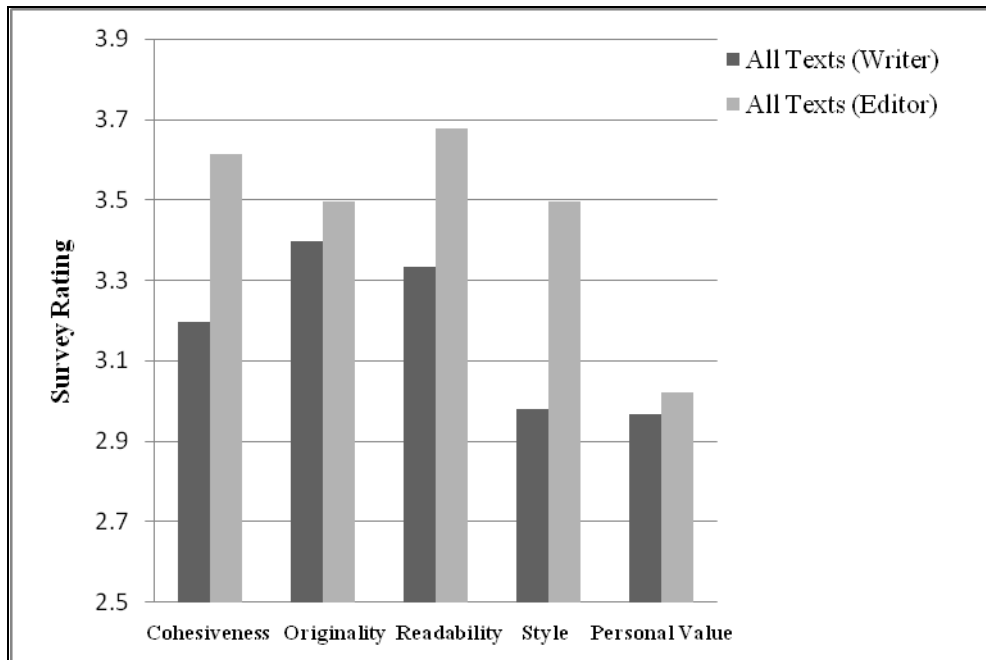
seen in Figure 5.

Figure 5. Chart of All Surveys. The average ratings of all groups (writers, editors, and reviewers) for the five categories.

For this chart and all future survey charts the vertical axis is the average rating on a scale of 1-Poor, 2-Below Average, 3-Average, 4-Good, and 5-Excellent. The horizontal axis represents the quality measured: 1-Cohesiveness, 2-Originality, 3-Readability, 4-Style, and 5-Personal Value.

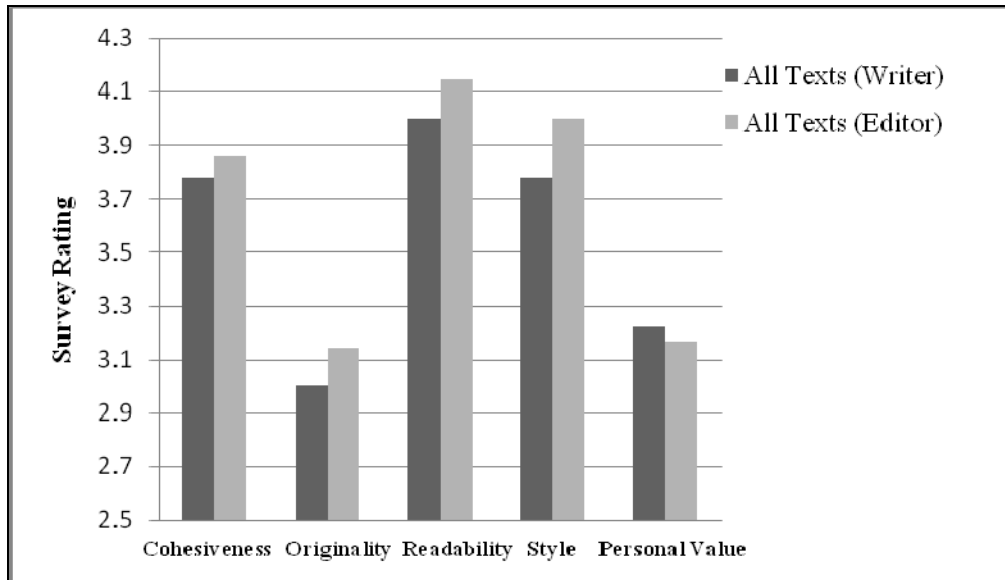The graphs for writers, editors, and reviewers follow.

