THE DIGITAL HUMANITIES:

Third Culture and the Democratization of the Humanities

by

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Abstract

Over half a century ago the scientist and novelist C. P. Snow described a world divided into two cultures – scientists on the one hand, literary intellectuals on the other. Both played a significant role in shaping the world, but were unable to even hold a conversation (Snow 1971). This dissertation brings a sociological perspective to this divide (now seen as a divide between the sciences and the humanities) and hope for reconciliation, as it has been revisited in the more technologically saturated environment of the twenty-first century. The digital humanities combines computer science and the humanities and its impact on the humanities has been called "game changing" (Bobley 2008). Just as technology has revolutionized science, in fields such as astronomy or neuroscience for example, by allowing scientists to see and analyze objects and patterns they could not before, digitization allows humanities scholars to ask questions, and find answers, that were not possible in the past (Katz 2005; Kirschenbaum 2010; Kornbluh 2008). The digital humanities also promises to expand the reach of the humanities in terms of what is studied, who is able to participate, and who has access. This dissertation argues that the digital humanities is leading to the democratization of the humanities by expanding *access to* and *participation in* the humanities. In addition, although there are still divides between the two cultures, the digital humanities is a place where a third culture is fostered, as digital humanists are increasingly becoming experts in both the humanities and computing. Three case studies are examined: the Centre for History and New Media at George Mason University, The Orlando Project, a joint project between the University of Alberta and Guelph University, and the Electronic Arts Game Innovation Lab at the University of Southern California.

Acknowledgments

I would like to thank my supervisor, Vincent Mosco for his support, intellectual rigor, and guidance through this dissertation. Before I had even thought about applying to the PhD program, I picked up his book *The Digital Sublime* (2004) at Octopus books in Ottawa, Ontario on a whim, because I liked the cover and I liked the title. I am very glad I did; it changed the course of my life. After reading it I decided to apply to Queen's, in the hopes that Dr. Mosco would be my supervisor. I would like to thank him for taking on a journalist as his student, and helping me put theory to my vague notions about the world. I think often about one of the things he said during my first days at Queen's – and I paraphrase here – theory is not something separate from the world, it is the world. He is a genuine public intellectual and I deeply admire his ability to keep things complex, yet straightforward at the same time.

I would also like to thank the other members of my committee, Annette Burfoot and Dia Da Costa for pushing me intellectually down paths that I had not thought of. Both helped me immensely. Thank you to the examiners Leslie Regan Shade from Concordia University, Jonathan Rose from Queen's University, and Rob Beamish, Head of the Sociology Department, for their thoughtful questions and observations. Thank you, as well, to Blaine Allan, Queen's University, for his thoughtful comments on my dissertation proposal.

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Chapter One

Introduction

On a spring afternoon in 1959, C. P. Snow made his way into Rede College at Cambridge University. The lecture he was about to deliver would paint a picture of society divided into two cultures – two cultures that did not share a common language and were marred by incomprehension, distrust and at times outright hostility (Snow 1998). On the one side were scientists, on the other what he called literary intellectuals. These two cultures were divided by "a gulf of mutual incomprehension – sometimes…hostility and dislike, but most of all lack of understanding" (Snow 1971: 15). This divide, he said, was devastating for society that needed to draw on the strengths of both. Later, Snow would describe his vision for what he called a *third culture*, a culture in which scientists and literary intellectuals would be on speaking terms and engaged in an exchange of knowledge that would be to everyone's benefit (Snow 1971). Snow's depiction of the two cultures was by no means a new idea, but his timing was right. His speech tapped into the zeitgeist of the time and has had a lasting influence. In the fifty years since, Snow's ideas have continued to resonate both in academia and in popular culture. His depiction of the two cultures has persisted into the present day, and is now generally seen as a divide between the sciences and the humanities (Ashman and Baringer 2001; Labinger and Collins 2001; Lee and Wallerstein 2004). This divide is pervasive. For instance, it is common for students going into post-secondary education to be streamed into one field or the other. However, as Snow did, the case is still being made that people need to be able to operate in both cultures (or at least have an

understanding of them) in order to address the pressing social, economic, political and scientific questions that shape our world (Davidson 2003).

This thesis is a story of one attempt at bringing together the arts and the sciences in one field. In the technologically saturated environment of the 21st century, the digital humanities has emerged as a place where computer science and the humanities merge, bringing together technology and the arts, as well as the often-competing interests of commerce and culture. This merger, I propose, can be seen as a form of third culture, one that Snow had hoped for. However, that said, it can be difficult to pin down what exactly digital humanists do. They come from diverse disciplines across the humanities. They can be found in history departments, literature departments and the classics. They are also found in philosophy, art, archeology and religion. Digital humanities is sometimes referred to as an "umbrella term," (Bobley 2008: para 5) because it encompasses so many different fields and practices. In addition, what counts as 'humanities' in the digital humanities is not restricted to fields that are typically found in the traditional humanities, such as philosophy and literature, but includes areas that one might want to categorize as social sciences, or belonging somewhere in communication studies, information studies, media studies, or film. The digital humanities also embraces a wide array of practices, including the digitization of text, textual analysis, data mining, visualization techniques and even gaming. What unifies the digital humanities is that whatever the discipline and whatever the practice, digital humanists are attempting to harness the power of computer science and digital technology to expand and diversify the humanities. When I refer to the digital humanities as third culture, I am referring to the field, but also to the people involved in the digital humanities. This research examines the digital humanities as a

field in which third culture exists, in that it looks at how the two cultures come together through commons goals, assumptions and purposes, as well where there is disharmony. Subsumed in this, however, is that digital humanists themselves, to varying degrees, embody third culture. Although Snow was not precise in his definition of third culture (which is part of the reason so many after him have taken on the term and attempted to define it), what is clear is that, along with fostering an environment in which the two cultures could be on speaking terms, he was also concerned with cultivating people who were able to bridge the divide. (Chapter Three will go into more detail about the different ways third culture has, and is being, interpreted.)

Digital humanists envision that digitization and computing science will allow humanists to ask and answer questions about the human experience that were not possible before (Bobley 2008). In a pre-digital world humanists could only realistically study a finite number of texts or artifacts. Digitization, however, increases access to this material and also changes how it can be studied. First, when texts and artifacts are digitized scholars can easily access them, regardless of geography. Instead of studying a few artifacts, the digital humanist has much more to work with. Second, thanks to computing technology, digital humanists can query these large quantities of data in ways that have the potential to dramatically change the kind of scholarship that is produced (Bobley 2008; Kornbluh 2008; Schreibman, Siemens and Unsworth 2004; VandeCreek 2007). For example, recently digital humanists have been mining the digital archives of the "Proceedings" – the records of trials that took place at Old Bailey, the main criminal court of London, between 1674 and 1913 (Cohen 2011: para 1). This archive contains information on nearly 198,000 trials. Tim Hitchcock, an historian at the University of

Hertfordshire, argues that the ability to digitally analyze this online archive will rework "the history of the criminal trial" (Cohen 2011: para 4), by enabling scholars to do more thorough research. In pre-digital times, historians using this record were forced to "cherry-pick anecdotes" (Cohen 2011: para 4) through necessity (it was, in all practicality, impossible for a researcher to consider all the text in the Proceedings) and make historical judgments based on a limited amount of data. Hitchcock and a Canadian scholar, William J. Turkel from the University of Western Ontario, are using software to search the entire archive for patterns and have noticed a trend that they think will significantly change how historians describe the history of criminal trials. Most conventional histories that consider the development of the court system in England and colonial America cite the mid 1700's as the most significant turning point; this is the point where the modern adversarial system – defense lawyers facing prosecutors in court – became common (Cohen 2011: para 5). However, their analysis of the Proceedings has turned up another significant change. Beginning in 1825 they have found that the number of guilty pleas and very short trials increases unusually. Before this time most accused would declare themselves innocent and undergo a full, lengthy trial. By 1850, however, the numbers change significantly – one-third of all the cases at Old Bailey were guilty pleas. What was happening is that trials, with their uncertain outcomes, were gradually crowded out by a system in which defendants pleaded guilty outside of the courtroom, preferring to plea bargain for a lesser sentence (Cohen 2011: para 4). Hitchcock and Turkel contend that their findings show that the "real moment of evolution" in the modern court system was not the adversarial system, but this moment in the early nineteenth century when plea bargains began to result in more convictions and a

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"defendant's experience of the criminal justice system changed radically" (Cohen 2011: para 6), in that it was more likely that they would be found guilty.

As another example of data mining, Lancashire and Hirst (2009) have analyzed the writing of Agatha Christie who, although not officially diagnosed, was believed to have suffered from dementia later in life. Based on findings that show that indefinite word use and word repetition occur at greater frequencies in Alzheimer's patients, they found that as Christie aged her vocabulary declined in richness, while her use of repetition and indefinite words increased. These findings are interesting to literary scholars, but may also have some use for medicine. Although most people are not authors with a body of work ready to be analyzed, the hope is that as people increasingly archive their personal textual digital records (in the form of digital communication such as email) one day automated textual analysis may be used in the early diagnosis of Alzheimer's.

As these cases exemplify, one of the prevalent themes that runs through the digital humanities, is that scholars will be able to do things on a scale never before possible. The new questions that can be asked are often related to mining vast amounts of data, rather than engaging in close readings of a limited amount of text, or studying a limited amount of objects. In this way the digital humanities is seen as breathing new life into the humanities that are often painted as flagging or in crisis in academia, suffering from a lack of funding and an inability to articulate their relevance (Burnard 1999; Harpham 2005, 2011; Mathae and Birzer 2004).[1] The digital humanities also purports to change the

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[1] The focus of this research is on how the humanities change with the integration of computer science and digital technology. As will be shown in the first case study in particular, several of the interviewees who come from a computing science background are interested in the digital humanities because they enjoy tackling the kinds of questions humanists are interested in. However, the focus of this study is not specifically on how

humanities by encouraging collaboration between the arts and the sciences, and among humanities disciplines themselves (Miall 1990a; Siemens 2009). Disciplines in the humanities (such as history, literature and the classics) are often painted in an unflattering light as individualistic and secretive, where scholars work alone and carefully guard their work lest anyone steal their ideas, and take away academic prestige that comes along with breaking new ground. The digital humanities, by contrast, is painted as a place where information is shared, distributed, and collaboration is invited. The result, those who champion the digital humanities propose, is more fruitful, creative and, by extension, relevant scholarship. In addition, the digital humanities not only reaches out to others in academia, but also to people outside of academia, encouraging more people to participate both as creators and consumers of the human record (Borgman 2007; Siemens 2009).

Building on these ideas, this research asks whether the digital humanities is leading to the democratization of the humanities, both in terms of increasing the possibility of who can contribute to the humanities and who can have access. Using three cases, this research will look at how digital humanists are attempting to change the scope of the humanities disciplines they are dealing with; how they are attempting to reach beyond their particular discipline's usual methods and scope. For instance, before material was digitized, unless a scholar lived close to a library or archive that housed the material they were interested in, they would have to travel. In this way, certain scholarship was only possible for those who had the means and the ability to travel. Even if a scholar did live close to a library or archive, often libraries have restricted access. Online access means those who would find it difficult, if not impossible to have access to

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the digital humanities is changing computer science. As will be detailed in the conclusion, this is an area where there is an opportunity for further research.

primary or secondary sources, now have more opportunity. As Cohen and Rosenzweig (2005) write:

> Online accessibility means…that the documentary record of the past is open to people who rarely had entry before. The analog Library of Congress has never welcomed high school students — its reading rooms, no less its special collections, routinely turn them away. Now the library's American Memory website allows high school students to enter the virtual archive on the same terms of access as the most senior historian or member of Congress. To those who previously had no easy access, online archives open locked doors. (para 13)

They go on to explain that even for those who have not had restricted access, digitization allows them to access material quickly and easy, without the expense of travel.

Using a political economic framework that emphasizes an analysis of the social relations, particularly the power relations, at play (Mosco 2009), this research examines how digital humanities projects are conceived and brought to fruition. It points a lens both outward and inward. Outward to look at how the digital humanities aims to change humanities research, whether projects reach out to people beyond academia, and the influence of funding and commercialism; inward at the relationships and hierarchies that are at play within the digital humanities, in particular how the two cultures collide and merge.

Sociology, as the study of "society or social relations" (Calhoun, Rojek and Turner 2005: 1) has a long history of using both a micro and macro lens to look closely at the interactions between people, and more widely at larger social structures in which these interactions are embedded (Turner 2005: 407). However, many believe taking an either/or approach to macro or micro sociological analysis is limiting and simply does not take into account the complexities of social life (see for example Blau 2004; Fuller 2006;

Layder 2006 and Turner 2005). Rather, individuals and society are "intertwined and inextricably fused" (Layder 2006: 143-4). In this vein, this research follows in the sociological tradition of C. Wright Mills who drew attention to the connections between human behavior and interaction, and larger structural and historical issues (Elwell 2006). In *The Sociological Imagination* (1959) Mills writes that every human lives out their own biography within their particular historical context, shaping their world at the same time that they are shaped by it. Similarly, this research also draws on Anthony Giddens' sociological analysis that also looks at how larger social structures are shaped by, and also shape, individuals. As Layder (2006) describes, Giddens' theory of structuration recognizes that "human beings create meaning and social reality from within social settings, and therefore social forms such as institutions and structure have no existence apart from these activities they embody" (164). By looking at several case studies of digital humanities projects, this research aims to examine the social and power relations at play within these projects, and the interconnections with larger systematic issues in the digital humanities.

The digital humanists who were interviewed in this research are all at work. They receive paychecks, or in some cases stipends, for the work they do. Although some of them have flexibility, most are expected to show up at a workplace at a certain time and put in a set number of hours. This research examines the sorts of connections these digital humanists feel they have with their work, in particular whether they feel a sense of ownership and control over what they do and what they produce. As Harper (2007) notes, the sociological study of work can be traced back – most famously – to a trilogy of theorists: Marx's description of the transformation of work under capitalism, Weber's

analysis of the dehumanizing aspects of work in bureaucracies, and Durkheim's study of the division of labor. This thesis, as will be made clear in Chapter Two, reaches back to Marx, in particular his insight into how the labor that goes into producing commodities is often hidden from the consumer. It also draws on Braverman's (1974) sociological analysis that focuses on the separation of the conception and execution of labor. As mentioned, the digital humanities requires expertise in both the humanities and computer science. This research examines how labor is divided between these two cultures and where there is overlap as the sciences and the humanities negotiate their working relationships.

The Humanities and the Digital Humanities

The humanities, loosely defined, are concerned with the study of human culture, specifically the objects and documents that humans produce (Harpham 2011). However, as Borgman (2007) points out, distinguishing the humanities from the sciences is a relatively new phenomenon. In fact, "until the late nineteenth century, all scholarly fields were considered sciences, regardless of their research methods" (150). In modern academia however, the distinction is often made between three realms: the sciences, social sciences and the humanities, with the social sciences "clustering" with either the sciences or the humanities depending on the subject matter they are dealing with. The sciences are seen as different from the humanities in that scientific research is generally data driven, while humanities research is more interpretive. (The social sciences can go either way and often both ways.) In terms of subject matter, however, the humanities encompass diverse fields of study: philosophy, literature and languages, linguistics, musicology, art, and theatre. What unifies these diverse areas, since the time of the

ancient Greeks, is that humans are "the measure of all things; of the things that exist, how they exist; of the things that do not exist, how they do not exist" (Frischer 2004 in Borgman 2007: 213). As Harpham (2005) describes, one key aspect to the humanities is "pastness," which refers to both the "practice and the object of humanistic scholarship" (23). Humanists study documents and objects produced in the past, and create work that will soon become part of the past – the historical record.

Aside from subject matter and research practices, the humanities are often described as being in "crisis," and crisis is, unfortunately, how the humanities have come to define themselves (Denley 1990; Harpham 2011; Spellmeyer 2003). Compared to the sciences, the humanities are significantly less funded and often struggle to articulate their worth outside the halls of academia (Harpham 2005; Mathae and Birzer 2004). As Patricia Meyer Spacks (2001), an English Professor who has worked at Yale and the University of Virginia puts it, ever since she can remember (and she qualifies that she goes "back a way now") "humanists have been declaring a crisis" (para 1). This crisis manifests in various forms including "declining numbers of majors in our fields, decreasing job opportunities, diminished funding, lack of respect (especially from university administrators)" (para 1). This is especially prevalent in times of economic downturn. Currently humanities scholars are feeling increasing pressure, in the face of massive budget cuts and hiring freezes, to justify their existence in an economic and political climate that has relegated their disciplines to second string (Cohen 2009; Harpham 2011). However, champions of the humanities argue that their disciplines are more relevant than ever. In a rapidly transforming techno-scientific environment, there is a need for people who can grapple with the issues raised by these changes in a reasoned,

informed and critical manner, which is exactly what the humanities teach. Science and technology cannot be developed in a vacuum; the humanities are essential to provide an ethical compass and critical eye to techno-scientific development (Harpham 2011; Miall 1990a). More broadly, the humanities teach people to better participate in society, no matter what the economic or political climate (Crawford 2005).

In the midst of this crisis, digitization is seen as something that will revive the humanities and ensure their continued relevance. Burnard (1999) goes so far as to call combining computers with the humanities a "true renaissance art, which has the potential to heal the divisive wounds currently afflicting the academy and re-establish the traditional humanities at the center of our culture rather than at its periphery" (para 4). Others (using a less romantic lens) also describe the digital humanities as creating new opportunities for floundering humanities disciplines; using computing technology to give humanists the ability to query large databases will add more scientific rigor and empirical focus to the humanities that have tended to focus on introspection. Underlying this argument is the belief that the ability to systematically analyze large quantities of data will be seen, by some, as a more valid way of creating knowledge; this will serve to ward off accusations that humanists are creating fiction through interpreting, or the close reading of, small amounts of data, rather than anything substantial (knowledge that is created through research that more closely follows the 'scientific method') (Gould 2003; Hockey 2004: Mathae and Birzer 2004). Building on this, the digital humanities will open up new discoveries about the world, discoveries on par with what science has achieved. Just as technology has revolutionized science, in astronomy or neuroscience for example, by allowing scientists to see objects and analyze patterns previously invisible,

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the digitization of vast amounts of data allows humanities scholars to ask new questions thanks to sophisticated computer analysis and the study of new objects that are "born digital" (Bobley 2008; Cole 2008; Hayles 2008; Kornbluh 2008; Schreibman et al. 2004). The possibilities have been painted as nothing less than "game changing" (Bobley 2008: para 2).

This 'game change' is a shift from studying a limited amount of material, to being able to harness the power of digital archives to uncover patterns previously invisible. As mentioned, most traditional humanists engage in some form of close reading where they study original sources, often found in archives, and go through a process "where they underline, annotate and cross-reference the text in efforts to identify and interpret authors' intentions, historical trends and linguistic evolution" (Hand 2011: 438). Digital humanists, on the other hand, are interested (in part) in what sort of knowledge can be gained by studying larger amounts of material.

In addition to changing *what* is studied in the humanities, the digital humanities will also change *how* people study. The digital humanities by its very nature requires people who are skilled in both computer science and the humanities. It is rare that all these skills can be found in one person. The result? The lone humanities scholar will be lonely no more, working instead with teams of people from different disciplines, computing science of course, but also other humanities and social science disciplines. In addition, according to enthusiasts, this sense of collaboration will spill over the walls of individual projects, infusing the broader digital humanities community with a culture of sharing in which information is disseminated freely rather than closely guarded. In this way, the digital humanities will be more akin to the sciences, fostering a culture of

collaboration that, bolstered by the power of many minds, creates new, relevant knowledge. Old hierarchies will dissolve and digital humanists will work together in teams – teams that encompass both cultures (Borgman 2007; Siemens 2009; UCLA Center for Digital Humanities 2009).