Figure 6. Writer Surveys. The average ratings by writers for the writer and editor versions.
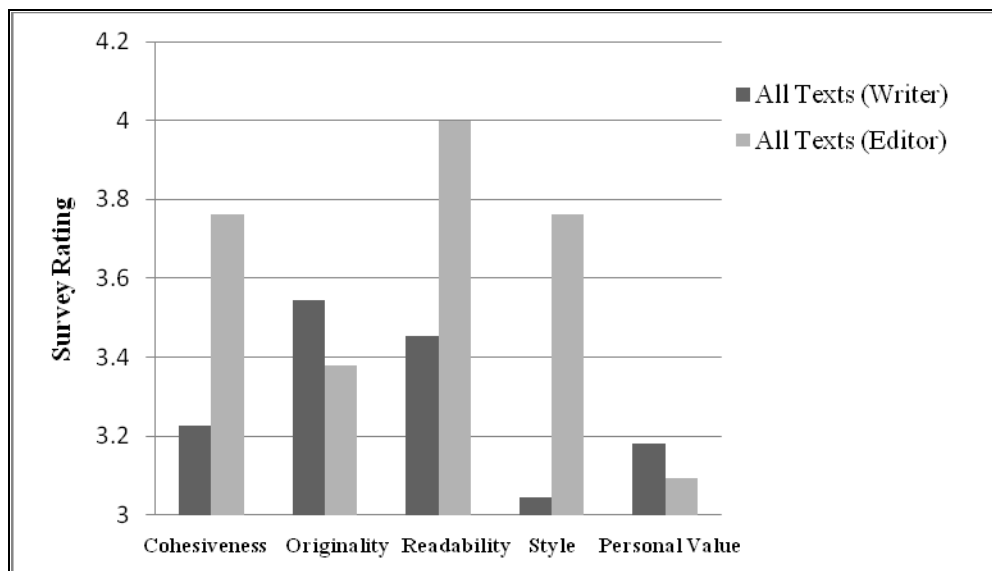

Figure 7. Editor Surveys. The average ratings by editors for the writer and editor versions.
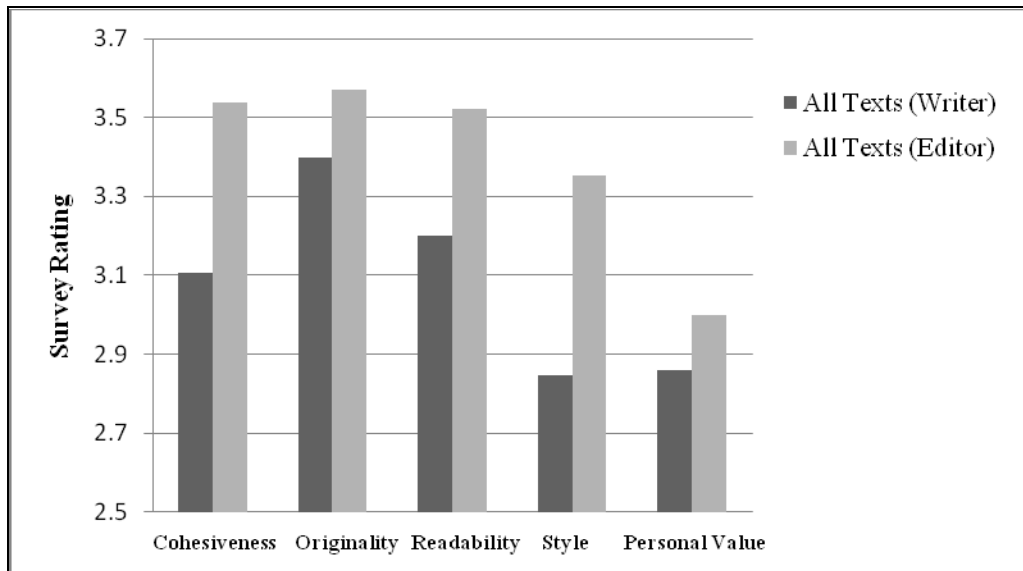
Figure 8. Reviewer Surveys. The average ratings by reviewers for the writer and editor versions.

More will be said about these results in Chapter Five, but all four charts highlight a particular trend that bears mentioning in the clustering that occurred around the concepts of Originality and Personal Value. For whatever reason, all three groups tended to grade the writer and editor versions far more closely on these two categories, Originality and Personal Value, than the other categories. It should also be noted that the writer graph is dominated by the perceptions of two participants. Writer10 and Writer15 constituted twelve of the sixteen writer surveys.

Action

Writers were able to edit their articles throughout the week, but this was not tracked. Since the author remained in control of her/his article, any additions during the course of the week did not affect the evaluation of bias at the end of the week as it related to editor versus author versions. Eight of the writers logged into the wiki over the course of the study, even though only four completed surveys. I suspect many writers felt their

participation was over with the submitting of the text. It might have been possible to keep them more involved by allowing them to edit as well, though their edits would have required a separate space from the editors' version to ensure the close coding of writing and editor remained in place.

Editors contributed during the week by altering the editor version of the texts (Figure 9). This resulted in a considerable investment of time on the part of editors, well beyond that of either writers or reviewers. With the exception of Editor5 (whose story will be explained later in this chapter), editors only completed a survey if they participated in editing the text for that week; though more than once, one or two editors contributed to editing without completing a survey.

Figure 9. Sample of Edited Text. A side-by-side comparison of one paragraph before and after an editor made changes in the text. Changes were marked in red with deletions on the left and additions on the right.

Reviewers did not have access to the wiki, thus they only contributed via survey evaluations.

Narration

Honoring the tradition of Blythe and Perkins, several stories arose throughout the course of the case study. One I mentioned earlier was the case of Editor5. Editor5 was the only editor to complete a survey without editing the text during the week. The reason for

this was that Editor5 experienced numerous issues attempting to edit the wiki as first time wiki user.

Editor5 was the only person to contact me during the course study about technical or system issues. We exchanged over a dozen emails over four weeks, and spoke on the phone once. While we were at times able to resolve Editor5's inability to access the editing tool on the wiki, the problem reoccurred weekly. To the participant's immense credit, Editor5 reliably reviewed texts until finally bowing out of the study all the way into week four. The story highlights an important aspect that, while most individuals seem to smoothly navigate the process, the system can still frustrate and alienate some users. The possible minority created in such an environment deserves recognition even when statistical small. It was also possible that some of the five participants who never took an action were discouraged by the technical environment; though I did not receive any data or feedback to support this conclusion.

While only about thirty-three percent of participants completed exit surveys (a number that represents slightly less than half of active participants during the case study), several did reveal issues with the case study system. Many would have preferred a survey/rating system within the wiki. Three of the ten exit surveys mentioned this issue. Another common refrain was the ambiguous or overly simple nature of the survey questions. While the goal of the survey was to track generalized bias, clearly the desire to provide more specific feedback was desired by certain reviewers and writers. Future studies likely should examine ways to integrate surveys smoothly into the environment and encourage the option for long form comments on the writing. Another possibility is

displaying the weekly ratings after a period, allowing another session of writer and editor edits based on the feedback, followed by another review period to increase interactivity.

Regarding changes in activity, about the time Editor5 left the study, I received an email from Writer13 apologizing for a lack of activity. The participant had had several trials to deal with, but wanted to state a more active role going forward. While surveys did not show an increase in activity, log-ins did indicate a more active presence. Given the lack of community within the study, the contact from Writer13 may have been a side affect of this factor. However, none of the exit surveys commented on the inability to contact other participants.

All in all, the case study produced a wealth of empirical evidence, but of equal interest is that even though participants could not communicate with one another, several narratives managed to evolve anyway. This highlights the importance of being able to report the stories behind the evidence, as well as the evidence itself.

The importance of these narratives, particularly regarding difficulty in the environment, lies in how they highlight authorial conflict within the collaborative process. The article "What Experienced Collaborators Say About Collaborative Writing" highlighted the importance of conflict within the creative collaborative process; one key topic mentioned in the article was that preservation of multiple viewpoints within a group can increase creativity within a collaborative environment (Allen, Atkinson, Morgan, Moore, & Snow, 1987, p. 83). While the editing process of a wiki can allow systemic preservation of multiple viewpoints in the edited whole, commonalities of conflict in individual narratives can also preserve these viewpoints. Since this case study largely

eliminated direct conflict by a lack of communication, these narratives helped illustrate the types of conflict present within this creative simulation. I intended, by highlighting these conflicts, to illustrate some of the possible conflicts that might lead to a means to creative collaboration in future studies.

Chapter V

A LOOK AT BIAS IN THE WIKI

To open my analysis of the results, I should note one important factor about the

texts in this case study. While I had glanced at the texts to post them and to see how

many edits were made to each text, I consciously did not read any of texts. I made no

determination of merit prior to accepting or posting the texts, and have not read them

since the case study began and until after finalizing this report. The point of this was to

allow the stories of the participants speak for themselves and avoid inflicting my own

bias upon the results. I also wanted my analysis to be as directed toward the actions

within the case study as possible. If this was to be an evaluation of perceptions, it should

be an evaluation of the participants' perceptions: the empirical results and the narratives

should be theirs as much as possible.

Signs of Bias

A glance again at Figure 5 (p. 43) shows that overall participants who completed

evaluations preferred the editor versions when it came to Style, Readability, and

Cohesiveness.

Table 4. Definition of Rating Terms.

Term	Definition
Cohesiveness	How consistent the text is.
Originality	How fresh the text is.
Readability	How easy the text is to read.
Style	How compelling the actual writing of the text is.
Personal Value	How much the text speaks to you personally.