Democracy

In addition to being groundbreaking in terms of facilitating new scholarship, the digital humanities is also seen as a place where scholars are working to make the humanities more accessible (by digitizing material) and more open (by inviting people from outside academia to help build the human record) (Cohen and Rosenzweig 2005; Crane, Seales and Terras 2009; Presner and Johanson 2009). I describe this focus on access and participation as *democratizing*. As Deneen (2008) notes democracy is "one of those words affording infinite plasticity and applications" (301). Its definition varies depending on context and values. It often conjures up notions of elections, direct and indirect representation, and participation in the political process more generally (MacPhersen 1977; Saward 2003; Weale 2007). It can also refer more broadly to notions of freedom, fairness, and the equitable the distribution of power in society (Birch 2007; Mosco and McKercher 2008).

While recognizing that democracy is a complex and contested term, this thesis draws on themes that are common to most definitions of democracy – participation and access. Specifically, this thesis draws on notions of democracy that are pervasive in new media and communication theory that center largely around increasing participation in the media landscape through Web 2.0 technology, and subsequently increasing the range of accessible viewpoints and information (Flew 2008; Gillmor 2004; Hassan 2008).

Using a political economic framework as a way to examine the social and power relations at play in the digital humanities, this research sets out to examine whether the digital humanities is democratizing, in terms of increasing *access to*, and *participation in* the humanities.

Another theme that runs through the many different definitions of democracy is the dissolution of hierarchies. From the Athenian belief that every person should have a say in policy[2], to Pateman's (1970) call for a democratic workplace that eliminates the distinction between "managers" and "men," to the 21st century debate over whether journalists should make room for citizen journalists, democracy and anti-hierarchical ideals are inextricably linked. Given this, this research will also examine how work environments are structured in the digital humanities. Particular attention will be paid to how hierarchies are negotiated, reinforced and/or break down in an environment where very different skills are expected to co-exist. As mentioned, the digital humanities is often painted as distinct from the humanities in that it is built on a foundation of collaboration; a very different premise than traditional humanities scholarship in which the typical scenario often conjures up images of a lone scholar working on a single-authored monograph. By collaborating, some argue, the digital humanities operates a lot more like the sciences, where collaboration is a given rather than the exception (Bobley 2008). However, as Hayles (2009) points out, collaboration is a "fraught" and "utopian" term that we like to think "immediately implies an egalitarian workplace with equal contribution where everyone gets credit." In reality, this is not how things usually work

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[2] As will be discussed further in Chapter Two, the Athenian sense of equality of participation was severely flawed, since 'person' in this case meant a certain type of person – namely someone who was not a slave and not a woman.

and it is misleading to describe the sciences as equitable collaborations. In the sciences, Hayles says, there is a system of inequalities that is accepted, even if they are not always just.[3] This research will look at how collaborative practices are being imagined in the digital humanities, and how they are actually being put into practice.

In addition, drawing on C.P. Snow's description of the two cultures, this research looks at how the arts and the sciences merge in the digital humanities. Particular attention will be paid to whether people identify with being in one culture or the other, or whether people feel they can operate in both arenas. Some digital humanities projects require sophisticated programming skills, others are not as taxing in this area. As such, this research will look at whether projects are being developed mainly by computing science experts or by humanities experts, or whether there is overlap between the two cultures. What I propose is that many digital humanists are, as Snow would describe, people who belong to a third culture.

Finally, this research examines whether the digital humanities is actually changing humanities research more broadly. The digital humanities has been imbued with much promise (Bobley 2008; Cohen and Rosenzweig 2005; Schreibman et al. 2004) and this research aims to examine what sort of differences digital humanists are trying to make. Again, this research looks at these themes through a political economic lens. Particular attention will be paid to the social and power relations at play in order to examine whether the digital humanities is leading to the democratization of the humanities, how the two cultures are merging and whether hierarchies are being displaced. Further to this, as will be detailed more thoroughly in Chapter Two, political

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[3] For example, lab directors have their names on every paper that is produced by the lab even if they do not participate directly in the research.

economic theories of structuration (Giddens 1984; Mosco 2009) will be used to examine how the digital humanities purports to change the humanities by challenging accepted structures and practices.

The first half of this thesis will deal with the theoretical concepts that provide the foundation for this research. Chapter Two will deal in more detail with the different ways of conceiving democracy, beginning in Athens, where the word democracy was born, through the myriad of ways it has been imagined in the 20th and 21st centuries. As the definition of democracy in this research draws from new media and communication theory, special attention will be paid to the debates that have played out recently in reference to democracy and new media. As mentioned, the definition of democracy in this research hinges on the themes of access and participation. As will be shown, these are themes that run through most theories of democracy, whether or not they are actually put into practice.

Chapter Three will focus on the introduction and evolution of computing methods in the humanities. As well, this chapter will also introduce ideas of the technological and digital sublime. The promise of the digital humanities is often infused with the sublime – that computing technology will provide something new and different to the humanities, lifting them out of their tired rut. The digital humanities will bring humanists together, uniting them across disciplinary boundaries. The two cultures will come together as computing scientists and humanists, who usually occupy different territory, work together on inventive, groundbreaking scholarship. These types of promises – that encompass unity, peace and prosperity – can also be found throughout the literature on the technological and digital sublime. Throughout the centuries 'new' technology – from the

telegraph to cable television to the Internet – has been endowed with similar promises (Nye 1990, 1994; Mosco 2004). This chapter will place the digital humanities within the narrative of the sublime.

Chapter Four will deal more specifically with working toward a definition of the digital humanities. As mentioned, digital humanities is often referred to as an "umbrella term" (Bobley 2008: para 5) that encompasses varied subject matters and research practices. That said, there are unifying themes to the digital humanities. There is, of course, the primary focus on combining computing science with humanities subjects. However, beyond this skeletal definition, there are many ways of conceiving the digital humanities that run the gamut from textual analysis to game design. As well, while the digital humanities purports to change the humanities for the better – by making the humanities more diverse and interactive – there are also cautionary tales. Some warn that by digitizing material there is a risk of it being taken out of context and that it also becomes less durable. In addition, encouraging outside participation in the humanities also brings up issues of quality and how to judge expertise – is there not a role for the humanities expert in the digital humanities (Cohen and Rosenzweig 2005)?

Case Studies

The second half of this dissertation will deal with three case studies. As mentioned, the digital humanities is diverse and encompasses a wide range of disciplines and practices. There are digital humanities projects, such as Google Books, that are entirely commercial ventures. On the other end of the spectrum, it could be argued that non-profit organizations, such as small independent film houses are also working in the digital humanities. However, the bulk of people who call themselves digital humanists,

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and are recognized as such, are working within the confines of academia. Digital humanists are found spread out, in different humanities departments in universities. Digital humanities centers, labs and programs have also been springing up in universities around the world. Given that the bulk of research and activity is taking place in these environments, the case studies that have been chosen for this dissertation are all based in universities. Two are based in the United States and one in Canada. This geographical choice was made in recognition that digital humanists in these two countries often collaborate on research, publications and conferences. They also receive funding from many of the same government bodies and institutions. (The governments of Canada and the United States have set up joint funding bodies to support cross-border scholarship.) They also, to certain degrees, share a common language and understanding of how their field operates.

Further to this, the three cases that have been chosen are exemplars of different ways of conceiving of, and designing digital humanities projects. Within the academy, projects differ based on funding, access, and participation or interaction. Generally, projects receive funding from three different sources: government, private philanthropic organizations and commercial entities. The type of funding that projects receive will affect what can be accomplished. Projects also differ based on the sort of access that is envisioned. Some projects are designed to be free resources, available to anyone with an Internet connection. Others are more closed, in that they are only available through subscription or purchase. Projects also differ in terms of what sort of participation or interaction is envisioned from the audience or consumer. On one end of the spectrum are projects from which an audience is expected to gather information, without having any

input. On the other there are projects that are designed with audience interaction and participation at their core. The cases that have been chosen all exemplify different ways of handling these three themes.[4] The cases have also been chosen because they are seen as leaders in their fields, recognized by their peers and by government funding bodies as projects that are advancing knowledge and breaking new ground. However, they have very different ways of conceiving what they do, what they are and how they go about bringing their projects to fruition. The choice of case studies has also been made for what Stake (2000) would call both "intrinsic" and "instrumental" reasons. First, they have been chosen because of an intrinsic interest in each case; individually they all illustrate the complexities of bringing together the two cultures in an effort to make significant changes to humanities research. Second, there are instrumental reasons for choosing these cases; they will be used to draw out larger themes of democratization and power that are at play in digital humanities environments.

Chapter Five will introduce the Center for History and New Media at George Mason University in Fairfax Virginia. About a half hour commute from Washington DC, it is located in an area deeply ensconced in the history of the United States. That makes it an appropriate place, perhaps, for a digital humanities center concerned with capturing the history of the American people. The public historian, Roy Rosenzweig, founded the center. Rosenzweig dedicated his scholarly life to recording the voices of people

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[4] When a researcher makes decisions about research methods there are always limitations to the research design. With case studies one common concern is a lack of rigor due to a researcher's subjective decisions (Berg 2007; Yin 2009). It cannot be denied that subjective choices are part of choosing case studies. As Stake (2000) describes, these choices begin with the actual selection of the case studies and continue up until the final hours of writing up findings. This should not dissuade researchers from this type of study, but rather serve as a reminder that the reasons for choices should be clearly articulated, so that the reader is aware of the decisions that were made and the criteria used.

normally left out of the history books – the working class, the poor, the marginalized. He had always been interested in using new technology to capture these voices. When he founded the center in the 1990's, he was working with CD Roms, the technology of the day. Even though Rosenzweig passed away in 2007, his vision lives on in the center that has now traded its CD Roms for digital technology and Web 2.0 applications. The center's mission statement is to "incorporate multiple voices, reach diverse audiences and encourage popular presentation in presenting and preserving the past" (Center for History and New Media, n.d.). The aim is to "democratize" history by reaching beyond the boundaries of traditional history books and opening up the historical record to more people (Center for History and New Media, n.d.). People at the center are attempting to do this in several ways. First, they are creating user-friendly tools to make it easy for people to publish their own history on the Internet, documenting their own stories both through text and visuals. Second, they are creating digital history sites that feature the voices of marginalized, or unheard people. For instance, they have created sites dedicated to capturing the stories of people displaced by Hurricanes Rita and Katrina. These sites are designed to be easily accessible and to solicit input from people directly involved. (They solicit online input – providing space for people to upload their own stories, pictures, and video – but they have also made efforts to collect people's stories 'offline', by distributing postcards (postage paid) for people to record their stories and setting up a toll-free phone line for people who are not literate, or are more comfortable talking than writing.) The goal is to spread the making of history out beyond the boundaries of libraries and academia, and to involve more people in creating the public historical record. In addition, the center is also attempting to change historical research by creating

a research tool that, it is hoped, will help researchers forge new paths in the processing of data. It has generally been acknowledged that the digital humanities has been very good, to date, at digitizing material (transferring large amounts of data from print to electronic form), but what it has not been as good at is creating ways to mine and use this data to create new scholarship (Bobley 2008). People at the center hope that one tool in particular that they are making – Zotero – will go some way to remedying this.

This case is one that exemplifies digital humanities projects that are attempting to increase public participation in the humanities process. People at the center are involved in creating online tools that will allow people to tell their own history. In particular their focus is on creating websites that people can easily use to upload pictures, text and video. These websites are 'shells', in the sense that they are 'empty' and need to be 'filled up' with content. At the same time, they are also trying to increase access to historical work by digitizing material and making it freely available. For instance, they are involved in a large project that consists of digitizing papers from the American Civil War. They are also involved in creating historical websites that capture the voices of people who are often ignored in typical historical textbooks. The center is also an example of a digital humanities project that is focused on creating open source material. The material they create is free, and they also solicit input into creating source code for their tools. In terms of funding, the center is one that relies a great deal on government funding as well as philanthropic organizations. The goal is not to make money from the projects they are creating, rather to create free tools and free information.

The second case study is The Orlando Project: A History of Women's Writing in the British Isles. Chapter Six describes this joint venture between researchers at the

University of Alberta and researchers at the University of Guelph. The goal of this project is to digitize biographical information about women writers who have connections to the British Isles, but also provide contextual material on their lives from other areas such as politics, medicine and writing by men. This archive is described as being dynamic as opposed to static; they have developed a search engine that allows researchers to look for connections between writers. Their goal is twofold. First, to capture and aggregate the information that is available on these writers, making it more easily accessible. But in addition, they hope the search engine will enable researchers to create new scholarship that would not be possible in a static, print form. The creators hope that researchers will use this repository to find new connections between writers based on themes such as place, politics or a myriad of other social, economic and political factors. One of their primary goals is to shine a light on women writers who are less well known, and in this way increase the numbers of voices that are heard in their discipline. They have designed their search engine in such a way that (if the search warrants) lesser known writers will always be made known to a researcher. This is in stark contrast to search engines such as Google, that return searches based on the popularity of a link (Halavais 2009).

Orlando is an example of a digital humanities project that is focused on increasing access to humanities material. It is a closed system, however, in that it does not invite outside participation. It is also only available by subscription. This decision was made in part to cover financial costs, but also to lend credibility to the project. As will be discussed, this can bring substantial benefits to a project, but it can also be a significant

drawback in that its reach is constricted. Orlando is an example of a project that relies on government funding, but has also embraced commercial input.

The digital humanities began with a focus on the digitization of text and textual analysis (Bailey 1982; Hockey 1980). More recently digital humanists have been delving into areas such as the visualization of data, incorporating visual records more generally, and search engines that can make connections between material (Bobley 2008; Schreibman et al. 2004). (This is discussed in further detail in Chapter Three.) Some digital humanists see gaming as a relatively new area that the digital humanities can and should be moving into (interviews with Key Informants 1, 2, 3 and 4). To that end, the third case looks at the Electronic Arts Game Innovation Lab at the University of Southern California. The impetus of this lab is experimentation with the gaming form. The game designers, artists and programmers at the lab are all involved in projects that combine gaming with the humanities. They draw from literature, philosophy, art and history to create games that are experiential and educational. One of their main purposes in creating these games – aside from experimenting with traditional game formats – is to afford people another avenue to explore the humanities.

This lab has a strong connection with the commercial gaming industry. In particular, as its name suggests, with Electronic Arts, the largest gaming company in the world. The lab got its start thanks to an eight million dollar grant from this company. The lab also regularly receives funding from other sources in the gaming industry and partners with industry on projects. In addition, even though the goal of the lab is to create critical game designers and not necessarily people who will fill slots in the commercial gaming world, many students who go through the lab do end up working in the industry.

This case is an example of digital humanities projects that are tied to commercial funding. It is also an example of the digital humanities in which increasing access to humanities material is paramount, but in a different sense than most projects. While most digital work dealing with access involves making work more accessible by putting it online, the lab hopes to make its work more accessible by presenting information in a different format that will appeal to a wide audience. People who have not been able to connect with literature, art, history and philosophy through traditional avenues, may find a way to connect with this material through games. This is a closed system however, in that it does not invite participation or interaction from its intended audience in terms of input into the games. Of course, this case differs from the others in that interaction is an essential part of gaming, in that the game itself is something that demands interaction. However, in the end, the type of interaction that is possible in this case is guided and directed by the game designers.

Methodology

This study is qualitative in nature, with the goal of providing "rich descriptions" of each case (Denzin and Lincoln 2008: 16). In order to build these descriptions my research methods consisted of interviews with key informants, primary document research (including electronic documents and the projects themselves) and direct observation (Yin 2009). Research took place from October 2009 to March 2010. I visited the site of each case study. In-person interviews were done, on site, with key informants, including professors, researchers, graduate students, designers, artists and programmers. Each interview was done in the interviewee's workplace, or at a place of their choosing at their respective universities. Interviews lasted between 45 minutes to an hour. (See

Appendix A for details on methodology and a schedule of interviews.) The interviews were semi-structured, in that there were several key areas that were covered through formal questions, but each interview unfolded differently as themes that the interviewees brought up were followed. Interviewees were asked about their role on projects, workplace hierarchies, how they see their projects changing humanities research, the limitations and advantages of technology and the democratic tendencies of their projects. (See Appendix B for a complete list of questions.) As well, documents produced by each of the case studies were examined, which included papers, conference proceedings and, as mentioned, the actual digital projects. Finally, this research draws upon direct observation. Throughout the thesis I have used my observations of the interviewees' workspaces to add context and depth to the descriptions of the cases. As well, interviews were conducted with select key informants from outside these cases, who are leaders in their fields, in order to gain insight into the present landscape of the digital humanities. (See Appendix C for a complete list of questions.)

As mentioned, when a researcher makes decisions about research methods there are always limitations to the research design. One concern with case studies is relevancy – whether the case studies chosen can be generalized more widely (Berg 2007; Yin 2009). It is impossible to replicate a qualitative study in the same way that a quantitative study can be replicated, or a study that uses the scientific method. However in order to address issues of validity, I am using a mixed-methods approach (interviews, documents, observation) to secure a more in depth understanding of each case (Denzin and Lincoln 2008). Studies that rely on multiple sources of data are seen as more reliable (Yin 2009). In addressing the second critique – that findings are merely relevant to the cases that have

been selected and cannot be generalized – Berg (2007), Stake (2000), and Yin (2009) counter that case studies *can* provide an understanding about similar cases. There is value in investigating a single case, or several cases, in order to gain insight into larger systematic issues. As Taylor (2008) observes, "[c]lose, in-depth case studies…find their core strength in the ability to tell a nuanced story of actual practices and meanings of local cultures and participants," (187) but can also be used to illuminate larger processes at work.

The reader will notice that throughout this research interviewees are not identified by name. Any qualitative research that is interested in people's personal views and personal circumstances has the potential to pose a risk to the people involved. The researcher needs to be cognizant that an interviewee's answers may affect their standing in their community, employment, personal relationships, and self-esteem (Stake 2000). In this research interviewees were asked to be candid about their place of employment, and as such their names are not being used to protect their identity. As will be further detailed at the beginning of each case study, interviewees are identified based on the type of work they perform. The key informants, the digital humanists interviewed who were not part of these cases, will be identified as such.

Conclusion

As might be expected, since the digital humanities is relatively new, most of the academic research and writing in this area has been concerned with how projects have been created, and the specific ways in which projects are attempting to expand the breadth of humanities research (Schreibman et al. 2004). (This will be discussed in more detail in Chapter Four.) Other work has looked at some of the overarching goals of the

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digital humanities (Bobley 2008). The digital humanities has not been examined under a sociological or political economic lens, looking specifically at ideas of democratization and the hierarchies at play as people from the sciences and the arts come together in these environments. Borgman (2009) is adamant that digital humanists need to be studied in the same way that social scientists have studied scientists.

> Why is no one following digital humanities scholars around to understand their practices, in the way that scientists have been studied for the last several decades? This body of research has informed the design of scholarly infrastructure for the sciences, and is a central component of cyberinfrastructure and eScience initiatives. Given how rapidly scholarship in the humanities is evolving, it is fertile ground for behavioral research. The humanities community should invite more social scientists as research partners and should make themselves available as objects of study. In doing so, the community can learn more about itself and apply the lessons to the design of tools, services, policies, and infrastructure. (76)

This research hopes to make a contribution to this gap. That said, there has been a limited amount of initial research that examines the integration of humanists and computer scientists (or people with expertise in computing science) in the digital humanities (Siemens 2008, 2009; Warwick et al. 2008). However, this work has not put this collaboration in the sociological context of the two cultures, or done much detailed research that examines how social and power relations are being negotiated as people who come from these two different types of backgrounds attempt to work together. As well, if one person embodies third culture – in that they are a humanist *and* a computer scientist (or are able to operate to some degree in both realms) – where do they find themselves in the hierarchy of a digital humanities project (if there is a hierarchy)? Although the research that describes digital humanities projects does touch on how the digital humanities is attempting to change humanities research, it has not been put in the

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larger framework of structuration and agency. This dissertation aims to add something new to research in this regard, by looking at the digital humanities through the lens of political economy in order to examine what I see as reoccurring common themes that run through most incarnations of these diverse fields of study – access and participation. As I will show, these themes should be seen in terms of democratization. At its core the digital humanities is about opening up the humanities, bringing scholarship to a wider audience, and bringing more people into the fold. The goal of the digital humanities, of course, is to create new, exciting, relevant and meaningful work. But the way this will come about is by incorporating more voices into the human record and finding ways to analyze large amounts of data that, again, take into account more voices.