Equally interesting was that in all four graphs there was a general lack of differentiating Originality and Personal Value between the two versions. Uniformly, these two qualities had the least difference between versions. The editor version also steadily remained the most favored version across all groups, even among reviewers who could not identify which version was the editor or writer version. Style, defined as how compelling the text was to read, universally showed the most improvement from editor version to writer version.

That reviewers' tendencies tended to match the editors' preferences suggested that either editors did not reflect a significant bias in surveying the edited version versus the writer version or their bias mapped the exact same path as the group who had no knowledge of version differences. So any bias the editors possessed was also played out within the blind group.

Sadly, the writer sample was too small to draw a similar conclusion. Yet some elements can be seen even the smaller sample size. The writer surveys tended to suggest a perception of slight improvement between versions by rating the edited version slightly higher than the writer version on average. The writers also provided additional insights in how high they rate certain aspects. Writers regularly rated the categories of Style, Cohesiveness, and Readability higher than the average of all participants while rating Originality much lower than average. Personal Value remained on par. This might suggest that editors and reviewers were regularly able to see room for improvements that writers were wont to miss. This fresh eyes syndrome was not unknown before the study, but here it was clearly illustrated here.

Consider these two graphs of how each version was viewed across groups:
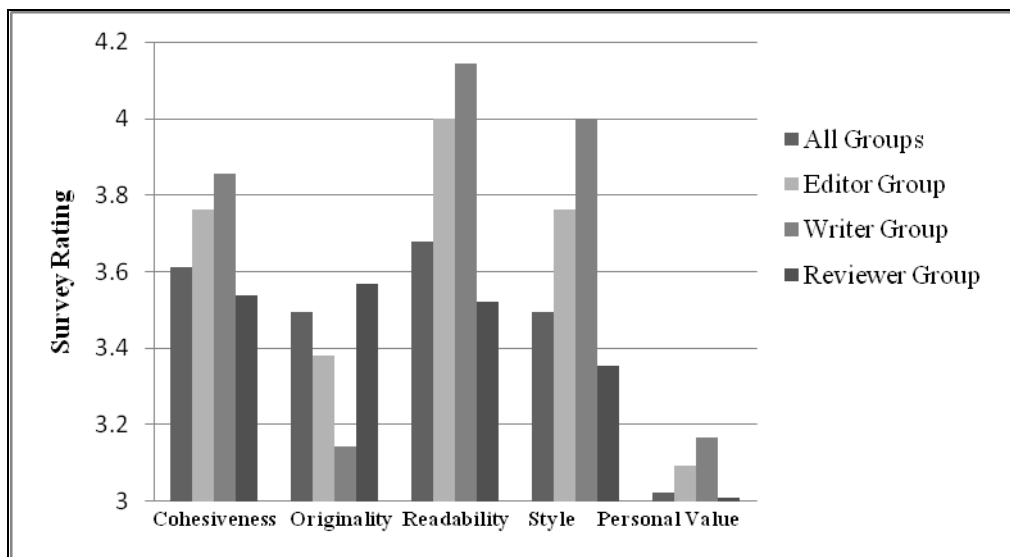

Figure 10. Group Ratings of Editor Versions Only.

When reviewing the editor versions, the larger reviewer group stayed close with the editors and writers in all respects except Readability and Style, which were significantly lower among reviewers. This did suggest that lack of personal investment

might have moderated the reviewers' responses—or, to put another way, involvement in a text as either writer or editor tended to bias participants toward higher response ratings. However this same lack of involvement also seemed to make the reviewer group slightly more willing to acknowledge the Originality of a piece, suggesting that any type of involvement reduced a participants rating of Originality. Once again, Personal Value was remarkably stable across all groups. Writers were far and away the group most likely to give a low grade for Originality.
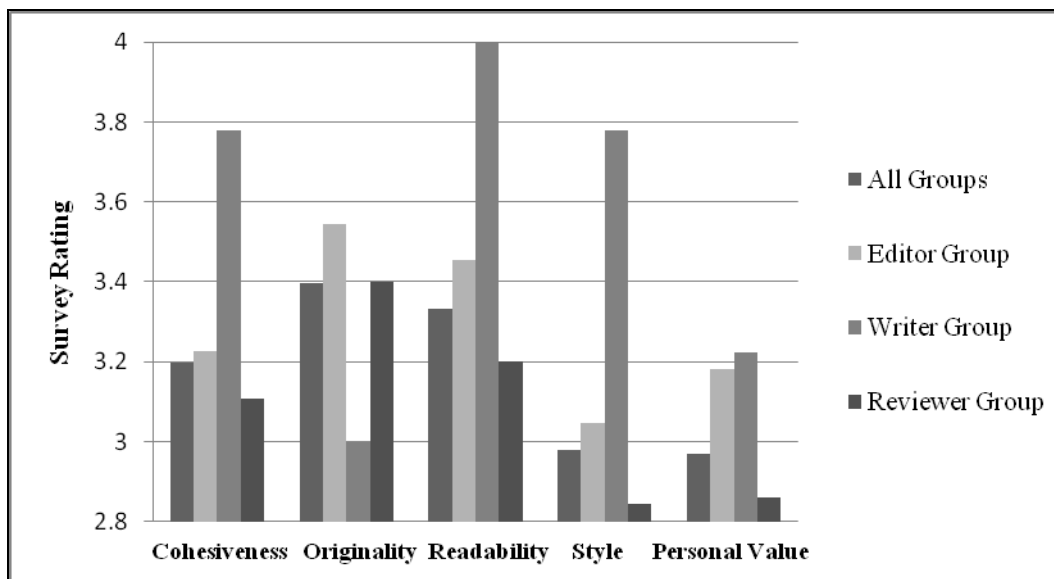

Figure 11. Group Ratings of Writer Versions Only.

The rating of the writer versions told a slightly different story. Here the writers' bias was pretty clearly indicated, while the reviewers and editors remained comparatively uniform. If the low number of writer surveys can be trusted, it seemed to suggest from this graph that writers overestimated their versions Cohesiveness, Style, and Readability, while also remaining overly humble about Originality. Now, the average above reflected the writer group's opinion across all writers' texts, not just how writers' rated her/his own entry.

Although it was possible that editors inflated their sense of Originality in deference to writers, the difference between the reviewer analysis of Originality and the writer analysis of Originality is twice that of the difference between editor and reviewer analysis of Originality and, thus it seemed more likely that writers possessed a substantial bias against Originality within the writer versions over reviewers and editors.

Together the two graphs strongly suggested that in the overall case of these texts, the editor versions resulted in more agreement across groups and general improvements without sacrificing many of the key elements cherished by authors, Originality and Personal Value to the reader. Though it should also be noted that in all graphs Personal Value routinely scored the lowest aggregate rating. However, that aggregate still increased from writer to editor version, even if only mildly.

The blind review by writers confirmed the overall improvements in texts when others were free to engage with texts to make changes. It also strongly suggested that in at least this selection of participants (writing group members and undergraduate and graduate students by and large), an enormous amount of respect was given to the core Originality of the piece and editors were hesitant to make changes that affected this Originality under blind review. On average, this type of environment regularly improved the texts submitted while maintaining their original contexts and content per the surveys.

One final aside, was that a writer did note in an exit survey that she felt one piece had been altered such that the political stance within the piece was reversed (from conservative to liberal in the eye's of this writer). While the writer was not commenting on her own text, it did highlight that these concerns remained for individuals even if they

did not show up in the surveys on a consistent basis. This also highlighted a potential weakness in the general nature of the surveys to capture minor irregularities that went against the greater trends.

Conclusions

Kenneth Burke wrote that "much that we take as observation about "reality" may be but the spinning out of possibilities implicit in our particular choice of terms" (Burke, 1966, p. 46). He might as well have been speaking about the interpretation of graphs as well as the terms of writer, editor, and reviewer. Certainly, the use of sign-making in this thesis remained conscious of the genre conventions in which it finds itself (Kress, 2004, p. 84). That is to say that the wiki environment of this case study created a unique definition of writer, editor, and reviewer in which the results and analysis of this study squarely fit. It somewhat limited their application in arenas outside a specific type of wiki environment, but also expanded the wider definitions of these terms, including writer, editor, reviewer, and wiki. All this said, clearly the terms "writer," "editor," and "reviewer" meant something to the participants in this study, and that was reflected in the variances found. Less in the variances between versions and more in the preferences toward how groups felt they should score certain aspects of the texts, writing elements versus content elements.

The benefit of the tightly controlled case study is that these results should be reproducible in the future, and that should allow future studies to build upon the findings within this study. However, the tightly constructed manner of the study also meant that the groups within this environment might not react the same in a more open system. In a

"traditional" wiki akin to that of Wikipedia or that of *A Million Penguins* the interaction of personalities and egos might alter these findings more than in this study. Additionally, further study needs to be done into how individuals select their role within a wiki. In this case study, participants chose to be a writer, editor, or reviewer, but could not change roles. In many wikis such roles are fluid, allowing a person to change from writer to editor to reviewer depending on what type of actions the person decides to take on that given day.

In this way, the limited roles of this study most closely mimic traditional writing where interactivity has been limited by the medium. This could make wikis useful tools for writing centers since the wiki seemed quite capable of mimicking traditional writing but offered the added benefit of tracking all versions of a text and allowing multiple role-players to interact simultaneously. Much as Gunther Kress championed using a mode of language and literacy that best fits a purpose of literacy, this study sought to make the wiki fit a purpose, not an ideology (Kress, 2003, p. 51). In so doing, I hoped this study would not only illustrated tendencies among role-players in a writing community, but illustrated how a project might fit both empirical and humanistic modes of understanding.