In preparing for this research, and when I conducted the interviews, many of the digital humanists I spoke to said they were very happy to have a sociologist interested in their work. Digital humanists feel very strongly that they are doing something different and innovative – that they are pushing scholarship in directions it has never taken before. Even though they have these convictions, many still told me that there is a need for people who are not ensconced in their particular culture to pay attention to what they are doing. In particular, they said there is a need for their work to be placed within a broader sociological context. As a researcher, I am very aware of the critique that someone who is not part of a culture cannot fully understand that culture (Denzin and Lincoln 2008). That said, I recognized this going into the research, as did the people I was talking to. I appreciate the time each interviewee gave me, and their patience in explaining to a non-digital humanist the complexities of their work. In particular, I am grateful for their candor as they took the time out from their busy schedules to reflect on the work they do.

While no one research study can claim to be the final word on a subject, I believe this research adds something important to the work being done in and on the digital humanities. It is, in its essence, a reflection on the power dynamics at play in the digital humanities, as people from very different backgrounds come together to create. It is also a reflection on how digital humanists are attempting to change the power dynamics in the humanities more generally, again, by increasing access to, and participation in, their fields of study.

Chapter Two

Theory: Democracy, Political Economy and the Two Cultures

Introduction

Enthusiasts describe the digital humanities as having the potential to radically alter the face of humanities scholarship. There is much hope imbued in this potential. Digital humanists are often characterized as changing and challenging traditional humanities scholarship in several ways (Bobley 2008; Liu 2009). First, digital humanists have been at the forefront of digitizing the print or 'offline' versions of what they study – from classical texts to artifacts. By digitizing this material digital humanists hope to increase *access* to this material and expand its reach. In pre-digital times a scholar would have to travel to a library or an archive to view the rare book or the object they were studying. In some cases they would even have to bring a letter of introduction in order to be given permission to look at the object in a controlled environment. Now it is more and more the case that, with an Internet connection, a scholar can be taken within a few seconds to the digital reproduction of the texts (or objects) they are looking for. This saves expense and time, allowing scholars to quickly and conveniently access material, skipping over barriers of time and space. The hope is, by making material more accessible, scholars will use a more diverse array of resources and the scope of humanities research will expand (Cohen and Rosenzweig 2005; Levander 2009; Nelson 2009; Stoicheff 2009). Second, many digital humanists are also attempting to increase the diversity of the humanities by making it easier for non-academics, "citizen humanists" as they are sometimes called (Davidson 2009), to digitize material, publish it on the web and add to the record of human culture. In this way digital humanists are attempting to upset

traditional hierarchies, in which established academics with accepted credentials are the experts and the only people entitled to decide what should be included in the 'humanities' (Cohen and Rosenzweig 2005; UCLA Center for Digital Humanities 2009). Third, digital humanists also hope to foster interactivity, by encouraging more people to participate in the process of creating humanities scholarship and humanities archives. Finally, and perhaps most significantly, the digital humanities purports to expand the scope of humanities scholarship by increasing the amount of digital material that is available and by creating new ways to analyze this data. This will enable scholars to ask and answer questions that were not possible in a pre-digital world. In a pre-digital world a scholar could only be expected to study a limited number of texts or artifacts. In the digital world there is the potential for scholars to use computing technology to analyze and process vast amounts of data, allowing them to make connections through a wide scope of material (Bobley 2008; Cohen and Rosenzweig 2005; Nelson 2009).[5] As mentioned, most of the work being done at the moment involves tracing patterns over textual data. For instance, Franco Moretti at Stanford University, through counting nouns, verbs and prepositions over large amounts of data, is identifying what he calls "textual fingerprints" that are unique to genres of fiction (Hand 2011: 474). Ezra Lieberman Aiden, at Harvard University, has developed a tool he calls the *n*-grams tool. He has put this piece of software to work searching through selected texts in Google Books, tracing word patterns and themes through word and phrase frequency. He says his work has proved that the Nazis systematically suppressed the mention of more artists, writers, and

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[5] These are just a few of the multitude of ways the digital humanities is seen as changing traditional humanities scholarship. These will be dealt with in more detail in Chapters Three and Four.

activists then had previously been known (Hand 2011). Other researchers are branching out beyond the textual. For instance, John Coleman from the University of Oxford, UK, has created a database of five million spoken words (which equals about three months of speech), which he is now analyzing for elements "typically ignored by linguists: neologisms, slurring and sub-verbal honks and snorts" (Hand 2011: 439). He is using this technology to learn "how conversation partners take pacing cues from each other, and how pitch of voice reflects attitude...(and) to prove that women and men talk at the same speed" (439). He says that what he is finding will mean that linguistics textbooks "are going to have to be rewritten" (439).

As will be shown throughout this research, digital humanists come from diverse backgrounds, and different projects can have very different goals. Some are working on digitizing classical texts. Others are creating search engines that will be able to mine data. Still others are developing games that will translate classic texts or historical events into interactive stories. The digital humanities is a complex beehive of activities; digital humanists are working in different fields, in different ways and often with different goals in mind. However, despite their dissimilarities, I propose that the digital humanities is united around two themes: access and participation. There are different ways of envisioning how these themes actualize, but they can be found at the heart of most projects. Access and participation, I contend, are also themes that are part of the foundation of democratic theory, in particular democratic theory that deals with new media and communication technology (see for instance Flew 2008; Jenkins and Thornburn 2003).

Building on this, the central question of this dissertation is whether the digital humanities is contributing to the democratization of the humanities in terms of increasing *access to* and *participation in* humanities research. The term democracy, however, is multi-faceted and difficult to define precisely. What is meant by democracy depends largely on context and personal values. It is often used in reference to politics and the electoral process, but it is also used more generally to indicate ideas of equality and dispersal of power (de Sousa Santos 2005; Koch and Zeddy 2009; Mosco and McKercher 2008; Ringen 2007; Saward 2003).

This research draws on this more expansive view of democracy and looks at how the digital humanities is trying to draw more people into creating the human record. It looks at how the digital humanities is attempting to make the texts and objects that humanists study more widely available in order to open up the possibilities for research; to encourage people who are not part of academia to take an active interest in the work of humanities scholars and also participate in building the human record. Digitization is seen as a way to encourage more people to participate, both as creators and consumers, in building and benefiting from our human record. The ultimate goal is to increase the range of voices that participate in the humanities, creating a more expansive, and hopefully more diverse, record of human culture. As mentioned, democratization in this case revolves around the two themes of access and participation (these themes are prevalent in the literature on digital humanities, such as: Cohen and Rosenzweig 2005; Kornbluh 2008; Schreibman et al. 2004; VandeCreek 2007). This way of thinking about democracy is also prevalent in new media and communication theory, where much of the debate about how 'new' media will change the way we live and communicate is framed in

discussions about whether new media increases the number of voices and the diversity of information available in the public sphere (Gillmor 2004; Flew 2008). However, it also has its roots in theories of participatory democracy and more recently deliberative democracy that emphasize equality and participation, not just in electoral processes, but in all avenues of social, economic and political life (Saward 2003).[6]

At the heart of democratization is the question of power – how power is dispersed, used and manipulated. Specifically whether power is in the hands of a few, or in the hands of the many and how this power can be used to effect change. In order to examine ideas of power and democracy, I will be drawing on political economic theory to show how questions of power are intimately intertwined in digital humanities projects, through their genesis, creation and goals. Political economy, with its lens trained on social and power relations (Mosco 2009; Mosco and McKercher 2008), will form the foundation from which I will look more widely at whether the digital humanities is fostering participation and access. But it will also be used to look at the internal functions of digital humanities projects. In particular, it will be used to examine the factors that influence how projects come to be in the first place (how funding influences projects, for instance), the hierarchies at play in digital humanities teams, and the sorts of work environments that are created. It is often treated as an axiom that digital humanities projects are different from other humanities disciplines because people have to work on teams, in co-operative, non-hierarchal environments (UCLA Center for Digital Humanities 2009; Schreibman et al. 2004; Siemens 2009). But are these environments

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[6] As will be addressed further on in this chapter, there are serious critiques of these conceptions of democracy. This research is not an endorsement of their use, but rather draws on the intent behind their concerns about increasing access and participation – namely more equitable, increased access and participation.

really enclaves of utopian co-operation, or do they fall into hierarchies, despite efforts to avoid this? It is at this point that political economy and the analysis of third culture meet – is the digital humanities a place of third culture or are there hierarchies that see one culture taking precedence over another? For those who embody third culture (expertise in both computer science and the humanities), are they drawn in one direction or the other, and where do they stand in the hierarchy of a digital humanities project (if there are indeed hierarchies)? Political economy is also a useful starting point from which to analyze and describe the roles that people play as Web 2.0 technology becomes more prevalent[7]; when those who might typically be thought of as 'users' or 'consumers' of

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[7] In Canada, the latest federal government statistics show that, in 2009, 75.1 per cent of Canadians accessed the Internet at home "at least once a day" (Statistics Canada n.d.a). Younger people accessed the Internet more frequently than other people. The numbers are as follows: 34 years and younger, 82.9 per cent; 35 to 54 years, 71.6 per cent; 55 to 64 years, 69.1 per cent; 65 years and older, 65.9 per cent. Statistics from the same year note that 26.7 per cent of at-home Internet users were involved in contributing content to the Internet such as "blogs, photos, discussion groups" (Statistics Canada n.d.b). Although it was not specified, it is likely that Web 2.0 technology was used to create or upload this content. Statistics are not available for at-home Internet used based on income level, but there are statistics that show Internet access from any location. Interestingly it is not the lowest quartile that reports the lowest Internet connection. People in the lowest quartile (personal income of $10,000 or less) are at 76.2 per cent; second quartile ($10,001 to $29,999), 69.9 per cent; third quartile ($30,000 to $49,999), 83.1 per cent; and fourth quartile ($50,000 and up) 92.1 per cent (Statistics Canada n.d.c). Part of the reason the lowest quarter is higher than the second may be that the statistics include people 16 and older, which would include students who may come from a wealthier household, but personally have a low-income level. No statistics are available from Canada that break down Internet use based on race and ethnicity. The latest statistics available from the United States Census bureau show that 71.06 per cent of all households have an in-house Internet connection (2.82 per cent have dial-up and 68.54 per cent have broadband connections). Within this figure however, there is considerable disparity when it comes to household incomes. The numbers are as follows: households with incomes less than $15,000, 39.58 per cent; $15,000 to $24,999, 52.61 per cent; $25,000 to $34,999, 63.27 per cent; $35,000 to $49,999, 77.88 per cent; $50,000 to $74,999, 87.14 per cent; 75,000 to $99 999, 93.83 per cent; $100,000 to $149,000, 96.38 per cent; $150,000 and up, 97.99 per cent (U.S. Census Bureau 2011a). There is also disparity when it comes to the race and ethnicity of the householder surveyed. The

digital products are increasingly becoming involved in creating these products, taking on a more interactive role. Much of the technology being developed and used in the digital humanities is targeted towards increasing participation from the audience, or the consumer, which blurs the boundaries between creators and consumers in the digital humanities. Political economy, with its focus on social relations and power (Mosco 2009), gives the researcher a framework from which to closely examine these complicated relationships, while at the same time not losing sight of larger issues of power that are always at play in society; in terms of the digital humanities these larger issues include things such as funding and the accepted traditions of humanities scholarship, which, as with customs that are deeply ingrained, can be difficult to change.

Throughout this dissertation I am also looking at how the two cultures – the arts and the sciences – come together in the digital humanities. In this case, 'the sciences' refers specifically to computer science, and 'the arts' to a myriad of humanities disciplines, such as literature, history and philosophy. This reading of the two cultures draws on C. P. Snow's famous Rede lecture that he gave at Cambridge University in 1959. Although this was by no means the first time people had theorized about a divide between the arts and the sciences, Snow's speech resonated with the times and since then most references to the two cultures debate acknowledge Snow. Snow himself was a scientist and an author. Drawing on his own experience, and larger debates in society, he

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statistics are as follows: White, 74.86 per cent; Black, 57.83 per cent; American Indian/Alaskan native, 56.82 per cent; Asian, 82.77 per cent; Hispanic, 59.11 per cent. In terms of Web 2.0 technology, surveys from May of 2011 found that 43 per cent of Internet users were using social networking sites, 4 per cent were creating their own blogs or online journals, and 11 percent were categorizing or tagging online content (U.S. Census Bureau 2011b).

described a world divided in two: scientists on the one hand and on the other, literary theorists. Both, he said, played a huge part in determining the direction of the world, but could not – or would not – speak the same language. This, he said, was to everyone's detriment. When he made the original speech he was referring specifically to natural scientists. However, a few years later, in a revision of this speech, he did not draw a line between science and technology.

> The more I have seen of technologists at work, the more untenable the distinction has come to look. If you actually see someone design an aircraft, you find him going through the same experience – aesthetic, intellectual, moral – as though he were setting up an experiment in particle physics. (Snow 1971: 56)

Given that Snow saw technology and engineering as part of the sciences, in this research I have identified computer science as one culture. Computer science is also housed in the sciences in universities, and further to this is generally thought of as a science in popular culture. In 1959 Snow was referring specifically to literary scholars, but since this time the two cultures debate has come to be seen as a division between the arts and the sciences, with the arts including a great many humanities disciplines under its banner. In keeping with this current trend, the other culture in this research refers to the humanities.[8]

This chapter addresses the history and present articulation of the two cultures debate, in order to add context to the case studies that follow. It will also expand on how political economic theory will be used in this dissertation. It begins however, by exploring some of the history of the term democracy, concentrating on the origin of the term and how it has been used in the twentieth century.

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[8] Chapter Three will deal in more detail with a definition of the humanities.

Democracy

When the word democracy is used, it is often in reference to a form of government or politics, in which people vote for representatives who then act in their interest, or where people vote directly for some sort of policy or action (Baker 2007; MacPherson 1977; Ringen 2007; Weale 2007). As Weale (2007) describes, public participation in policy-making through elections or voting is the baseline of democracy: "in a democracy important public decisions on questions of law and policy depend, directly or indirectly, upon public opinion formally expressed by citizens of the community, the vast bulk of whom have equal political rights" (18). The minimum requirement for a democracy is some sense that the governing powers are put in a position of power due to an electorate that can then replace this government if it is not representing their views. Implicit in this is that when a party loses an election, it willingly concedes (MacPherson 1977; Schumpeter 1942).

However, democracy is also commonly used to signify a more general social state of affairs, in which everyone has equal opportunity. The Oxford English Dictionary's (OED) definition of democracy describes these multiple uses:

> Government by the people; that form of government in which the
> sovereign power resides in the people as a whole, and is exercised either
> directly by them (as in the small republics of antiquity) or by officers
> elected by them. In modern use often more vaguely denoting a social state
> in which all have equal rights, without hereditary or arbitrary differences
> of rank or privilege; (b) A state or community in which government is
> vested in the people as a whole. ("Democracy" n.d.)

The OED definition – although a useful starting point – raises several difficult questions. Can a majority speak for all people? What happens to the rights of minorities in a democracy? Is democracy simply voting, or does equality in society need to be

addressed more pervasively before the word democracy can be used? As well, what is 'the people'? Does this refer to all of the people, or just some of the people? For example, South Africa during apartheid called itself a democracy, yet blacks were not allowed to vote. As Birch (2007) points out "[i]n practice, the answers that people give to these questions depend on their political values, so it is impossible to formulate a value-free definition of 'the people'" (111). Saward (2003) describes democracy as a signifier that has an "*unstable* nature" (2). It has multiple meanings depending on context and the people or groups involved, meanings that are not necessarily compatible. For instance, democracy can signify "a good, moral political system," "acting in the national interest," or "the voice of the people" (13). On the other hand in an electoral system that is fixed, or where there is no significant choice between political parties, democracy can signify "a deception, or a ruse, to fool people" (13). Essentially, it is impossible to point to one absolute definition of democracy (de Sousa Santos 2005; Norris 2011).

Birch (2007) describes two sources of confusion when it comes to defining what democracy means in the 20th century that stem from the fact that democracy is used on the one hand as a political term, and on the other to describe a more general state of affairs. First, as mentioned, it is often used to describe a system of government, but there are many different incarnations of such a system. Voting, elections and public participation (either direct or indirect) in forming public policy are seen as the foundations of this type of democracy. However there are many factors that can affect the degree of public participation and the actual effect of the process (de Sousa Santos 2005). (These will be discussed in more detail further in this chapter.) Second, the term has also been used to describe a set of vague social relations. America, for instance, is described

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as having " a democratic set of political institutions," but also as being a "democratic society" (Birch 2007: 110). Democracy, in this sense, refers to a society that is "without hereditary class distinctions, in which there is something approaching equality of opportunity for all citizens. The term democratic is used to indicate a degree of social equality, not a form of government" (109). This definition of democracy is more general, conjuring up broad sentiments of equality and fairness. As Ringen (2007) describes, democracy also evokes notions of freedom; a democracy enables people "to live in autonomy and security" (5) and be the masters of their own future. It is not clear though how exactly these sorts of ideals are or should be enacted. This use of democracy can be applied to many different variations of social arrangements.

However, as mentioned, despite the multiple ways of defining democracy, I argue that there are certain core principles that are invoked when the term is used – even if these principles are not, for all intents and purposes, put into practice. These principles revolve around dispersal of power and equality. The first distinctive theme that runs through the different incarnations of democracy is that, in terms of governance and decision-making, there should be some sort of means whereby decisions are arrived at if not by consensus, than through input by as many people as possible – that power should be dispersed rather than solely in the hands of a few. The second theme is more general and, as has been referred to earlier, consists of notions of equality, fairness and freedom (Christiano 2002; Saward 2003). Democracy means something more than simply being able to vote in an election, but refers in the popular imagination to a system or state of being in which people are treated equally, fairly, and have a certain degree of agency. As Mosco and McKercher (2008) describe, democracy is "socially grounded and profoundly

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broader than the act of voting" (49). Democracy needs to be seen as "the fullest possible public participation in the decisions that affect our lives" (49) – a definition that includes voting, but also extends participation into other arenas of social and economic life.

Democracy in this dissertation will draw on these themes, which are also prevalent in the more recent discussions about how new media and virtual worlds (made possible through digitization) change our social, political and even economic lives (Flew 2008; Hassan 2008). However, as mentioned, democracy has a long and complicated history. While the purpose of this research is not an historical look at the many forms of democracy that have been imagined and put in practice, I will show that the themes of participation and access can be traced back to the first uses of the term and, in particular, through its many different manifestations in the 20th and 21st century (even, again, if they are not put into practice). This section will briefly look back at the origins of democracy in Athens, but then move ahead and focus primarily on how democracy has been imagined post World War II. The purpose of this delineation is to trace how ideas of participation, fairness, access, and equality have been central to ideas of democracy, despite the multitude of ways it is imagined as playing out in practice. It will then turn to look at the role media and digitization are seen to play in the democratization of a society more generally, and in particular how Web 2.0 technology is viewed as affecting change. Finally, this section will focus on how the digital humanities fits into ideas of democratization, by fostering increased *participation in* and *access to* the humanities.