The importance of this should be the ability to allow active interaction among the role-players. This thesis demonstrated how a wiki can provide a narrative and empirical feedback mechanism to otherwise silent role-players, such as readers or listeners within a community by allowing them to engage with the content produced by others. This interaction can be tracked by allowing the silent partners to rate their interactions, but also by being open to record their stories concerning that interaction as part of the

process. The sheer volume at which reviewers completed surveys by comparison to writers and editors suggest the potential systemic interest in such ratings.

In his article, *E-Communities, Community Knowledge, and Knowledge Management*, A. Neelameghan (2006, p. 22) discussed how the folklore and community narratives of local peoples across the globes function as organic knowledge bases. If we can think of our collective history in such a manner then understanding how we perform in a system that collects and preserves knowledge in a similar manner and using similar roles to these organic knowledge bases could help us understand how we perceive information. In this way wikis can be used to mimic cultural modes of storytelling as well as preserve them. So long as we are willing to adapt the technology to fit our narrative needs.

While this case study's wiki was a closed system, it still created and preserved the narratives of those who participated, and by recording how they perceived that interaction, this paper hopefully better illustrated tendencies in how authorial bias shapes perceptions depending on one's role. In this case, the role of editor seemed privileged beyond all others, but editors and reviewers also were quick to highlight the importance of origination and originality within a textual system.

The next step might include expanding these studies to more open systems with similar rating mechanism and determine if the ability to move between roles affects the level of bias—and whether perception of bias affects which roles are chosen. The ability to judge how and why people move between roles seems well suited to this type of wiki

environment given the feedback mechanisms available. This might also encourage more active participation among writers in future studies.

On the matter of bias, the results indicated that collaboration in this form strongly empowered and favored the editor role. Because all role players viewed the editor version as the superior version, including the blind review, this did lessen some of the authority of the writer. Particularly since all groups saw the editor version as both better written and no less original than the writer version. This could result in significant loss of empowerment for originator/writer roles by lessening their importance in the final text if editors can improve the writing without causing any loss in narrative value. This study did not indicate that editors significantly improved narrative content. However, the study did leave some uncertainty regarding narrative content, as it remained questionable whether any editor took significant liberties with the content of the texts to noticeably alter the narrative aspects. It was possible that no change in Originality scores reflected an unwillingness by editors to make significant narrative alterations.

Yet, I still believe this type of collaboration could lessen the importance of writer agency because many modern writers favor clarity of style and accessibility to pushing boundaries of originality. These results would most impact collaborative authorship in spaces that favor clean style and clarity of form, like newspapers, mainstream book presses, and screenwriting. Frankly, these results suggest that the only type of writing that might maintain the old bias for the sole author would be writing of expertise because the content in those cases might manage to remain more important than the ease of reading and accessibility.

APPENDIX A

Entrance Survey

Age:

Gender:

How often do you write for 30 minutes more (Mark One):

Daily☐; Weekly☐; Monthly☐; Annually☐; Never☐

Writing Experience (Mark All That Apply):

Published Writer☐; Regularly Published Writer☐; Professional Writer☐; Recreational

Writer☐; Editor☐; Reading Only☐; Other_____☐

Highest Education Level:

High School☐; Some College☐; Bachelor's Degree☐; Master's Degree☐;

Professional Degree☐

Have you contributed to a wiki before?

Yes☐; No☐

If you have edited a wiki, how would you rate your experience:

Edited Rarely☐; Edited Occasionally☐; Edited Frequently☐; Never Edited, But Read

One☐; Never Used or Read☐

When considering the following types of text, please rate the importance of these qualities to you on a scale of 1-5 (1 being of lowest importance to you and to 5 being of highest importance to you).

Narrative (Short Stories, Novels, and Memoirs)

Cohesiveness—how consistent the text is:

Originality—how fresh the text is:

Readability—how easy the text is to read:

Style—how compelling the actual writing of the text is:

Personal Value—how much the text speaks to you personally:

Technical Documents (Instructions, Memos, and Business Documents)

Cohesiveness—how consistent the text is:

Originality—how fresh the text is:

Readability—how easy the text is to understand:

Style—how good the actual writing of the text is:

Personal Value—how much the text speaks to you personally:

Prose (Movie Reviews, Scholastics Essays, and Opinion Columns)

Cohesiveness—how consistent the text is:

Originality—how fresh the text is:

Readability—how easy the text is to read:

Style—how compelling the actual writing of the text is:

Personal Value—how much the text speaks to you personally:

I am interested in joining the following case study groups (Select All That Apply):

A Writer ☐

An Editor ☐

A Reviewer ☐

Exit Survey

Which article in the case study did you like best?

What about the article above made it your favorite?