Democracy and Government

The word democracy comes to us from ancient Greece. Literally translated it means "rule by the people" (Birch 2007). The Athenian assembly would meet regularly

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to vote on matters such as "war and peace, finance, public works and legislation" (Weale 2007: 37). The assembly met about 40 times a year and all citizens were able to discuss and debate issues. Decisions were made by a simple majority. As Urbinati (2006) writes: "[d]emocracy meant that each and every citizen had an equal and meaningful chance to take part in lawmaking and to address the assembly" (2). The principles behind Athenian democracy were fairness and equality of participation – that citizens should have access to the political process and the ability to participate in it. In practice, however, these principles were only in effect for a limited part of the population, which excluded slaves and women. Only adult, free males were expected to take part. As Isakhan and Stockwell (2011) point out "it is also worth remembering that the Greek city-states of antiquity functioned as slave societies and were certainly not egalitarian, inclusive or democratic to the vast majority of their inhabitants" (5). As Koch and Zeddy (2009) note "to be considered a full citizen and to be granted full political rights, one had to meet social class and material wealth standards" (38). Political power in Athens belonged to the wealthy.

The crux of the Athenian sense of democracy – in which people determine their future through voting – has remained central to more modern ideas of democracy (Fairfield 2008). However, the idea of one person/one vote is seen as largely untenable in large populations. As such, as Birch (2007) describes, the modern sense of democracy has come to be inextricably tied to ideas of representative government.

> The term 'democracy', in its modern sense, came into use during the course of the nineteenth century to describe a system of representative government in which the representatives are chosen by free competitive elections and most male citizens are entitled to vote. (110)

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Much of the post World War II thinking on democracy and government can be traced to the work of Schumpeter (1942) who defines democracy as an institutional method to arrive at political decisions. First there is a struggle for people's votes and then the winning representatives are charged with decision making. Building on this, Przeworski et al. (2000) argue that regular elections are necessary, where there is genuine uncertainty the incumbent could be replaced by a new ruling party, and that the incumbent would willingly step down. In this way, governments can be held accountable (LeDuc, Niemi and Norris 2010). As de Sousa Santos and Avritzer (2005) describe, the form of democracy that was prevalent post war "implied a restriction of broad forms of participation and sovereignty in favor of a consensus on electoral processes to form governments" (xxxiv). As Saward (2003) points out, Schumpeter's democracy "is just a *method*. It is not about ideals, or ends, such as the achievement of justice or the betterment of peoples" (39). Democracy may result in benefits for people, but it is not envisioned as an ideal state, but rather, as a process. This definition is also based on an economic model where politicians are competing to 'sell' their vision to the people (consumers). (Schumpeter himself said it was useful to compare his vision of democracy to the economic sphere.) As Saward (2003) describes, "ordinary people have very little role to play in Schumpeter's version of democracy" (41). They get to vote occasionally for candidates, but they do not have a hand in directly forming policy. Schumpeter's democracy will seem decidedly anti-democratic for anyone who believes more broadly that democracy needs to rest on principles of equality, fairness, and participation. Schumpeter thought that most people were incapable of making important policy decisions since they were not well informed on issues and had the tendency to be

irrational and easily manipulated by politicians. The typical citizen, Schumpeter believed, "drops down to a lower level of mental performance as soon as he enters the political field. He argues and analyses in a way which he would readily recognize as infantile within the sphere of his real interests" (Saward 2003: 41). Clearly Schumpeter's democracy, although there is some space for participation from the public, is not a system that encompasses widespread public input. The public has a role in choosing leaders, but once that is done, participation in the political process is over until the next election.

Dahl (1989) builds on Schumpeter's vision of democracy, proposing a system that he termed "polyarchy." Like Schumpeter, this is a system of representative government, but is also a system where people have "widespread popular influence in matters of public policy" (Weale 2007: 102). The key to polyarchy is that citizens are actively involved in politics by forming pressure groups and engaging in political activity. In a polyarchy citizens do not simply vote and then wait for the next election – they are actively concerned with what happens between elections; this is a system that puts at the forefront freedom of expression, access to information, and encourages citizens to organize to push for policy (Saward 2003). Two of the key principles are participation in the political process and access to information that will allow them to make reasoned decisions. Others however, are not quite as benevolent about Dahl's vision, arguing that he still set up a system that was really a "dispute between elites" (de Sousa Santos and Avritzer 2005: xxxvi).

Critiquing the Schumpeterian tradition (and those who follow in his footsteps) of treating elections and democracy as synonymous, LeDuc et al. (2010) point out that although "multi-party elections following legal procedures are universally regarded as an

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essential institution of any democratic state" they are not "in themselves sufficient for citizens to exercise power over their leaders" (6). Simply equating democracy with representational government is not enough. As they describe, many systems of democracy can fit into this basic definition (democracy equals elections), but will vary greatly in their democratic effect depending on other social, legal and economic factors. In other words, participation in the political process and access to information about this process can be severely restricted. For example, what sort of party systems and legal resolutions constrain and channel the choices that are actually available at the ballot box? Is there a fair and level playing field for everyone in the campaign? How do campaign funding, advertising and the mass media contribute to this playing field? Who is actually participating in campaigns and political parties? Who is excluded? Who actually shows up to vote? How is information about elections spread to citizens? How does the media facilitate the spread of information, or constrain it? Is the system democratic and representative in that there is a diversity of social sectors, including representation from women and ethnic minorities? They point to countries, such as Belarus, where there are formal elections that include campaigns and multiple parties. However these elections merely serve to reinforce the ruling authorities in power. On the other end of the spectrum they point to Ghana as an example of liberal democracy in action, praising the country's attention to strengthening equality and fairness in other institutions, such as the judicial system, the public sector, and the country's attention to human rights. As Mosco and McKercher (2008) point out, although voting might be an important aspect of democracy, it can also be limited in its scope. Voting may have an effect in the political sphere, but may have little effect on the fact that economic power and wealth is

concentrated in the hands of a few. Similarly, if cultural power is in the hands of a few – major media corporations for instance – voting will likely have little effect on this "ideological hegemony" (49).

Saward (2003) identifies three counter-narratives against the Schumpeterian tradition of democracy that attempt to branch out further than electoral political processes. Feminist critiques point out that women have been, and to a great extent continue to be, left out of the political process in many parts of the world (see for instance Meer 2005 and Osório 2005). Second, Marxist critiques argue that class structure is reinforced by governing bodies, and that participation in elections or other forms of democratic institutions does not do anything to remedy this. Finally, participatory democrats argue that democracy is not simply a means to an end "*but a goal or ideal in itself*" (Saward 2003: 69 – italics in original). Democracy is always a work in progress, meaning that there is always more to be done to engage citizens in the political process and social life more generally. Their goal was, and is, to extend the scope of democracy beyond the Schumpeterian boundaries of elections – democracy is not just for national politics but should be practiced in other aspects of life. The narrative of participatory democracy stresses that grassroots decision-making should take place in all areas of society. Pateman (1970), for instance, was particularly interested in the democratization of industry. She argues that industries "should be seen as political systems in their own rights" (43). Workers should have the right to participate in the decision-making that takes place and hierarchies that separate workers from manager should be dissolved. Participatory democrats hold a more broad view of equality – people should not only have equal opportunity to participate in politics through voting, but social and economic

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equality is also a necessary part of democracy (Saward 2003). Again, the theme that runs through all three of these counter-narratives is that in order for a system to be truly democratic there needs to be participation – not just through voting – but in other aspects of life, and access to the political process is paramount (that every citizen is able to participate; that socio-economic differences do not exclude participation). These counter-narratives point to the fact that some people have been systematically left out of democratic processes and that simply voting for a representative government does not make social inequalities disappear.

In keeping with the participatory democrats, there are others who have been working on extending the Schumpeterian-Dahl definitions of democracy and attempting to encompass a more broad view of democracy. Ringer (2007), for instance, describes democracy as a power structure, rather than a procedure or method: "a polity is democratic if its citizens hold the ultimate control over collective decisions in a securely institutionalized manner" (25). As others do, Ringer contends that simply defining democracy by elections is not enough. His definition is broader, in that it deals with power more generally. There are situations where there are free and fair elections, but where power is not in the hands of the elected. He points to Iran where "ultimate power over collective decisions is wielded by an elite of unelected clerics from above and not by citizens from below" (26). He also points out that there are situations where economic power trumps political power – although there may be elections for political power, these are not democracies.

Theorists have also been focusing on how to implement what has been termed *deliberative* democracy (see for instance Cohen 2002; Miller 2002; Saward 2003). Again,

like other post-Schumpeterian visions of democracy, deliberative democracy recognizes that a focus on voting and elections as the baseline for democracy is inadequate. Rather, democracy rests on the ability of all citizens to participate in equal and inclusive discussions, from which they would gain an interest and expertise in public life and be propelled to play an active role in public life. These sorts of discussions would take place on community committees, in public forums and town halls, etc. At its core deliberative democracy is "any one of a family of views according to which the public deliberation of free and equal citizens is the core of legitimate political decision making and self-government" (Bohman 1998: 401). Dyrzek (2000), for instance, proposes a form of "discursive democracy," where these sorts of discussions take place across borders, uniting people in a global sense. As Miller (2002) describes, liberal democracy aims to "aggregate individual preferences into a collective choice in as fair and efficient a way as possible" (290). Liberal democrats argue about how best to achieve this, through majoritarian rule or a pluralist system, but he calls these debates "a family quarrel" (290), which is essentially guided by the same ideal that compromise must be reached. Deliberative democracy, by contrast, rests on the idea that decisions must be agreed upon, and this agreement will come about through "open and uncoerced" (290) discussions.

> The deliberative view clearly rests on a different conception of "human nature in politics" from the liberal view. Whereas the latter stresses the importance of giving due weight to each individual's distinct preferences, the former relies upon a person's capacity to be swayed by rational arguments and to lay aside particular interest and opinions in deference to overall fairness and the common interest of the collectivity. It supposes people to be in some degree communally orientated in their outlook. (291)

Before moving on, it is important to point out participatory democracy and deliberative democracy are not beyond critique. First, as Luckman, Goetz and Kaldor

(2003) point out, liberal democracy is a "hollow" promise if citizens are not guaranteed certain rights that eliminate discrimination and allow them to participate in the process:

> Democracy means little to ordinary citizens…if they do not enjoy equal rights and entitlements as citizens either because constitutional and legal arrangements fail to guarantee these rights; or because they are excluded from the public sphere due to gender discrimination, society inequality, lack of organization, cultures of intolerance or violence. (24)

Beyond this, as Gutman and Thompson (2004) point out "procedures (such as majority rule) can produce unjust outcomes (such as discrimination against minorities)" (24); the majority is not necessarily "right" and deliberative democracy, like other forms of aggregative democracy (such as participatory democracy), can slip into this pure procedural conception. Second, in terms of deliberative democracy, they ask what is the "common interest" that deliberative democracy seeks? Can there even be one conception of common good or common interest? And if one does put aside their personal interests for some conception of "common good," does this not produce "passive citizens" (28)? Third, what if citizens are deliberating under conditions that are unjust. As they point out: "Gross inequalities of political power and economic wealth, great discrepancies in access to the media, and vast differences in control of information give some people much more power than others in the deliberative forum" (42). However, as champions of this form of democracy, they counter that deliberation is the most promising form of democracy in that "deliberative theory itself has the capacity to question the background conditions, and to show why its own deliberative processes may therefore have produced unjust outcomes" (42).

However, others point out that there may be ontological differences between people that deliberative democracy does not recognize. For instance, "the deliberative

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democratic requirement that public reasoning should proceed on the basis of shared moral reasons fails to take seriously the incommensurability that sometimes exists between groups, in particular between colonized indigenous groups and members of the non-indigenous majority (Weinstock and Kahane 2010: 14). Weisnstock and Kahane (2010) go on to make the point that deliberative democracy also presupposes a certain kind of deliberation and manner of arguing that is culturally biased.

> Some critics of deliberative democracy continue to suspect that it may still harbour surreptitious biases against certain cultural groups – especially indigenous groups – in its presuppositions about the nature of public reason, the institutions and norms of deliberative procedures, and the qualities that individuals must possess to be capable of transformative dialogue. These critics worry that abiding by the strictures of deliberative democracy will tend to favour the modes of argumentation and the interests of dominant groups (15).

This is by no means an exhaustive treatise on democracy; the term is varied and contested. What I have touched on are several key points in its history, but by no means is it a complete history. The purpose of dealing with several of the term's cornerstones is to emphasize that even though there are many different ways of imagining democracy, the concept of participation is an essential element. In Athens democracy meant one person one vote (although who counted as a person was severely restricted). Post World War II Schumpeterian democracy equated political participation with voting for a representational government. More recently, theorizing on democracy has placed an emphasis on extending participation to other realms of society, including social, economic and political life. The common thread, through all these incarnations of democracy, is the idea of participation – even if participation is envisioned very differently, or in practice looks very different from the idealized vision.

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Democracy, Media and Technology

The notion of democracy in this thesis draws from the more recent new media and communication theory, where democracy and democratization is often invoked to describe how new media has increased participation in the media landscape and, as a result, access to multiple points of view. As Flew (2008) writes, arguments began in the 1990's that ICTs were enabling a "decisive break" (107) from mass communication, which was characterized by the large-scale production and distribution of information. Mass communication, the argument went, had resulted in an "asymmetrical power relationship" (107) between those who produced and distributed information, and those who consumed information. This relationship was "impersonal, anonymous and mostly commodified" (107). Information was something that was bought and consumed by the receiver who had little or no control over the content of that information, which was generally standardized and created to appeal to a mass audience. Some (in particular cultural theorists) have challenged the idea that receivers of messages are simply passive consumers, pointing out that audiences take an active part in decoding messages (see for instance Hall 1982 and Bassett 2007). However, new media is seen as taking audience agency a step further. Web 2.0 technology (websites, blogs, social media), has allowed more people to become media producers and distributors, rather than simply consumers. It is "more open and interactive than traditional communication technologies" (Flew 2008: 31), enabling the passive consumer to become an "active participant" (Kenney, Gorelik and Mwangi 2000). Some have even gone so far as say we should be calling this transformation a move toward *participatory culture* (Jenkins 2006a). As McNair (2006) argues, this is leading to "a significant augmentation of the degree of diversity of

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viewpoints available to users of the globalised public sphere" (201). New media then – in its various forms, characterized by easy-to-use technology – is seen as democratizing in that it enables more people to participate in creating and distributing information. It also enables the proliferation of different points of view, thus increasing access to multiple perspectives.

To back up a moment, independent, critical journalism and a free media are often pointed to as key elements of a healthy democratic system (Baker 2007).[9] It is through the media that much public debate happens, and through which public opinion is formed, which in turn enhances democratic decision-making. As Flew (2008) describes: "journalism is envisaged as a domain of our social life through which public opinion can be formed out of rational public debate, which in turn can lead to democratic decision-making arising out of an informed public consensus" (164). In the early part of this decade the term 'citizen journalism' began to be used to describe bloggers who were challenging professional journalists – both by reporting news they considered underreported or outright ignored by mainstream media, and by critiquing the bias of mainstream media. Some saw this as upsetting journalistic hierarchies. In order to participate, people did not have to go through gatekeepers (editors and publishers) who would decide if something was newsworthy or not. Anyone with an Internet connection could publish.[10] These citizen journalists, who used blogs as their publishing tools, were adding to the diversity of voices in the media ecosystem. Some were even forcing

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[9] This tradition goes back centuries. In the eighteenth century Edmund Burke observed that "there were Three Estates in Parliament; but, in the Reporters' Gallery yonder, there sat a Fourth Estate more important far then they all" (Burke in Baker 2007: 5).
[10] As mentioned earlier (see footnote 7) there are differences in levels of Internet connection.

mainstream media to pay attention to them and pushing stories onto the mainstream news agenda that might have gone unreported (Andrews 2003; Gillmor 2004; Lennon 2003; Lessig 2004; O'Brien 2004; Reagan 2003; Strangelove 2005; Tremayne 2007). Further to this, blogs and other Web 2.0 media have been seen as a way for people to get information out of countries that restrict their media. They can help people circumvent censorship; allow ordinary people to tell their stories regardless of restrictive regimes (Hassan 2008).

However, in a larger sense, ICTs and new media have also been seen as enabling more people to participate meaningfully in political life, "fostering a new, more egalitarian and participatory form of citizenship and political engagement" (Flew 2008: 107). The Internet has been characterized as something that will have a "transformative" effect on the public sphere, which will in turn have "great political and democratic significance" (Baker 2007: 98). These ideas of transformation and facilitating engagement in political life rest on the notion that people will be able to communicate with each other, form communities, and access information from a myriad of sources, regardless of geography. Blogs and other social media will provide a place for public discussion that has been waning in recent years. These spaces will be a place to escape from the bias of mainstream news media and political organizations. This will foster grassroots communication and organizing; power will be dispersed, as anyone with an Internet connection will be able to organize and connect with others in virtual communities of interest (Baker 2007; Flew 2008). Cairncross (2001) argues that the Internet leads to "free-market-based information systems" that are "profoundly democratic and liberating" in that the elite will no longer have a stranglehold on the

creation and distribution of knowledge (Hassan 2008: 117). To many, this shift to a

participatory culture, with an empowered audience, meant significant change.[11] As

Jenkins (2006b) writes:

> We are entering an era of prolonged transition and transformation in the
> way media operates.... Media producers will only find their way through
> these current problems by renegotiating their relationship with their
> consumers. Audiences, empowered by these new technologies, occupying
> a space at the intersection between old and new media, are demanding the
> right to participate within the culture. (24)

The Transformative Power of New Media?

Despite these promises and utopian visions for new media, many have argued that

although there might be something different about new media and the audience's role,

there has not been significant change in the media ecosystem. For instance, Kumar

(2005) argues that capitalism is still the driving force behind the Internet and new media

and that "the imperatives of profit, power and control seem as predominant now as they

have ever been in the history of capitalist industrialism. The difference lies in the greater

range and intensity of their applications…not in any change in the principles themselves"

(154). Others argue that the Internet creates a public space, but it does not create a public

sphere – and the two terms should not be use synonymously. The Internet, Papacharissi

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[11] Before moving on, it should be noted that this was not the first time that technology
was seen as having a profound effect on journalism and access to information. In the 15th
century moveable type was invented, which made it much easier to print books. Before
moveable type all printing was done using hand carved wooden blocks, which made
printing time-consuming and expensive. Mass production of books was not possible. As a
result books were limited and the church had a great deal of power over what was printed
and what was not. As Koch and Zeddy (2009) note:

> Moveable type allowed for the introduction and proliferation of numerous
> printed texts. Multiple texts meant that many human beings had the ability
> to write, express their own individual thoughts, and disseminate those
> texts widely in society. These texts created a challenge to the textual
> exclusivity of the Bible and church doctrine as the source of truth in
> society. (93)

(2002) argues, is not a public sphere because not everyone has equal access. Despite efforts, the digital divide is still a reality. Although the divide is lessening globally – in the past five years the number of Internet users has doubled – there are still significant numbers of people who do not have a connection. Figures from 2010 show that 30 per cent of the world's population had an Internet connection. In developing countries 16 per cent of households were connected, compared to 66 per cent in developed countries (International Telecommunication Union 2010). However, even in areas that have high levels of connection Internet access is unequally distributed, with the wealthy and the middle-class leading connected lives, and the less affluent going without (Holloway 2006; Norris 2001; Sciadas 2002). As mentioned earlier (see footnote 7), within North America, although there are relatively high levels of in-home Internet access, access is by no means universal. There are disparities based on income level; households with higher income levels are generally more connected than households with lower income levels. In the United States there are also disparities along racial and ethnic lines. (No similar data is available in Canada.) In addition, the digital divide means more than simply access – there are different levels of access. Does access mean an Internet connection in the home, or at the local library (Norris 2001)? Who has most access to the computer, if there is a connection in the home? What is their comfort level with the computer? What is the speed of Internet access? In addition, cultural and social barriers prevent people from fully integrating information technology into their lives (Kvasny 2006). Access means nothing if people do not possess the skills or motivation to use the Internet (Ferlander and Timms 2006). And finally, just because content creation is possible, this does not mean

people will use the Internet this way; many are happy simply digesting content, rather than creating it themselves (Hargittai and Walejko 2008).

In addition some argue that the Internet is not a place where people go to read different points of view, rather people use the Internet as a place to confirm their previously held beliefs (Sunstein 2007). As Hassan (2008) argues, the Internet usually leads people to become surrounded by likeminded people, rather than immersed in differing points of view. His point is that the blogosphere is not a forum for deliberative or discursive democracy, but rather has the effect of fragmenting and polarizing political opinion. Others have also challenged whether the Internet really is a place where one can find an array of voices and opinions. Many bloggers and so-called citizen journalists, it is argued, actually get their information from mainstream news sources. As well, in the blogosphere there are a few A-list bloggers who set the agenda for the rest of the blogging world, following a pattern similar to the mainstream media where a few major outlets set the news agenda for everyone else (Haas 2005; O'Brien 2004).

As Hassan (2008) points out, people such as Howard Rheingold (*The Virtual Community* 1993) and William Mitchell (*City of Bits* 1995) "were early boosters of the idea that the digital domain was potentially the new agora of ancient Athens" (117). Their work had a lasting effect on conceptions of how the virtual – facilitated through the Internet – was going to bring people together and create democratic spaces. But Hassan says it is hard to find concrete evidence of this. He suggests it may be closer to the truth that the Internet is "*innately anti-democratic*" in that governments can shut it down whenever they want and have "ultimate control over whether or not the people have access to it" (118). He points, for example, to how this happened during the Burmese

uprising in 2007. While it is true, thanks to social networking sites like YouTube and Facebook, that people are able to communicate more freely with each other in a "shrinking world" (119), the idea that the "death of distance" (120) really changes much politically is a bit of a stretch.

> People in, say, China or Iran certainly know of the political aspirations of their fellow global citizens, but if they try to discuss these aspirations freely and in the context of their own country, they quickly come up against the antithesis of such freedom in the shape of repressive state apparatuses that limit online free expression as much as possible, while trying to keep their economy high-tech and ICT-oriented to the maximum degree. (120)

Although technology has the potential to connect politicians with people, and people with each other "they are easily closed-off vectors for democratic communication – and when they are closed off, then the struggle for democracy suddenly becomes old-fashioned and sometimes painfully slow" (120).

There is no simple answer as to whether the Internet and Web 2.0 technologies lead to democracy. It is misleading to assume that more technology will mean more democracy (Papacharissi 2002). However, democracy is often, as Mosco and McKercher (2008) point out "conflated with technology" (49). As they write: "[t]he more people use the Internet, or the cell phone, the story goes, the more likely they are to participate more actively in social life" (154). Access to technology, however, does not necessarily translate into more active participation. Just because someone has access to the Internet, does not mean that they will become involved in advocating for social change or a political process; they could use it simply for entertainment and distraction, perhaps for downloading movies and music – in this sense, the Internet can be seen as increasing access to culture and products, but not necessarily promoting participation in cultural

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production. In another vein, communication technologies can also be used for decidedly anti-democratic means such as surveillance. In other words, communication technology can be used to oppress people, as well offer up opportunities for democratic communication. As Mosco and McKercher describe:

> Technology can dissipate as well as enhance democracy. Giving people computers in the hopes of expanding democracy, an idea that forms the basis of many progressive proposals for communication policy, often leads to disappointment for the simple reason that more technology does not guarantee quantitatively or qualitatively better communication. Communication itself is no guarantee of democracy – just think about how mass-communication technologies have served politically repressive regimes – but when we expand the social capacity for communication, when we expand opportunities for social exchange, we are more likely to succeed in encouraging democratic communication. (48)

Optimists have been quick to advocate that new media will make the media ecosystem a more open, diverse, and by extension, democratic place (see for example Gilmor 2004). Others have painted a more cautionary tale, warning that the Internet is not an egalitarian place and that people have a tendency to seek out their own, even when given the opportunity for diversity (see for example Haas 2005; Sunstein 2007). Moreover it is a place controlled by capitalism and governments that can be manipulated and even shut down completely (Hassan 2008; Kumar 2005). Despite these warnings, what is evident is that the Internet, new media, and in particular Web 2.0 technology, does afford possibilities for people with Internet connections to publish, communicate and connect with others.

Democracy: Citizen Journalism to Citizen Humanism

The democratic ideals of increased access and participation that are prevalent in new media theory have also been invoked in some recent thinking on how the humanities should adapt to a digital world. Davidson (2009) uses the term "citizen humanism" to

describe how people from a myriad of social, cultural and economic backgrounds are participating in the humanities online. Davidson says, actually, citizen humanism is flourishing on the Internet – one has to look no further than Wikipedia to find people chiming in on topics from all branches of the humanities. What she bemoans, however, is that this level of access and participation does not exist in many digital humanities projects.

> Too many of our so-called digital humanities projects are really highly specialized curatorial archives with limited scope, professional appeal, and no public contributory interface. "Give Up All Hope All Ye Who Enter Here!" our digital archives seem to proclaim. We fence them in a dozen different ways, excluding openness and participation. They do not promote Citizen Humanists. (para 2)

However, she is quick to point out that not every project needs to be created with the idea of access and participation at the forefront – something aimed at a generalized, rather than specific audience of academics. There is a need for humanists to be "theoretically sophisticated" (para 3). However, she believes that there is room for both citizen humanists and those who want to engage in highly specific theoretical conversation. Her main point however, is that the humanities need to be more engaged with the public. If digital tools are used simply to create more gated communities, digital humanists have no one to blame but themselves if interest in the humanities is waning. Building gated digital communities or digital tools that are only used by a few does not serve the humanities well. The point of humanities research is to share the fruit of this research; digital tools need to be used to communicate this research and invite public participation.

As has been shown, the notion of democracy that is used in this dissertation has its roots in new media theory where democracy is often linked with increased access and

participation. These themes also run through theories of political and social democracy. Ideals of full participation, equality and freedom for everyone – not simply a core group of people – are found, in particular, in concepts of participatory democracy and, more recently, deliberative democracy. This dissertation also draws on participatory democrats who describe democracy as a work in progress, ever evolving (Saward 2003). While this thesis is looking at whether the digital humanities is democratizing the humanities, it recognizes that there are degrees of democracy; it is a term without ending point, without a complete definition, and without a way to measure completion. As mentioned earlier, there are serious critiques of deliberative democracy and participatory democracy; the ideals expressed by proponents of these types of democracy do not necessarily translate into practice. In asking if the digital humanities is leading to the democratization of the humanities, this research seeks to query how digital humanists are working towards creating a more complete representation of the myriad of human experiences, and how they are making it easier for people to access and use humanities material; it will examine whether democratic ideals are being put into practice, and under what circumstances they apply.

Political Economy

At the heart of democracy is the struggle for power (Koch and Zeddy 2009). Broadly, as has been demonstrated, democracy is meant to signify equality, fairness, freedom and the dispersal of power. If something is anti-democratic, generally this is meant to signify a situation in which most people do not have a lot of control over their social, political or economic lives. Power is also at the heart of political economic theory.

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As such, this dissertation will be looking at the digital humanities through a political economic lens that focuses on power relations.

As Wasko, Murdock and Sousa (2011) describe, political economy differs from a purely economic analysis in several ways. First, it does not treat the economy as something separate and unique, but rather, "focuses on the relations between economic practice and social and political organization" (2). It is also historical in that it does not concentrate exclusively on immediate happenings, but rather "insists that a full understanding of contemporary shifts must be grounded in an analysis of transformations, shifts, and contradictions that unfold over long loops of time" (2). As well, while economics purports to be "objective" (2), severing any links with moral philosophy, political economy is tied to ideals of social justice and democracy. Finally, political economists are also committed to putting their theory into practice and following "their analysis through into practical action for change" (2) (see also Mosco 2009: 2-6; Golding and Murdock 1996: 14).

The roots of political economic thought can be traced back to the 18th century. For the classical theorists, such as Adam Smith,[12] David Ricardo and John Stuart Mill, political economy meant understanding how capitalism was transforming societies from being largely agrarian-based, to societies dependent on manufacturing and industrialism. For Marx it meant examining how capitalism was growing and changing, and what forces were at play in these transitions. In contemporary times, political economists have focused on how societies have been changing from industrial-based economies to more

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[12] As Murdock (2011) argues, political economy can be traced back to people such as Adam Smith, who had a strong moral basis to his economic thought emphasizing that all people in society need "each other's assistance," despite being promoted "by neoliberals as a militant apostle of free markets" (14).

service-oriented or information-centric economies, and the power dynamics at play in these changes (see for example Schiller 2007 and Wasko et al. 2011). Orthodox economics, by comparison, has left this concern aside, opting for a more 'scientific' approach that concentrates on explaining how prices are set in the marketplace, ignoring the more broad social or economic processes that have led to the conditions for market prices (Mosco 1996, 2009; Schiller 2007). Essentially, orthodox economics weans out any concern for history, social totality, moral philosophy or practice – elements that form the basis of a political economic approach. As Wasko et al. (2011) describe, central to political economy is "challenging unjust and inequitable systems of power" (4), or questioning the status quo that economic analysis generally accepts.

This dissertation draws primarily from theorists who have worked in the political economy of communication, culture and media. Much of the focus of the digital humanities is on the analysis of human culture and the dissemination of knowledge. The cases that are explored in this dissertation are all concerned with communicating their findings to larger audiences through digitization and 'new' media, or encouraging more participation in the humanities through media and technology. The political economy of communication, culture, and media is a vast and varied field. For example, just to name a few areas of concentration, political economists can be found casting a close eye on the history of the telecommunications industry (Babe 1990; Schiller 1982), concentration of media ownership (McChesney 2007; Wasko 2003), labor (Dyer-Witheford 1999[13]; Huws

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[13] Dyer-Witheford's (1999) work in the autonomous Marxist vein critiques traditional Marxists as having given too much weight to the power of capital, and not enough to the role of the worker in the equation. The worker, even the worker's resistance, is an important part of the equation. Workers have power to resist either by stopping work completely, or reappropriating technology for their own purposes.

2003; McKercher and Mosco 2007; Mosco and McKercher 2008) and gender (Huws 2003; Meehan and Riordan 2002). While this chapter is not meant to provide a complete history of the discipline, it will highlight several key contributors who have had a substantial influence on the field. Two of the founding figures in North America are Dallas Smythe and Herbert Schiller. Coming from Marxian traditions, both these scholars were concerned with the size, growth, and power held by transnational communication businesses, as well as issues of social class (Mosco 1996, 2009). For instance, Schiller's *The Mind Managers* (1973) and *Culture Inc.* (1989) examine issues of control in the media industry and how culture is increasingly becoming commodified.[14] This dissertation – as will be detailed further on – draws in particular on Smythe's (1981) work on the commodification of the audience. Some of the most influential political economists working in Europe also draw on critical Marxian theory. For instance, Nicholas Garnham, Graham Murdock and Peter Golding all examine issues of power and the labor that goes into cultural products. Garnham (1990, 2000) focuses on how media and other culture industries need to be analyzed in terms of historical materialism, or the

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[14] In *Culture Inc.* Schiller argues that the mass media entertains its viewers with essentially trivial, meaningless issues, while media corporations are happily going about, unfettered, monopolizing cultural industries on not only a national, but a transnational level, leading to a homogenization of cultural products (1989: 38). Even if smaller, independent cultural producers are still able to exist – he points in particular to small film companies – they are only allowed to continue in order to feed the big cultural firms with fresh content when they had exhausted their own resources (42). Even studio artists, who work alone and may seem untouched by market forces, still live under the clutches of the market system. "The gallery system, private collectors, art speculators, and the process of museum acquisition constitute a special but in no way fundamentally different commercial framework than television networks that commission shows from TV production companies" (44).

study of labor within in a particular historical context.[15] In some of their seminal work, Golding and Murdock (1996) focus on the relationship between ownership and control of media, as it relates to cultural production. A critical political economic approach, from their perspective, demonstrates how financing and organization of cultural production influences the messages and representations that circulate in popular culture. As with other political economists, their approach is primarily concerned with "the constitution and exercise of power" (12), compared to a cultural studies approach, which focuses on the construction of meaning through cultural objects and texts.[16] More recently Garnham (2011) has emphasized that political economists – rather than simply focusing on corporate concentration and the homogenization of culture – need to focus on the

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[15] Drawing on Marx's analysis of the relationship between the base (economy) and superstructure (in this case culture), Garnham emphasizes the link between the two. (He cautions, however, against "the twin traps of economic reductionism and of the idealist autonomization of the ideological level" (1990: 23), but rather encourages a recognition of the complex intertwining of "the material, the economic and the ideological" (23). Culture industries – be they media, film, television – are not entities onto their own, but rather are inextricably tied to the complex social and economic patterns of their particular historical time.

[16] Some of the most vigorous challenges to political economy have come from the area of cultural studies, in particular for underplaying the power audiences have to manipulate and subvert the intended meanings of text (Grandy 2004; Story 2003). However, Calabrese (2004) argues that one place political economy and cultural studies could find common ground is over questions of media audiences, specifically over how audiences are commodified. As Mansell (2004) points out, there have been political economists – such as Nicholas Garnham – who take into account audience resistance and the meaning of cultural consumption. Mosco (2004) also argues that political economy and cultural studies have each "provided a useful critique of the other" and "together they could deliver a powerful perspective on communication and media analysis (7). Political economy can learn from cultural studies by being open to subjectivity, how culture is interpreted and knowledge as "social creation" (Mosco 2009: 18). Political economy for its part can contribute to a rethinking of cultural studies by pursuing a broader agenda that looks beyond subjectivity to include an emphasis on history, social totalities, moral philosophy, praxis and labor processes (Mosco 2009: 18-19). In *The Digital Sublime* (2004) Mosco also shows how cultural studies can contribute to a more complete understanding of political economy, in this case by showing how myth has played a large part in the faith that is put in the power of cyberspace and all things digital.

complex social relations at play in an information society that is centered around immaterial labor, products and services (60). Murdock (2011) has argued "one of the major tasks now facing a critical political economy of culture and communication is arguing the case for a public cultural commons for the digital age" (37). Murdock links access to digital culture (be it documents or representations of artifacts) with democratization, especially the democratization of expertise.

At the heart of political economy however, despite variations of focus, is the analysis of power relations. For instance, as Wasko et al. (2011) describe, theorists who use a political economic approach to studying technology, do not start with the technology and assess its likely impact, but rather look at how power and inequality is distributed and whose interests technology will best serve. This type of approach uses a long lens, with an eye to history, recognizing that although the players may change, as well as their material circumstances, the struggle for power is constant. As they describe, when it comes to digital media (something that is often portrayed as 'new', 'different' and having transformative powers), it is not media that is the "primary lever of change," but rather it is simply "a new field of struggle dominated by long-standing battles and combatants. The sites and terms of engagement may shift, but the stakes remain the same" (5).

This dissertation, in keeping with this focus on power relations, will draw on Mosco's (2009) definition of political economy, which he describes as "the study of *the social relations, particularly the power relations, that mutually constitute the production, distribution and consumption of resources"* (24). As Mosco (2009) points out, it can sometimes be difficult to distinguish between who is a producer, distributer and

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consumer. One person, or entity, can take on multiple roles. For instance, in social networking sites, the consumer – the person who uses these sites – is also a producer who creates content to fill up these sites. Without these consumer-producers, or "prosumers" (Ritzer and Jurgenson 2010) as they have been called, social networking sites would be nothing but empty shells. Prosumers on sites such as Facebook are also, in a sense, distributers in that they create networks of friends to whom the content they produce is distributed (Beer and Burrows 2007; Ritzer and Jurgenson 2010). In the digital humanities, as with social networking sites, consumers, producers, and distributors can be the same entities, or they can be different. For instance, the Center for History and New Media creates software that people are meant to use to build their own digital history projects; they become producers as they 'fill up' the empty shell of the software, and they are also consumers, in that they are using the product created by the center. Other digital humanities projects, however, are not designed to have input from audiences (consumers), and the relationship between producer, distributor, and consumer is much more clear. As will be shown in Chapter Six, The Orlando Project is not designed to receive input from consumers. People are expected to use the digital material to create new scholarship, but not add anything original to the archive itself. Given this sort of variation, political economy will be useful to investigate how projects are imagined and put into practice – are they being developed as projects that blur the boundaries between the three categories, or are they being developed with more rigid borders?

The major strength of a definition of political economy that looks at social relations is that it draws attention away from structures or institutions – which has often been the territory of political-economic analysis (particularly in communication studies) –

towards issues of power and control. It asks us to look at "a specific set of social relations organized around *power* or the ability to control other people, processes, and things, even in the face of resistance" (Mosco 2009: 24). Instead of only looking at digital humanities centers as entities that exert power or are influenced by power, one is prompted to look at the interwoven patterns of power that encompass people, structures, funding bodies, etc. As such, it is a useful place from which to examine how labor is divided in the digital humanities, the hierarchies that exist, and how they purport to be changing traditional humanities scholarship. This sense of political economy is also tied to democracy. How are decisions made within the digital humanities? By consensus? By deliberation? Or are decisions made in a 'top-down', dictatorial fashion? This type of analysis is also intertwined with the meeting of the two cultures: does one culture take precedence in the digital humanities, or is the digital humanities more egalitarian, a place where two different ways of seeing and operating in the world intermingle harmoniously.

There is a more broad definition of political economy, which has been offered up by the communications scholar Dallas Smythe. Simply put, political economy can be described as: "*the study of control and survival in social life*" (Mosco 2009: 25). The strength of this definition is that it can be applied to all human activity, and even those processes that involve non-humans. Control, in this case, refers to the broadly political, in that it deals with how individuals and groups organize themselves. Survival is broadly economic, in that it refers to how a society produces what it needs to reproduce itself. However, the drawback of this definition is that it can lead a researcher to "overlook what distinguishes political economy from general processes of control and survival. These include the power of a goal-oriented consciousness and a reflexive subjectivity literally

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aware of its own awareness" (25). In particular, it can lead to overlooking how significant capitalism has been as a human invention, and how capitalism has transformed the lives and history of all species, not only humans.

Commodification and Structuration

This research, in its examination of the democratizing potential of the digital humanities, centers on the ideas that Murdock (2011) identifies as requiring the attention of political economists. As a starting point however, in order to examine these issues, this thesis will use two of the three entry points identified by Mosco (2009) as useful places to begin investigating the political economy of communication: commodification and structuration. Political economists in other branches of academia have also deemed these starting points useful,[17] and as I will demonstrate, they also work well for investigating the digital humanities.

Commodification refers to "the process of transforming use values into exchange values" (129). For Marx, a use value could be something that was physically or culturally useful – in other words, use value is not just concerned with survival needs, but can arise from a range of social needs. In communication studies this transformation could amount to taking a story that people like to tell their friends and turning it into a movie or a book (Mosco 2009). In the digital humanities, this process could amount to taking an object, or a body of work, meant for scholarly attention and turning it into something to be sold. What was essential for Marx, and is essential now, is that the commodity is not something that is simply 'natural'. It is not something that is neutral, that suddenly

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[17] For instance, Riordan (2004) believes that these entry points work well for feminist political economy, a field that uses a multitude of methodologies, but can be united around these starting points.