What aspects of the wiki did you like best?

What aspects of the wiki did you like least?

How much time did you spend on the wiki each week? Total?

When considering the following types of text, please rate the importance of these qualities to you on a scale of 1-5 (1 being of lowest importance to you and to 5 being of highest importance to you).

Narrative (Short Stories, Novels, and Memoirs)

Cohesiveness—how consistent the text is: ☐

Originality—how fresh the text is: ☐

Readability—how easy the text is to understand: ☐

Style—how good the actual writing of the text is: ☐

Personal Value—how much the text speaks to you personally: ☐

Technical Documents (Instructions, Memos, and Business Documents)

Cohesiveness—how consistent the text is: ☐

Originality—how fresh the text is: ☐

Readability—how easy the text is to understand: ☐

Style—how good the actual writing of the text is: ☐

Personal Value—how much the text speaks to you personally: ☐

Essays (Movie Reviews, Scholastics Essays, and Opinion Columns)

Cohesiveness—how consistent the text is:

Originality—how fresh the text is:

Readability—how easy the text is to understand:

Style—how good the actual writing of the text is:

Personal Value—how much the text speaks to you personally:

Weekly Survey Sample:

CONSENT FORM

"Productive Wikis: A Case Study on Collaborative Writing"

You are invited to be in a research study concerning how people write together in wikis. You were selected as a possible participant because of your experience in group writing and/or educational background. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Michael R. Trice a Graduate Student in the English Department at Texas State University—San Marcos.

Background Information

This study takes a specific look at how people use and evaluate the writing process in a controlled wiki setting.

Procedures:

If you agree to be in this study, we would ask you to do the following things:

You will be asked to participate as a member of one of the following three groups for a five-week case study. Each week will require at least 20 minutes of your time, though you are free to spend as much time as you like participating in your group's functions beyond this. At the beginning of the case study you will receive a username, to help protect anonymity as well as to access the site, and password and a link to the website.

The three groups:

Writers:

You will submit two pieces of writing at the start of the case study. Each piece should be between 500-2,000 words in length. The text may be fiction, memoir, non-narrative prose (movie review, critical scholarship, opinion piece), instructions, or a business document. The only request is that the submitted text not involve journalism due to concerns of fact checking. These need not be pieces written specifically for this project, but they do need to be texts fully owned by the submitter, and, for time and accuracy considerations, meet the minimum and maximum word count limits.

Each week three texts will be selected, each from a different writer, and placed into the wiki. You can edit your copy for one week and editors will edit another copy during that same time.

At the end of the week, each writer will rate all versions of the articles based on five characteristics.

Editors:

Each week you will access three versions of the text. You may edit and change these versions as much as you wish and see fit during the course of each week. At the end of the week, you rate the editors' and writers' articles based on five characteristics.

This process will repeat five times for a total of five weeks and 15 articles.

Reviewers:

At the end of each of the five weeks, you will rate all articles for that week on five characteristics. You will not have any access to edit the articles.

Risks and Benefits of being in the Study

The risks of this project potentially affect writers, editors, and reviewers. Writers who submit to this case study will be making their works available to others. The site will only be accessible to those who have agreed to participate in the study, but any posting of work in a digital format opens certain risks of exposure. Writers should be aware of the risks and make certain they are comfortable having their work used in such a way. And the risks of anger or embarrassment from comments or edits others make.

Editors also should know that their role involves engagement with other editors and writers. Community discourse via the articles being written might result in various levels of psychological engagement. While the community is encouraged to behave civilly, part of the research involves examining how the community itself decides what to write and edit. This does open certain risks of emotional or psychological strain as part of the natural process of editing in an open wiki environment.

This case study cannot mitigate the intellectual rights or copyright of any participant, thus all writing contributions provided within the case study remain the property of the contributor. Some of these samples may be used within the research project itself by consent to the case study, though this does not waive any rights of ownership for any contributing writer.

Additionally, writers, editors, and reviewers will be exposed to the writing content of others. Certain content may affect people differently and could result in psychological or emotional strain.

The case study provides the following potential benefits to those involved. Editors and writers alike may benefit from learning how certain collaborative environments function. It is possible that feedback concerning elements of writing and style may be received in this community that will benefit the participants beyond the study.

Additionally, all involved will be allowed to read the work of a variety of writers.

Compensation:

No compensation is provided for this case study.

Confidentiality:

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to the records. All databases used for the wiki will remain in the secured possession of the researchers.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with the Texas State University—San Marcos or with any other associated institution or organization. If you decide to participate, you are free to not answer any question or withdraw at any time with out affecting those relationships.