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appears whole, out of nowhere. The commodity is a congealed set of social processes. Marx was concerned with peeling back the layers of the commodity – what he called the 'onion skin' of the commodity – and discovering what sorts of labor processes were hidden within. As Murdock (2011) describes, "[a]s Marx noted…commodities conceal the secret of their production, and present themselves as magical objects, endowed, like religious fetishes, with the power to change lives" (19). The branding and marketing of commodities serve to "abolish any talk of labor processes, of exploitative working conditions or environmental degradation, and focus attention solely on the object itself and the projected pleasures and gains of possession" (19). For instance, the computer is presented to us as an object unto itself. It has certain use values – it will allow us to build websites, to choose fonts for word documents, check email, etc. It also has an exchange value – it costs a certain amount of money. But what is lost in this presentation is how the computer came to be – specifically the international division of labor involved in its fabrication. As Mosco (2009) describes, "[i]ts value in use and in exchange tends to mystify the ability to comprehend the computer as the embodiment of an international division of labor that stratifies productive relations along class, gender, national, and spatial dimensions" (131). A similar analysis could be made of any other 'new' object ready for sale or consumption.[18] The entry point of commodification allows one to look at the object in question and examine the social and labor processes that have gone into

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[18] It is important to note that commodification is different from commercialization, although they might commonly be conflated. Commercialization refers to a specific process – the building of a relationship between advertisers and consumer. Commodification, by contrast, is used in a larger sense, to reflect all the processes that go into transforming use value to exchange value, including, as mentioned above, investigating the labor and social relations that are hidden in the 'objective', 'neutral' object for sale (Mosco 2009).

its production. In the digital humanities some projects are created to be sold, others are free. Either way, these products are meant to be consumed. As such, the focus on commodification will allow me to focus on the labor and social relations that are part of the digital humanities.

Commodification can also be used to examine the role of the audience, or the consumer of digital humanities projects. Dallas Smythe first introduced the idea of the audience commodity, essentially proposing that the prime commodity the media produces is not television or radio shows, but the audience. The program the audience is watching is simply a 'free lunch'. Bars offer free food to patrons in order to attract them to drink more alcohol, which is how bars make their money. Similarly, the programs the media produce are simply the means to get the audience to pay attention to advertisements, which is where media companies make their money (Mosco 2009; Smythe 1981). Although Smythe's theorizing on the audience commodity came decades before the advent of social media, it is a useful starting point to begin thinking about the place of the audience, or consumer in the digital humanities. Digital humanities projects do not (at the moment anyway) host advertisements in the same way that television programs do. However, some projects are being marketed and sold. In this sense, the audience (or consumers) and their subsequent market value are important.

I also propose that Smythe's audience commodity is an important predecessor to more recent thinking that blurs the role of the audience (consumers) and the producers of social media. As mentioned, in social media sites, like Facebook, audiences are being sold to advertisers, but they are also at the same time the producers of these sites which would be nothing but empty shells without their input. This phenomenon has been

referred to as prosumption, which is often identified as a defining theme of Web 2.0 technology (Beer and Burrows 2007; Cesareo 2011; Fuchs 2009; Ritzer and Jurgenson 2010; Strangelove 2009). Prosumption is not new to Web 2.0, or even the twenty-first century. It was first used in 1980 by Alvin Toffler to describe the unpaid work people were doing for themselves, "arguing that it had been virtually excluded from economic analysis because it did not contribute to production for exchange" (Murdock 2011: 30). For instance, when someone buses their own food at a restaurant or pumps their own gas they are, in a sense, prosumers. Prosumption, however, has taken on new relevance with the advent of social networking sites that simply would not exist were it not for the prosumer. The Internet has facilitated "a new model of prosumption, where customers participate in the production of products in an active and ongoing way" (Tapscott and Williams 2008: 127). In Smythe's day people did question whether the audience was in fact laboring when they were watching advertisements, but in today's age of social media, it is much more apparent that audiences do actually labor, at the same time that they are being commodified. The research that follows will examine digital humanities projects that create open source material and tap into users to help create their material. As such, prosumption will be used as a framework to analyze the nature of work in these centers.

When looking at the commodification of labor, I also will draw from Braverman's (1974) work on the separation of conception from execution in the labor process under capitalism. Conception, or the imagining, planning, and designing of work, Braverman argues, is separated from the execution, or the actual carrying out of the work. Usually, conception is in the hands of a managerial class, while execution is the realm of workers.

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What happens is that "capital *reconstitutes* the labor process to correspond to this new distribution of skills and power at the point of production" (Mosco 2009: 139). In the extreme this can lead to intense monitoring of the workplace, where workers are expected to perform set tasks in precise, orderly and time-managed ways. In this sense the managers are the 'brains' behind the organization and the workers are merely 'appendages'. This research, in looking at the division of labor in the digital humanities, will ask whether there are people in charge of 'ideas' and people in charge of the 'execution' of these ideas, and what sort of overlap there is between the two. Specifically, is there a division between those who come up with the ideas, and those who have the technical ability to make these ideas come to fruition? If there is, what sorts of hierarchies are formed? Again, what sort of democracy is being enabled, not just by the digital humanities, but within the digital humanities? Are decisions reached through some sort of consensus or is the process more authoritarian?

Turning now to structuration, Mosco (2009) describes this as a "process by which structures are constituted out of human agency, even as they provide the very "medium" of that constitution" (185). This is essentially a contemporary rendering of Marx's belief that "we do make history, but not under conditions of our own making" (186). It refers to the give and take between the individual and societal structures; we are constrained by societal structures (be they social norms, traditions or moral codes), at the same time that we can influence them (Giddens 1984). We are constrained at the same time that we are enabled by social structures. For Giddens, structure and agency were intertwined:

> The basic domain of study of the social sciences, according to the theory of structuration, is neither the experience of the individual actor, nor the existence of any form of social totality, but social practices ordered across space and time. Human social activities, like some self-reproducing items

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in nature, are recursive. That is to say, they are not brought into being by social actors but continually recreated by them via the very means whereby they express themselves as actors. In and through their activities agents reproduce the conditions that make these activities possible. (2)

Giddens (1984) has been criticized for giving too much power to individual agency and focusing less on the power that is exerted by social structures. Nevertheless, the idea of structuration gives political economy an opening to consider things such as class, race, and gender, in a field that has traditionally focused on institutions or commodification (Mosco 2009). Structuration in this dissertation will be used to look at what sort of norms digital humanities research is operating under and the overarching structures at play in the university and institutional settings that either enable or constrain the digital humanists. It will be used as an entry point to examine how the digital humanities is attempting to change the humanities in terms of democratization – increasing access and participation in the digital humanities. It will also be used as a way to examine how digital humanities projects are organized in terms of labor and hierarchies. In particular, it will be used to look at how the digital humanities is attempting to challenge the traditional structure of the humanities by harnessing the power of computing science, and effectively bringing together the two cultures of the arts and the sciences.

The digital humanities, I will argue, is at times, a form of third culture – one in which the arts and sciences come together. Some people who call themselves digital humanists are able to operate in both worlds, others have a sophisticated understanding of both. Over the half-century since Snow spoke of his hope for a third culture, there have been different visions of what this third culture would look like. The remainder of this chapter takes a close look at some of those visions.

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As mentioned, when Snow delivered his lecture on the two cultures at Cambridge University he described a sharp bifurcation; one culture was made up of literary intellectuals and the other, natural scientists. The problem, as he saw it, was that these two cultures were unable to talk to each other – they did not speak the same language and this was to everyone's detriment; both cultures had a hand in shaping the world, yet they were unable to hold a conversation. Snow acknowledged that there are issues with dividing society into two cultures. As he writes "Of *course* (italics in the original) there is sub-division after sub-division within, say, the scientific culture" (66). However, what they all share – he contends – is a "scientific process" that "has two motives: one is to understand the natural world, the other is to control it" (67). Similarly, he insists that literary scholars, like scientists, share "common attitudes, common standards and patterns of behaviour, common approaches and assumptions" (64) that constitute culture.

His idea was by no means original.[19] Most famously, eighty years earlier T. H. Huxley and Mathew Arnold had a well-publicized feud along much the same lines. Huxley defended science as the most important form of education, while Arnold (in the Rede lecture of 1882) defended an education that blurred the lines between literature and science – although it must be said that he insisted that a person could not be properly educated without being immersed in the classics of literature (Cornelius and St. Vincent

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[19] As Collini (1993) points out, the divide that Snow identifies as the two cultures dates back to the nineteenth century. In earlier times there were certainly divisions between branches of knowledge, but the term 'science', referring to physical or natural sciences came into common use in the mid-1800's. The Oxford English Dictionary, for example, only refers to science in this way after 1860, stating "We shall...use the word "science" in the sense which Englishmen so commonly give to it; as expressing physical and experimental science, to the exclusion of theological and metaphysical" (xi-xii). The first usage of the word 'scientist' is traced back to the 1830's and 40's.

1964; Snow 1998). Snow (1971) himself said that his ideas were developed through conversations with friends and colleagues. However, despite this history, it was Snow's speech that hit a nerve and sparked a maelstrom of debates that continued into the following decades, over whether these two cultures still exist and if they do, what forms they take.

Most famously, in the 1990's Snow's two cultures reared their heads in what became known as the 'science wars'. These so-called wars essentially amounted (and still amount) to a dispute between those who practice science and those who study it as a social phenomenon. On one side of the battlefield are those who believe (mostly scientists) that only someone who is schooled in a particular science can effectively critique that science (Sokal and Bricmont 1998). Although some, such as Gross and Levitt (1994), do accept a weak constructivist view. On the other side are those who argue that science is a social construction that needs to be seen as an endeavor that does not, necessarily, expose any sort of the truth about the world. For instance, some scientific avenues are pursued simply because scientists have an interest in that subject, or there is money to be made in that area, not necessarily because it is scientifically 'worthwhile' (Collins and Pinch 1994).

In the twenty-first century Snow's depiction of two cultures still exists and is now generally seen as a divide between the sciences and the humanities. This divide continues to be pervasive. For example, at an early age students are generally shuffled into one stream or another, choosing by the latter years of high school, or in some cases their undergraduate degree, whether they will be arts or science students. Although there has been no formal truce in the science wars, there have been attempts at reconciliation and

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acknowledgement that both scientists and those who study science from a social perspective have something meaningful to contribute (Ashman and Baringer 2001; Labinger and Collins 2001; Lee and Wallerstein 2004).

A few years later, in a revision of the original speech, Snow spoke about his hope for a third culture. In this third culture scientists and literary intellectuals would be on speaking terms and engaged in an exchange of knowledge. He is vague, however, about what exactly third culture would look like; it is clear, though, that he is imagining people who are able to communicate both with scientists and what he calls "manifestations of the literary culture at its extreme" (71). Although he does not go into great detail, it is evident he is imagining people who occupy a middle ground – not necessarily scientists – but people who are interested in the social, economic, and philosophical implications of science, or are willing to adopt methods that scientists use. He identified people in fields such as "social history, economics, government (in the American academic sense), psychology, medicine, and social arts such as architecture" as being concerned with what he called the "human effects of the scientific revolution" (70). These are people concerned not with "legend" but with the "fact[s]" about how human beings live and have lived (70).

Collini (1993) calls Snow's third culture "a rather feeble attempt to remedy an obvious omission in the original lecture" (liv), namely people in the social sciences who cannot be classified as humanists or scientists, but rather occupy a middle ground. At the time Snow was writing, Britain's universities were "not...as welcoming to the newer social sciences as comparable institutions elsewhere, especially in the United States" (liv). But Snow was not simply talking about social scientists. He was also talking more

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generally about people who were schooled in both the sciences and the humanities. For instance, he acknowledges that while his conception of two cultures was profoundly influenced by his British surroundings, that the divide between the two cultures – although certainly present – is not as deep in other places, such as the United States where science students at Yale, Princeton, M.I.T. and Cal. Tech. "are receiving a serious human education" (69). It was not just the new breed of social scientists that Snow saw as third culture, but a more vaguely defined person who defied borders and avoided being entrenched in one culture or another.

Snow's ruminations about third culture certainly portray bias. For instance, a scholar of literature would likely argue that they too are concerned with how people live and that literature is a way of knowing the world, how humans act and interact with each other. But what Snow was attempting to describe – albeit perhaps not very eloquently – was that in his vision for third culture scholars would not ignore science, either its discoveries or its methods (epistemology), but take science seriously, either by adopting more scientific methods or simply by considering how science sees the world.

Snow's ideas about third culture also resonated, just as his portrayal of the two cultures has, and have sustained through to the twenty-first century. Contemporary thinking on third culture is multi-faceted, and is not simply restricted to Snow's incomplete ruminations on the social sciences, or vague references to a multi-faceted education. Some believe a third culture does exist, but it looks very different from the hybrid that Snow imagined. Brockman's (1995) third culture places scientists in this realm. Lehrer (2007), while agreeing with Snow's pluralist view of third culture, posits a

fourth culture, with artists at the helm. Still others imagine a third culture that embraces digital technology, merging the arts with computer science.

Brockman (1995) believes that the third culture is made of scientists who communicate directly with the public through books and publications aimed at a wide audience.[20] These are the scientists, he believes, who deal with issues that are fundamental to the human experience – ontological questions about our existence and behavior. This fashioning of third culture has been critiqued and challenged in a couple ways. First, the most obvious critique is that instead of uniting the two cultures, Brockman's third culture actually reinforces the divide, placing the scientist (who can express him/herself well to a lay audience) ahead of artists or writers (Barash 2005; Lehrer 2007). Second, Barash (2005) points out that Brockman's third culture is not something new. There have always been scientists and mathematicians, Arthur Eddington and Bertrand Russell for example, who have been good at communicating and reaching out to a broad audience.

Lehrer (2007) agrees that a third culture of scientists is not the third culture that Snow had in mind. A third culture, rather, should recognize the strength of science and art, in all its many forms.

> Physics is useful for describing quarks and galaxies, neuroscience is useful for describing the brain, and art is useful for describing our actual experience. While these levels are obviously interconnected, they are also autonomous: art is not reducible to physics. This is what our third culture *should* be about. It should be a celebration of pluralism. (192)

What Lehrer proposes is that there is a fourth culture made up of artists of all types, who through their art get at truths that the sciences are also after. In this fourth

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[20] It should be noted that Brockman is a publisher who has many of these scientists on his roster.

culture, he says, "the sciences must recognize that their truths are not the only truths. No knowledge has a monopoly on knowledge" (197). In particular Lehrer sets out to describe how artists – be they writers, painters, chefs or poets – have anticipated discoveries in neuroscience. For instance, he demonstrates how Walt Whitman's emphasis on the body as an inspiration for his poetry (something that caused him to be seen as almost pornographic in his day) anticipated what neuroscientists now know, that emotions are generated in the body and that our moods can be traced to bodily functions. He also makes the link between art and neuroscience through another writer, George Elliot. Elliot's writing was concerned with what she saw as the most essential element of human nature – its malleability and the idea that we can change ourselves, out of sheer will. Lehrer proposes that Elliot was actually anticipating the discovery of neurogenesis – how our brains are wired to regenerate, create and retain new memories, to constantly evolve.

Drawing on computers and computer science, Vesna (2001) believes that artists who use computers and other forms of technology are the people who have a foot in both cultures, taking inspiration from innovations in science as well as being interested in what scientific discoveries mean for culture and society. She draws on Snow's ideas that a third culture focuses on dialogue between science and the humanities.

> Scientists can relate to and understand our work easily primarily because we use the same tools – computers. Because our work and tools are in constant flux, we are forced to articulate the reasoning and meaning informing the art we produce, which has traditionally been the role of art critics and historians. This creates room for an active dialogue with both humanists and scientists. (121)

Still, this third culture is not what Snow had in mind and, if anything, it seems to engender more divisions rather than breaking down walls. First of all, it creates another division by setting artists apart as 'interpreters'. Second, it may serve to only exacerbate

what is already seen as a major division in the 'science wars' if artists look to the literary, philosophical and theoretical communities for explanations of science and then reinterpret this, without going to the scientific community directly. But perhaps most importantly, this interpretation also runs the risk of wading in shallow intellectual, critical, and aesthetic waters for this reason: simply saying you are using technology does not necessarily make for a meaningful art piece that has anything to do with technology.

For Kevin Kelly (1998), writing from his (then) position as the editor of *Wired*, third culture is the generation raised on Nintendo – kids who grew up wanting to be Bill Gates rather than Bill Clinton. He calls this culture, "nerd culture" (para 5) and says it straddles the divide between Snow's two cultures, drawing on both of them. This third nerd, or techno-culture brings together science and the arts through the act of creation.

> In the third culture, the way to settle the question of how the mind works
> is to build a working mind. Scientists would measure and test a mind;
> artists would contemplate and abstract it. Nerds would manufacture one.
> Creation, rather than creativity is the preferred mode of action. (Kelly
> 1998: para 8)

His point is that computers allow us to ask questions such as "what is reality?" "what is life?" and "what is consciousness?" (para 12), and get answers like never before. These questions are old questions, but instead of searching for answers in the works of Plato or by setting up scientifically controlled experiments, participants in this third culture create artificial worlds, realities, consciousnesses, and then plunge into them – and this is what makes all the difference.[21]

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[21] Zizek (2002), however, points out that treating cyberspace like a "self-evolving natural organism" (22) is problematic, because this ignores the political space in which it is constructed and formed.

Other attempts at creating a third culture can be found in post-secondary schools that are trying to break the mold of 'arts' or 'sciences'. For instance, McMaster University in Hamilton, Ontario offers an undergraduate degree in arts and sciences where students take courses in history, calculus, physics, biology, literature, statistics, and research methods (Jenkins, Ferrier and Ross 2004). Many universities in Canada and the United States do offer some sort of interdisciplinary option, particularly at the graduate level. However, it is common to insist that students have a home in a certain department. McMaster is unusual, in that it does not insist on this.

McMaster's program comes closest to the way that third culture will be used in this research. The third culture is made up of people who are comfortable working in the arts and the sciences, whatever iteration of these two cultures they choose. The digital humanities, by its very nature, requires people who can work in the humanities, and can also work in computing science. This dissertation, while recognizing that there are many different ideas of what third culture entails, will draw on Snow's vision, to examine how this materializes in the digital humanities. Specifically it will look at whether people who work in the digital humanities are comfortable working in both environments, and to what degree. It will also look at the digital humanities as a field, and as a place where people with different areas of expertise navigate cultural differences.

Conclusion

This research examines whether the digital humanities is democratizing the humanities in terms of increasing access to, and participation in, the humanities. These ideas of democracy draw particularly from new media and communication theory that focuses on how Web 2.0 technology allows more people to contribute to the media

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ecosystem, and provides a means for people to communicate and organize regardless of geography. This form of digital technology is seen as having the potential to upset accepted hierarchies, wresting power from the hands of a few, and distributing it more equitably. These notions of equality, fairness and participation are also prevalent through other ways of imagining democracy – from early Athenian notions of direct democracy, to more recent forms of participatory and deliberative democracy that emphasize full participation in social and political life.

In order to examine these ideas of democracy, this thesis will use a political economic lens. Political economy is useful for examining the power relations at play as digital humanities projects are conceived, and created. Since power is also at the heart of democratic theory, political economy is also a fitting way to examine these issues. Using the entry points of commodification (Mosco 2009) and structuration (Giddens 1984; Mosco 2009) this thesis will examine how the digital humanities is attempting to change traditional humanities scholarship, through encouraging collaboration and bringing together the two cultures. The merging of the arts and sciences, into a third culture of digital humanists, will be given particular attention throughout this dissertation. Although there have been many different ways of imagining third culture, I argue that the digital humanities is one iteration of this culture that is close to what C. P. Snow imagined. This analysis of third culture, however, is not a separate node of analysis, distinct from concerns of democracy and political economy. The focus on third culture is intertwined with political economy, as attention will paid to how the two cultures negotiate power, hierarchies that develop, and divisions of labor. Snow imagined that the people who belonged to third culture would straddle the divide between science and the humanities.

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As such, this research looks at whether digital humanists are people who embody this overlap, or whether there is still a distinct separation. Third culture is also intimately tied to the notion of democracy that is being used in this research, in particular the idea that an essential component of democracy is increased participation in the humanities. Much of this focus will be on how the digital humanities increases the scope and range of the humanities (including the amount of people who are able to participate in building the humanities record) and increasing access to humanities material. However, this dissertation will also argue that digital humanists who embody third culture are able to more fully participate in the digital humanities; they can manipulate technology and draw on their respective humanities disciplines. This is, I will argue, in effect 'democratizing' for these people. They are able to more fully participate in their field, unlike others who may be working the digital humanities, but have more limited capabilities in one of the two cultures.

At this point it is necessary to address more directly what may seem like a point of disparity. Is the third culture I am talking about embodied in people (digital humanists), the products that are developed, or is it the field (digital humanities) itself. First, third culture applies particularly to the people involved in the digital humanities. Are digital humanists specialists in technology? Are they specialists in a humanities discipline? Or do they straddle both cultures and deserve to be seen as a form of third culture? That said, the digital humanities, as a field, is also a site of third culture. It is a place where computing science and the humanities meet. It is a place where products are created that draw from both cultures. My question in this thesis is what this meeting looks like; whether there is still a separation of cultures within this third culture, or whether

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digital humanists embody third culture as Snow imagined. If I am making this distinction, the same question could be asked, that Snow himself asked, is culture the right word to use? Do people in the digital humanities necessarily have the "common attitudes, common standards and patterns of behaviour, common approaches and assumptions" (Snow, 1971: 64) that constitute culture? What I will argue is that the field of digital humanities is a place of third culture, but it is one that is evolving. Even if there are people in the digital humanities who come from more of a computing science background, and others who come from more of a humanities background, there is a sense of common goals and purpose, despite these different backgrounds. One of the main goals of this research, however, is to examine where there are points of friction as well as overarching commonalities.

However, to step back a moment, the digital humanities in its current form is by no means the first time technology, and in particular computer technology, has been used in the humanities. The next chapter begins by tracing the evolution of computing in the humanities and how the digital humanities has become suffused with the technological and digital sublime.

Chapter Three

The Humanities, Technology and the Sublime

In 1978 the Faculty of Humanities opened its doors at the University of Calgary. Speaking at the inauguration, the new Dean, John Woods, declared that students studying in these halls would learn to be critical thinkers. They would be challenged, he said. Their sensibilities enhanced. Their spirits refined. This would come about through studying "the language and literatures of mankind, the historic unfolding of the great civilizations and their systems of thought, the logical foundations of critical reason, and the structure of scientific, philosophical and religious reflection" (Woods and Coward 1979: preface). Woods is by no means alone in the way he championed the humanities as an essential element of education. These are precisely the sorts of arguments that are invoked when humanists are asked why students should study literature instead of medicine, the classics instead of physics. The humanities, the argument goes, are studied in order to understand the past – both the mistakes and the triumphs – so that we can carve a better future. A humanistic education develops critical thinkers who are able to shape the world in moral and ethical ways (see for example Harpham 2011; Jaschik 2010c; Miall 1990a; Nussbaum 2010).

However, despite the vocal supporters of a humanistic education, all is not well in the humanities. The humanities are being cut from the curriculum in many nations around the world (Nussbaum 2010), budgets are being slashed, departments are being cut or eliminated completely and enrollments are down. In the midst of this uncertainty, some humanists have turned – and continue to turn – to the computer as a way to reinvigorate their fields. The hope is that computing technology will revamp the humanities, giving

humanists the tools to create new, relevant scholarship. Computers – the argument goes – will also add rigor to the humanities, leading humanists away from interpretative scholarship and all the questions of reliability that go along with this type of research, towards more quantifiable findings that can be replicated. In this same vein, computers will allow humanists to query large data sets that will also make their research more complete. Pre-computers, a researcher could only be expected to study a limited number of texts or artifacts. Computers, however, are able to process large amounts of data quickly and easily. By taking on the 'drudge work' of the humanities (sorting, counting, indexing), computers will free up humanists' imaginations, allowing scholarship to flourish (Bobley 2008; Davidson 2008; Kirschenbaum 2010; Miall 1990b).

This chapter describes the changing relationship the humanities have had with technology, in particular computer technology, throughout the second half of the twentieth century. Attention is paid to how computers are often painted as a panacea for what is ailing the humanities, and how the computer has become, as a result, imbued with sublime qualities. This chapter will trace the history of the sublime and its promise of transcendence from the banal and the everyday, in order to show how the digital humanities is suffused with similar promises. This chapter begins, however, with a closer look at the humanities and the 'crisis' of humanities education.

What are the Humanities?

Like the digital humanities, the humanities is an umbrella term that is used to refer to a wide array of disciplines. The National Endowment for the Humanities (n.d.) in the United States describes the humanities as a term that:

> [I]ncludes, but is not limited to, the study of the following: language, both
> modern and classical; linguistics; literature; history; jurisprudence;

philosophy; archaeology; comparative religion; ethics; the history, criticism and theory of the arts; those aspects of social sciences which have humanistic content and employ humanistic methods.

The predecessor of what we now think of as a humanities education goes back to fifth century BC and "The Great Age of Athens" (Nussbaum 1985). As Nussbaum (1985) writes, "young citizens did pursue what we might describe anachronistically as a form of humanistic education: an education, that included, in addition to rigorous physical training, training in poetry, music, dance, and most probably some form of political and social history" (7). Spellmeyer (2003) reminds us that the ways the humanities are taught and studied today "have existed for less than a hundred years" (3). Until the turn of the 19th century the leading humanistic studies were not English and history – the most prominent humanities subjects today – but the classics and rhetoric (Kernan 1997; Spellmeyer 2003).[22]

It has only been in modern times that the humanities have come to mean certain specialized subjects "such as art history, religious studies, classics, national literatures, and musicology" (Kernan 1997: 3). Harpham (2011) argues that it was between the two World Wars that the "modern concept of the humanities began to crystallize in the American academy" (14). Princeton implemented its first "Program in the Humanities" in 1930. Around the same time at the University of Chicago the "Faculty of Arts and Letters" was replaced with the "Division of the Humanities" (14). Similar changes were

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[22] It was not until the fifteenth century that the term "humanist" was actually used. As Klein (2005) writes: "Italian humanists were the first to actually be called humanists. The word umanista was Latin slang for scholars and teachers of studia humanitatis in Italian universities of the late fifteenth century" (17).

made at Harvard, Yale, Stanford and Columbia. By mid-century the humanities scholar was studying philosophy, literature, the arts, and history.

After the horrors of the two World Wars and the return of soldiers who were promised an education, the humanities were to be moral compasses, places where people would learn to reflect, become critical and imagine a better future. As Harpham (2011) writes, the humanities came to be associated with "notions of empowerment, liberation, cultivation, civic responsibility, and, almost invariably, ethical behavior and the development of character" (14). Those who champion the humanities often defend them using this type of framework. For instance, in 1980 the American Commission on the Humanities (ACH) declared that it is "[t]hrough the humanities we reflect on the fundamental question: what does it mean to be human?" (1). The ACH's fundamental message was that the values and aspirations of a society are measured through the humanities, as such students needed to be schooled in the humanities in order to develop into critical human beings who are able to learn from the past and cultivate a better future. Miall (1990b) writes that the humanities are about "transformation" and altering the self. "Through acts of imagination we change our consciousness and our feelings – whether it is through learning a second language, through an act of archaeological reconstruction, or by reading a poem." (49). Bellah (2000) argues that while science, technology, and economics have much to offer the world, it is the humanities that "are uniquely equipped to deal with questions of a higher kind. The sciences and technical fields may tell us how we can concretely achieve our goals, but the humanities alone enable us to decide which goals are truly worth achieving" (Spellmeyer 2003: 4). Essentially, the arguments for a humanities education center around the idea that the

humanities are important because they shape the way we think, the stories we tell, and our communication (Kernan 1997); it is only through the study of the past that we will be able shape the future (Harpham 2005).[23]

However, over the latter half of the twentieth century, this type of rationale began to fall out of favor, and in times of fiscal restraint government funding bodies directed the majority of funding towards areas seen as more economically useful: the study of science and technology. Even the ACH (1980), an organization focused on the health of the humanities, stated that "the humanities cannot realistically expect large increases in funding in the 1980's, during a period of widespread retrenchment" (150). Humanists looking for financial support for their research would have to live with the sharp contrast between the levels of federal funding that go to the humanities compared to the sciences. "[T]he combined budgets of the Humanities and Arts Endowments in 1980 amounts to less than a third of that of the National Science Foundation" (150). Given this funding disparity, by the 1980's, the humanities were often described as in crisis (Denley 1990), consistently having to defend themselves against more 'useful' subjects, like science or even the social sciences (American Commission on the Humanities 1980; Davies 1979; Levi 1970). For instance, writing in 1985 Kuklick describes critical thinking and promoting a greater understanding of the world as not enough of a justification for a humanities education, rather "there have been repeated demands made for what we today call the application of the humanities to other more "relevant" fields of endeavor" (41),

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[23] Nussbaum (1985) points out that this type of rationale is not unique to the twentieth century, but can be traced back to the Ancient Greece where the aim of a humanistic education was quite clearly to produce "good citizens, sound in both body and character" (7).

such as the sciences, medicine or public policy. To that end, some humanists set out to show how critical thinking and a deeper understanding of the world do have practical applications. For instance, Cassell (1985) makes the case that the humanities will help doctors treat patients: "a liberal education will increase physicians' understanding of and affection for the human condition" (168). Callahan (1985) argues that the humanities will help those who make public policy. The humanities, he writes, help develop "character" which is essential for people who will be called upon to make "sound and sensitive judgments" (104). He also emphasizes that the humanities, with their ability to provide "alternative perspectives, frameworks and visions" (104) are an excellent training ground for policymakers who need to be able to step back and look at the larger picture when faced with a deluge of immediate problems that need attending.

However, despite attempts to justify the humanities in the 1980's, this sense of crisis continues in the present day. Enrollment numbers have continued to steadily decline, tenure positions continue to disappear, and budgets are being slashed as the humanities steadfastly take second place to science, commerce, and in some cases the social sciences (Harpham 2011; Hunt 1997; Kernan 1997; Little 1985; Russo 2005; Spellmeyer 2003).[24] As Spellmeyer (2003) describes, this has also been accompanied by

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[24] Crisis has also manifested internally within the humanities. As Spacks (2001) describes, "most disciplines within the humanities have recently suffered proliferating intellectual divisions, often accompanied by acrimonious dispute" (para 3). In her discipline she says there is no longer any agreement about what English means as a field, as people take different theoretical stances. She illustrates her point by describing a departmental meeting where the task was to come up with a reading list that all English majors needed to master. After two and a half hours they were unable to agree on a single text that should be on the list. Shakespeare held on for quite a while, until someone raised the objection that unless Joyce (Ulysses) was on the list, Shakespeare had to go (Spacks 2001). Her story of increasingly fragmented, fractured and specialized departments is not unique (Hopkin and Denley 1991; Taylor 2009). Humanists have also locked antlers with

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an erosion of the influence of humanities professors, especially those "in the key disciplines of philosophy, history, and literary studies," many of whom "can remember a time when the humanities seemed to occupy a central place in the life of their culture as a whole" (3). Their influence, Spellmeyer argues has now been replaced by "the frenzied rush for wealth and the evanescent pleasures offered up by the popular media" (3). The humanities are second fiddle; the sciences are first violin.

> There is now a need to explain to almost every parent, every prospective student, every scientific colleague, every university administrator and every politician what the value of humanities subjects is. 'The training of the mind,' helping give perspective on life,' 'the value in itself of a broad education' are phrases that may convince some humanities teachers; they cut no ice with utilitarians, especially as the humanities get upstaged not just by the sciences, but also by more 'socially relevant' disciplines such as sociology and business or management studies. (14)

As Nussbaum describes in her latest book *Not for Profit: Why Democracy Needs the Humanities* (2010), the humanities and the arts are being cut out of education at both the primary, secondary, and university level "in virtually every nation of the world" (2). In tough economic times, the humanities are simply not seen as disciplines that will bolster the economic health of nations. Instead, policy-makers see the humanities as "useless frills, at a time when nations must cut away all useless things in order to stay competitive in the global market" (2). Those who are concerned with generating profit, she writes, believe that science and technology are crucial to securing healthy nations. As a consequence the humanities "are rapidly losing their place in curricula, and also in the

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cultural studies, charging that "personal war stories" and "an all-inclusive cultural studies" are usurping attention that needs to be paid to "the singular distinction of the Greeks and timeless, universal ideas and values" (Klein 2005: 205). However, "new humanists" often dismiss these arguments, seeing value instead in a more inclusive description of the humanities (Klein 2005: 205).

minds and hearts of parents and children" (2). On a similar note, the President of Cornell University, David Skorton, in his 2010 "state of the university" address, described the humanities as "facing a crisis of funding and attention" (Jaschik 2010c). At the time of his speech, federal government funding of the National Endowment of the Humanities and the National Endowment for the Arts had been cut to a third of what it was in the mid 1990's. During the same period, federal funding of the National Institutes of Health and National Science Foundation almost doubled, and more than doubled respectively. Beyond the dismal funding numbers however, Skorton also noted that faculty moral is low in the humanities and that students are eschewing the humanities as subjects that are not practical to study in tough economic times. Using a term that has infused popular culture thanks to the work of Malcolm Gladwell (2000), Skorton described the humanities as hitting "a negative tipping point" (Jaschik 2010c).

The current economic downturn in the United States has translated into decreased funding for the humanities from state sources, alumni, and private endowments (Lu 2010). It does not seem as if this fiscal situation will improve anytime soon. Currently there is legislation passing through the House of Representatives that would see the National Endowment for the Humanities (NEH) receive 20 million dollars less in the 2012 fiscal year, a drop of 13 per cent, bringing its annual budget to 135 million (House Panel 2011). Meanwhile, the budget for the National Science Foundation (NSF), which was almost 7.5 billion in 2011, will increase by 43 million dollars (Quizon 2011). Overall, the budget for the NEH has declined by about a third over the past thirty years (when the numbers are adjusted for inflation) (Lu 2010).

In Canada, funding for the sciences also eclipses the funding allocated to the humanities by a considerable amount. For example, in the fiscal year 2008-2009 the budget for the National Sciences and Research Council of Canada (NSERC) was just over one billion dollars and the budget for the Canadian Institutes of Health Research (CIHR) was just over 900 million. Meanwhile the budget for the Social Sciences and Humanities Research Council (SSHRC), which splits its resource dollars between the social sciences and the humanities, was just over 335 million dollars.

In the United Kingdom funding for the arts and the humanities is facing similar cutbacks. For example, the Arts Council, a major source of funding for humanities research has had its budget cut by 118 million pounds (Garner 2011). In Universities across North America, humanities departments are also being cut and in some cases eliminated (Jaschik 2010b; Lu 2010). Last year the State University of New York at Albany decide to end all admissions to the French, Italian, Russian, and classics programs (Fish 2010; Jaschik 2010a). At the University of Iowa 14 graduate programs in the humanities are slated to be either eliminated or cut back (June 2010). At the University of Toronto, the Center for Comparative Literature, founded by Northrop Frye, is closing and students funneled into a new School of Languages and Literature. The plan is to downsize or eliminate language programs at the university, consolidating them into one school (Brichard 2010; Lu 2010).

Geoffrey Harpham, the president and director of the National Humanities Center in Research Triangle Park, North Carolina notes that almost every survey of the humanities in North America over the last half-century has identified a crisis in the

humanities manifesting in declining enrollments (Harpham 2011).[25] Humanities

graduates are being warned that jobs are scarce, especially in secure tenure track

positions[26] (Cohen 2010; Graduate Humanities Education 2010; Lu 2010) and even

warned to stay away from graduate school (Pannapacker 2009a, 2009b). A recent report

from the Georgetown University Center on Education and the Workforce, that surveyed

three million bachelor degree holders over a 40 year period, recommended that students

who want to make money after graduation should consider going into the sciences (as

well as get a graduate degree and move into managerial positions) and stay away from

the fields of arts and education, which are simply not as lucrative (Kiley 2011). This sort

of advice is in sharp contrast to the heyday of the humanities post World War II where, in

North America in particular, the humanities were seen as necessary, respected, and

valued (Harpham 2011).

Bate (2011) writes that the public easily grasps the reason for research in science

and medicine – we can prolong life and solve environmental problems, for instance – but

it is more difficult, especially in times of fiscal restraint, to justify humanities research.

Similarly, as O'Neill (2011) writes, in an introduction to a book on the value of the

humanities initiated by the British Arts and Humanities Research Council, since the

economic downturn that began in 2008 there has been a widely held belief that public

funding "should go to research that leads to innovation and economic growth" such as

"science, technology, engineering, and medicine" (v). She argues, however, that those

who believe there is not an economic reason to support the humanities are misguided.

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[25] In the United States in the 1960's almost 18 percent of graduates earned a humanities degree, compared to just under eight per cent in 2008 (Conn 2010).

[26] For instance, the Modern Language Association reported in 2010 that jobs openings had dropped 40 per cent in two years (Lu 2010).

Rather, "many of the UK's very successful 'cultural industries', from publishing and higher education to theatre and broadcasting depend on humanities research to shape and refresh their 'products'" (vi). Pearson (2011) agrees, writing that archeology, for instance, is lucrative in that "it sells newspapers, television programmes, websites, magazines and books, and supports the tourist industries of many nations" (30). O'Neill returns, however, to the idea that the value of the humanities cannot be reduced to economics. Rather, research into the humanities changes what we know and how we act:

> Research that establishes historical evidence or understanding of other cultures may be indispensable for foreign and domestic policies; work that establishes more reliable texts or superior interpretations may be necessary to raise and maintain the standard of legal and cultural work. (vi)

This is the argument that returns time and time again as humanists justify their fields – from studying the past, we shape the future. For example, Beard (2010) points out that the classics have helped inspire more modern political movements and make sense of more recent political actions. Wolffe (2011) looks at how the study of religion can be used to shape the future – in particular how anti-Catholicism of the 1800's bears a striking resemblance to present day Islamophobia. Hampson (2011) argues that the study of literature helps us understand other cultural perspectives and helps prepare citizens to "engage in the debates about values and social choices that should be part of a healthy democratic society" (74). Nussbaum (2010), while not disputing that science and technology education is important, writes that what is "at risk of getting lost in the competitive flurry" as nations rush to make themselves economically viable, are abilities that are "crucial to the health of any democracy internally, and to the creation of a decent world culture capable of constructively addressing the world's most pressing problems" (7).

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These abilities are associated with the humanities and the arts: the ability to think critically; the ability to transcend local loyalties and to approach world problems as a "citizen of the world"; and, finally, the ability to imagine sympathetically the predicament of another person…. When practiced at their best…other disciplines are infused by what we might call the spirit of the humanities: by searching critical thought, daring imagination, empathetic understanding of human experiences of many different kinds, and understanding the complexity of the world we live in. (7)

Her essential argument, one that is echoed by humanists throughout the last half-century in particular as they fight extinction in the shadow of the robust sciences, is that "capacities for critical thinking and reflection are crucial in keeping democracies alive and wide awake" (10). Keeping the humanities as an integral part of education does not have to be at the expense of economic gain, but rather complements it.

Computers in the Humanities

Over the past sixty years, some humanists have been turning to computers as a way to revive their flagging disciplines – motivated certainly by fiscal concerns that their traditional disciplines were threatened and computers would perhaps find them a seat at the scientific table, but also by the idea that computers would be able to help move and change their disciplines in interesting directions. The first computers – large, noisy mainframes that took up entire rooms – were used sparingly in the 1950's and 60's, but by the 1980's and the advent of the microcomputer, many humanists were becoming more and more hopeful that the computer would bring about a revolution in the humanities – catapulting them from the realm of the forgotten to the cutting edge of scholarship (Hockey 1980, 2004). Computers – the hope was – would take over some of the drudgework of humanities research (counting, sorting, storing), and allow humanists to focus on the task of scholarship. But further to his, the computer would add rigor to the

humanist's research, putting the humanities on par with science in this regard (Bobley 2008; Hockey 1980). However, although this thesis deals primarily with the introduction of computers (and digitization) into the humanities, the computer was not the first type of technology to profoundly influence the humanities. Before discussing the evolution of computing in the humanities, this chapter will turn briefly to describe how other types of technology have transformed the humanities.