Contacts and Questions:

The researcher conducting this study is: Michael R. Trice. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him: 2011 Lantana Dr, Round Rock, TX 78664, 512.422.4806, mt1225@txstate.edu. You may contact the thesis chair for this project, Dr. Deborah Morton at: 512.245.3731, dm45@txstate.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), **you are encouraged** to contact the IRB chair, Dr. Jon Lasser (512-245-3413 – lasser@txstate.edu), or to Ms. Becky Northcut, Compliance Specialist (512-245-2102).

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature:_____

Date: _____

Signature of Investigator:_____

Date: _____

LITERATURE CITED

Allen, N., Atkinson, D., Morgan, M., Moore. T., & Snow, C. (1987). What Experienced Collaborators Say About Collaborative Writing. *Journal of Business and Technical Communication*, 70-90.

Asante, M. (1987). *The Afrocentric Idea.* Philadelphia: Temple University Press.

Augustine, S. (2000, July 12). *On Christian Doctrine.* Retrieved May 4, 2008, from Gerald W. Schlabach: http://personal2.stthomas.edu/gwschlabach/docs/xndoct.htm

Baugh, A. C., & Cable, T. (2002). *A History of the English Language.* Upper Saddle River, New Jersey: Pearson Education, Inc.

Bolter, J. D. (2001). *Writing Space.* Mahwah: Lawrence Erlbaum Associates, Inc.

Britannica. (2006). *Fatally Flawed.* Retrieved September 12, 2008, from Britannica.com: corporate.britannica.com/britannica_nature_response.pdf

Burke, K. (1966). *Language as Symbolic Action.* Berkeley: University of California Press.

Bush, V. (1945). As We May Think. *The Atlantic.* Retrieved September 24, 2008, from The Atlantic: http://www.theatlantic.com/doc/194507/bush

Cicero, M. T. (2006, July 6). *De Oratore.* Retrieved April 17, 2008, from Google Books: http://books.google.com/books?id=_y0BAAAAMAAJ&printsec=frontcover&dq=cicero+de+oratore

Foucault, M. (1989). *Archaeology of Knowledge.* Oxon: Routledge.

Giles, J. (2005). Online Encyclopedias go head to head. *Nature*, 900-901.

Kress, G. (2003). *Literacy in the New Media Age.* London: Routledge.

Locke, J. (2007, May 16). *An Essay Concerning Human Understanding.* Retrieved May 6, 2008, from Google Books: http://books.google.com/books?id=cjYIAAAAQAAJ&dq=locke+an+essay+on+human+understanding&pg=PP1&ots=BJNCFmRyEH&sig=D3lT_D3Zy48xEZifNhJ-JhOq7Fs&hl=en&prev=http://www.google.com/search%3Fq%3Dlocke%2Ban%2Bessay%2Bon%2Bhuman%2Bunderstanding%26rls%3Dcom.microsof

Manovich, L. (2003). Introduction: New Media from Borges to HTML. *The New Media Reader* (pp. 13-28). Cambridge, MA: The MIT Press.

Mason, B. (2007). *A Million Penguins (analysis).* Retrieved 5 23, 2008, from http://www.creativewritingandnewmedia.com/: http://www.creativewritingandnewmedia.com/

McMilan, S. (2000). The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web. *Journalism & Mass Communication Quarterly*, 80-98.

Neelameghan, A. (2006, January). E-Communities, Community Knowledge, and Knowledge Management. *International Journal for Technical Communication*, 21-27.

Perkins, J. M., & Blyer, N. (1999). *Narrative and Professional Communication.* Stamford, Connecticut: Alblex Publishing Corporation.

Rutter, R. (1991). History, Rhetoric, and Humanism: Toward a More Comprehensive Definition of Technical Communication. *Journal of Technical Writing and Communication 21.2*, 133-53.

Slack, J. D., Miller, D. J., & Doak, J. (1993). The Technical Communicator as Author: Meaning, Power, Authority. *Journal of Business nad Technical Communication 7.1*, 12-36.

Sullivan, D. L. (1990). Political-Ethical Implications of Defining Technical Communication as a Practice. *Journal of Advanced Composition*, pp. 375-86.

Tapscott, D., & Williams, A. D. (2006). *Wikinomics: How Mass Collaboration Changes Everything.* New York: Portfolio.

Voloshinov, V. N. (1973). *Marxism and the Philosophy of Language.* Cambridge: Harvard University Press.

VITA

Born in Ft. Worth, Texas in 1976, Michael Trice completed high school at Springtown, ISD. He completed his B.A. in English with a minor in Classical Civilization at the University of Texas in Austin in 2003. After working for such companies as Apple Computer, Bank One, and Hart InterCivic from 1999-2007, he returned to graduate studies at Texas State University-San Marcos in 2007. He has published articles and fiction in several magazines and Web sites and works for the online journal Kairos as an assistant editor as of 2008.

Permanent Address: 2011 Lantana Dr.

Round Rock, TX 78664

This thesis was typed by Michael R. Trice.