Reaching back centuries, one of the most influential pieces of technology to affect the humanities is the book itself. In fact, many branches of the humanities have come to be defined through this particular piece of technology. It is through engaging with text – the written word – that the humanist scholar comes to understand another person's perspective. As Miall (1990b) writes:

> Reading a poem or a novel is to commit not only cognitive and intellectual skills, but resources of imagery and emotion to that engagement with the text. The text may require that I shift my perspective on myself, on my position in the world, or on the world itself. An act of reading is a complex process of imagination, in which ideas, memories, images, feelings are reconfigured, enabling a new whole to exist within our being. (52)

To this day, some of the arguments against incorporating computers, the Internet, and in particular the practice of hyperlinking into humanistic study, are that this type of technology will take away from the sort of engagement that is enabled by the book – engagement that is seen as fundamental to invoking the transformative powers of a humanities education. Hyperlinking gives the reader more opportunities to choose the path they take through a text, but also takes away from fully engaging – from start to finish – with another person's experience (Cohen and Rosenzweig 2005).

Further to this, Benedict Andersen (1983) describes how the development of print capitalism in the sixteenth century, printing books in languages other than Latin, served

to connect "fellow-readers" through print, forming "in their secular, particular, visible invisibility, the embryo of the nationally imagined community" (44). The printed book became permanent and fixed, "capable of virtually infinite reproduction, temporally and spatially" (44). No longer were books subject to the whims of monastic scribes who had "'unconsciously modernizing' habits" (44), as they undertook the slow task of reproducing texts. Now the past could be fixed through print – in languages easily read and understood by more than a few, "which in the long run helped to build that image of antiquity so central to the subjective idea of the nation" (44). Books helped build a sense of history and culture.

The book is an old technology that continues to have a lasting influence on humanities research. However, there are more recent technological developments, particularly visual technology, that have changed how the humanities are taught, including the photograph and the slide. For instance, in archeology, a very visual field, pre-Internet, the slide had a profound influence over what was taught, how it was taught, and how power was dispersed in the classroom. Writing in the 1990's, Martlew describes how the traditional archeology lecture is illustrated through slides, with the lecturer using them as a way to move from subject to subject, "an aide memoire, rather than consulting notes" (1990: 43). Lecturers built up extensive slide collections that were kept in both personal and departmental collections. Some of the slides came from published materials and students would be able to easily come across them in their own reading. However, the most valuable slides were those that the lecturer personally collected by actually visiting archeological sites. These slides were often difficult to get, and as a result, stayed in the hands of the lecturer who wanted to make sure they were not damaged. As Martlew

(1990) describes: "The practical problems of locating a slide, displaying it and protecting it from loss or damage prevents lecturers in most cases from allowing students free access to their personal or departmental collections" (43). Students then, could not expect to have access to these slides anytime they wanted – they were able to see them when and where the lecturer decided. The student's role is to passively receive the knowledge that has been distilled through the lecturer, rather than having any hands-on contact with the material he or she is studying.

As another visual technology, television was also seen as a tool that could have a profound effect on the humanities. Writing in the 1980's, The American Commission on the Humanities (ACH) recommended that humanists use television to reach out beyond the classroom, to bring their work to a more general audience. Pointing to popular PBS programs such as such as *Dance in America*, *The American Short Story*, and *The Ascent of Man*, they encouraged humanists to take advantage of this technology to increase the reach of their disciplines, and also recognize that people were not only learning through books but through television.

> Our educational institutions must take into account the new learning styles created by the electronic media – habits of mind that have become as natural to many people as the textual and historical modes of thought characteristic of traditional, literature culture. Intelligently used, the media can enrich education and increase participation in the humanities. (141)

Some have also argued that television and video should be incorporated into the humanities, as something that should be studied, just as literature and the classics are (see for example Burns 1991 and Himmelstein 1981). For instance, in justifying why the study of music videos should be included in the humanities, Burns (1992) declares that:

> There are good videos, good studies of music video, and viewers who exercise aesthetic judgment in watching videos. That is not to say that

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music video should be part of the core curriculum at universities or should fulfill general education requirements. Music video is not part of the literary canon, nor should it be, nor is anyone saying it should be. But it is part of the humanities, and it should be studied by humanists and taught in specialized courses at universities, just as we study and teach obscure painters, writers, philosophers, theologians, composers, and even the obscure filmmakers whose work has inspired music video directors. (156)

To that end, humanists interested in television have studied the aesthetics of the medium and how it portrays culture (see for example Hartley 1992; Kaplan 1983, Newcomb 2007; Tichi 1991). Others, however, argued that television was a detriment to the humanities, and education more generally, homogenizing and commercializing culture and turning people away from literature (Federman 1992; Marc 1995). Today, of course, library shelves are full of analyses and critiques of television programs and genres. One can find multiple studies of popular series (see for example Calvin (2008) on *Gilmore Girls*, Howard (2010) on *Dexter or* Peacock (2007) on *24*, to name only a few.) The study of television is firmly entrenched in academia as a way to study human culture. However, books on the subject of television are more likely to be edited by academics in disciplines such as communication studies (Newcomb 2007), media studies (Dunleavy 2009), or the more broadly encompassing field of cultural studies, than in the humanities. Similarly, another visual medium, film is also seen by some as a way to pique people's interests in the humanities. For instance, Jurkiewicz (1990) argues that the film *Metropolis* could be incorporated into the study of history, particularly around the social and economic impact of industrialism and technology. Currently film is also firmly entrenched in academia, and although there are departments devoted in particular to the study of film, other academics have linked the study of film with the humanities (see for instance Post Script n.d.).

Using a popular medium to spark people's interest in the humanities is not unique to television or film. Before television made its way into classrooms, radio was also seen as a medium that could improve humanities education. Radio could enrich the humanities by broadcasting cultural events (concerts and plays), engaging students through sound (Paley 1935). A cheaper and more flexible option than television, the ACH (1980) wrote that radio "may also more easily accommodate learning in the humanities – by focusing intensely on ideas or challenging the listener's imagination" (143). The ACH singled out National Public Radio's documentaries on cultural figures such as James Joyce, Claude Levi-Strauss and F. Scott Fitzgerald, all funded in part by the NEH, as examples of how radio could help the humanities reach a wider public. But although these types of visual and audio technology were changing *how* humanists studied, and to some degree *what* they studied, it was the introduction of the computer into the humanities that captured the imagination of many as something that could potentially change the way humanists work, in a profound manner.

The first instance of a computer being used in the service of the humanities can be traced to 1949 and the Italian Jesuit Priest, Father Robert Busa. Busa wanted to create an *index verborum* that included all the words and related authors in the works of St. Thomas Aquinas. Having heard of computers, he set out to visit IBM's headquarters in the United States to solicit help (Bailey 1982; Busa 1980; Hockey 1980, 2000, 2004; Miall 1990a; Rockwell 2003). It was a mammoth task, which, when it was finished almost three decades later, would consist of over ten million words. This task would have been impossible, as Hockey (1980) notes, "without substantial mechanical help" (15).

Briefly, a word index is an alphabetical list of all the words that are found in a text. Usually there is also information about the number of times the word appears and information about where it appears in the text. When each word is presented with a list of all the words that surrounds it, a word index turns into concordance. Concordances are useful for humanities researchers who are looking for patterns and themes in texts. They can be used to study how languages change over time. They can also be used to determine what or who has influenced an author. One example of a very practical use of concordances is a project that was undertaken at the University of Nottingham in the United Kingdom. Scholars were designing a German course for chemists in order to help them read technical articles in the original language. By using a concordance, they found that first and second person verbs were used so infrequently in the types of articles these chemists would be reading, that they could be left out of the course. As Hockey (1980) describes, concordances and word indexes were made before computers; there were many researchers who spent their lives creating these tools for other researchers to use. But the creation of these concordances manually is very mechanical work and humanist scholars saw in computers the potential to perform this work much more easily, quickly, and accurately than a human (Hockey 1980).

To return to Father Busa, his work is seen as influential in sparking interest in using computers to create concordances. For the next two decades creating concordances was "the most widely used and reliable computer application in literary research" (Hockey 1980: 15). Throughout the 1950's and 1960's a select number of scholars (particularly at Cambridge and Cornell) enlisted computers in this type of work. Concordances and word indexes were built on large mainframe computers, the kind of

computers that took up entire rooms (Hockey 1980). For the most part, the early concordances were, in themselves, the end product, but in the 1960's computers – through quantitative methods that included counting word usage and comparing writing styles – began to be used to determine things such as authorship. For instance, computers were used to make authorship claims to do with the Bible. In 1963 Andrew Morton, a Scottish clergyman, used computers to claim that St. Paul wrote only four of his epistles (Hockey 2004; Morton 1965; Morton and Winspear 1971). Computers were also used to make other historical claims, such as determining the disputed authorship of the American Federalist papers (Hockey 2004; Mosteller and Wallace 1964). In the 1960's, humanities computing also became 'real' in the sense that journals (such as *Computers and the Humanities*) were born and conferences organized. Centers were formed that were devoted to the merger of computers and the humanities. In addition to linguistic uses, computers were also being taken up in archeology to catalogue and classify artifacts and create statistical calculations dealing with "frequencies of objects found" (Hockey 1980: 16).

However, until the 1970's, as Miall (1990a) describes, "the computer was mainly confined to a role as a research tool, and computers were used by only a small minority of humanities academics; there were very few courses in computing for the humanities student" (2). As Hirschheim, Smithson and Whitehouse (1990) confirm, before the microcomputer made its appearance in the 1980's, computing was pretty much the "sole province of the physical sciences" (7). It was a relatively small group of humanists that dealt with these large mainframes, churning out concordances and word indexes.

Throughout the 1970's and 1980's however, more scholars began seriously considering how computers could assist their work in the humanities. When the microcomputer was developed in the 1980's, things changed for the humanist and computers became more and more part of their work (Miall 1990a). No longer did the researcher have to depend on securing time with a mainframe computer or connecting over a static terminal. Computing was cheaper, easier to access, and increasingly user-friendly. This change, where researchers could be anywhere, anytime, as well as changes in interface developments, drew developers towards creating interactive tools and away from the concording model that processed information in batches (Bailey 1982). Journals, books, conferences, and societies devoted to the use of the computer in the humanities continued to spring up in larger numbers (Katzen 1991). By the early 1990's, the computer was firmly ensconced in the humanities. Not all humanists may have been using computers to do scholarly work, such as text analysis, but most were using computers in their daily work, if only for clerical purposes. Humanists were using word processors instead of typewriters, electronic card catalogues, submitting articles and monographs to publishers on discs, teaching with computers, and communicating with colleagues through computer networks. Computers were firmly entrenched in the "creation, collection, storage, and dissemination of humanities scholarship" (Katzen 1991: iv).

The use of computers in the humanities can be described in terms of two fairly distinct, yet overlapping waves. The first wave began with Busa and continues to this day. It is characterized by a concentration mainly on textual analysis (see for instance Bailey 1982; Hockey 1980). The Digital Humanities Manifesto 2.0 (a document created

at UCLA by a group of digital humanists and then sent online for input from digital humanists around the world) describes the first wave this way:

> Like all media revolutions, the first wave of the digital revolution looked backward as it moved forward. Just as early codices mirrored oratorical practices, print initially mirrored the practices of high medieval manuscript culture, and film mirrored the techniques of theatre, the digital first wave replicated the world of scholarly communications that print gradually codified over the course of five centuries: a world where textuality was primary and visuality and sound were secondary (and subordinated to text), even as it vastly accelerated the search and retrieval of documents, enhanced access and altered mental habits. (UCLA Center for Digital Humanities 2009: para 10)

This first wave is described as more quantitative, with an emphasis on the "search and retrieval powers of the database, automating corpus linguistics, stacking hypercards into critical arrays" (para 11). Writing in that time period, Hockey (1980) compares computer use in the humanities to how the computer was being used in the sciences – both humanists and scientists were using the computer to perform their onerous, mechanical tasks "such as searching, sorting and counting" or the "time-consuming tasks of performing long and complex calculations" (9). Hockey was writing for humanists who may be new to the idea of incorporating computers into their work, and she emphasized that humanists needed to remember "the computer is only a machine" (9). The computer does what it is told to do. If anything does go wrong, it is the fault of the researcher, not the machine. Her point is that the computer should be seen as a tool – a logical tool that will perform well if it is programmed correctly. The interpretation of data, the prescribing of meaning, is left up to the humanist.

A collection of papers published after the 16th International ALLC Conference and the 9th International Conference on Computers in the Humanities that was held in Toronto in 1989, shows a definite emphasis on these sorts of computational, textual

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analyses. For instance, Flikeid (1990) writes about using computers to compare linguistic use between Acadian French communities in Nova Scotia, in order to determine how language changes from community to community. Interviews were transcribed, encoded, and word usage compared through both micro and mainframe computers. Lessard and Whitfield (1990) describe using computer textual analysis to analyze the use of Quebec French in the 'roman-journals' of the 1960's. Previous to their research, the generally held belief was that authors were using joual in their own particular ways. Their computer-assisted study showed there were similarities.

> [W]hile it is certainly true that each of the authors…has adopted his own strategy towards joual, the range of elements found in our corpus, their recurrence from one book to another, and the systematic nature of their use at every linguistic level suggest that such literary use of 'joual' is more than simply a question of individual or stylistic choice. (44)

Others, such as Hockey, Freedman and Cooper (1990) described the creation and use of a digital text searching facility for undergraduates in language and literature subjects. Others were using computers to find patterns in music (Kippen and Bel 1990) and create databases (Calzolari and Zampolli 1990; Tompa and Raymond 1990). Still others were struggling with how to bring disparate data together in one database that could then be analyzed coherently (Galloway and Kidwell 1990). The focus clearly at this point of time is largely on creating electronic texts and databases, with an eye towards the potential of using these databases for analysis, or in the case of using computers for analysis, the focus is still clearly on textual analysis in the form of word counts and comparisons.

In that vein, many humanists who used computers in that era did not see the use of computers in the humanities as substantially changing humanities work. The addition

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of a computer was not enough to constitute a new discipline. The computer was in the service of the humanities; it could do the 'non-thinking' chores, but could not in itself radically change research (Miall 1990a). The computer is a powerful tool; it can take on work that would be very difficult, or perhaps even impossible for a researcher to do alone, without the help of the computer. But the research methods of the humanist, the ways that humanists make sense of data, are not something the computer can take on. The computer may be good at storing and sorting data, but it is still the humanist that interprets this data. As Miall (1990a) describes:

> For example, sorting literary texts (such as the complete works of Shakespeare) on the computer allows rapid access to any word or combination of words that I choose anywhere in the text: but the interpretation of the words that I have found remains with me, not the computer. The computer cannot 'read' text, except in a purely mechanical sense. Similarly, a well-designed relational database will enable a significant domain of historical information to be stored and analyzed: but the rationale for designing the database requires the powers of analysis and imagination of the historian. (4)[27]

Before moving on to describe the second wave of computer use in the humanities, it should be noted that during this first wave, despite the emphasis on textual analysis and the use of computers for primarily counting, sorting, and analyzing patterns, there were a few humanists in the 1980's who were trying to create simulated environments (Bantz 1990). For example, scholars in the UK developed a role-playing environment based on life in seventeenth century France. Scholars at Carnegie Mellon University's Center for

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[27] As an example of work from this era, Blombach (1982) used computers to analyze Bach's Chorales. The goal was to determine which voices (soprano, alto, tenor, bass) were more musically "interesting." Interesting is, of course, a subjective choice. Blombach, in setting up this study, equates interesting with variation. The computer was used to determine whether the chorales were mostly harmonic or counterpunctal (the counterpoint being more 'variable'.) While the computer was able to analyze patterns, it was the humanist that placed value on these patterns.

the Development of Educational Computing created an interactive video environment in which a severe burn victim is demanding that his treatment be stopped and he be allowed to die. The point of this simulated environment was to have students wrestle with the moral and ethical decisions at play in this situation. However, as Bantz (1990) notes, these projects did not get a lot of support. They took a lot of time and resources. The faculty involved did not feel their work – especially the time and financial requirements – were adequately understood. As such, these types of experiments were few and far between.

However, as computers became smaller and cheaper, software designers began experimenting more with sound and visuals. We are now in what has been called the 'second wave' of digital humanities, one in which visuals and sound are given as much prominence as text. This second wave is characterized as more "qualitative, interpretive, experiential, emotive, generative in character" (UCLA Center for Digital Humanities 2009: para 3). What is different about this second wave is that many think that it is not as text-focused; text, rather, becomes embedded into other forms of multimedia. In this second wave digital toolkits are used "in the service of the Humanities' core methodological strengths: attention to complexity, medium specificity, historical context, analytical depth, critique, and interpretation" (para 11). Early on in this second wave humanists were starting to use hypertext to create dynamic documents and make use of the Internet (Economou 1996), creating, for example, projects like the British Library's Electronic *Beowulf* Project "which created an extensive multimedia database of digital images of the famous eleventh-century manuscript. These include important information for researchers, such as fibre-optic readings of hidden letters and ultra-violet readings of

erased text" (84). The original text has suffered damage and digitization has helped "render the text more legible than the original" (ACLSC 2006: 22). In addition, researchers have been able to ""peel back" successive conservation treatments to see how the varying states of the artifact over time have influenced interpretation" (ACLSC 2006: 22). The Electronic *Beowulf* is used as a source to confirm close readings, and also enable close readings of the text. This is an example of an artifact that was difficult, if not in some cases impossible, for scholars to study in person. Even if a scholar was granted access to this material in print form, they were not necessarily able to read every part of it. As Cohen and Rosenzweig (2005) point out:

> [U]sers of the Anglo-Saxon *Beowulf* manuscript in the British Library
> could not see letters on the edges of each page because of a protective
> paper frame added to the manuscript in the mid-nineteenth century.
> Digitization with a high-end digital camera and fiber-optic lighting
> revealed the missing letters. Some of those missing letters offer the only
> extant record of certain Old English words. (para 11)

More recently, the digital humanists in this second wave have also turned to creating immersive environments, inventing games, and are generally more concerned with the visualization of data, than the digitization of text. That said, there are still many digital humanists who are deeply ensconced in textual analysis, including the creation of word indexes and concordances. However, increasingly digital humanists who are interested in textual analysis are concentrating on creating ways to mine the complex digital databases that have sprung up in the last two decades. As will be discussed further in Chapter Four, there is a current push in the digital humanities community to build programs that will be able to deal with these large databases. Many digital humanists concur that there is a wealth of resources at their fingertips, however to date there has not been enough emphasis on creating ways to mine these resources. The second case study

in this research – The Orlando Project, which is explored in Chapter Six – is dealing with this issue. The people working on Orlando are digitizing bibliographical information about women writers connected with the British Isles, but they are also creating a search engine that will draw links between these writers based on a host of socio-economic and political themes a researcher might be interested in.

This second wave of digital humanists is also focused on creating open source material – both by digitizing humanities material to make it more accessible and also creating tools that people outside of the academy can use to participate in the building of the human record. This push towards including more people in the humanities through the use of digital technology has been called "citizen humanism" (Davidson 2009). The first case study in this research – the Center for History and New Media – focuses on this type of work.

Digital humanists are also, as mentioned, very interested in visualization techniques; finding ways to capture and store images, but also represent information visually, rather than simply through text. Some of these digital humanists are following in the footsteps of the early pioneers of the 1980's and creating digital worlds, often in game form, that deal with humanities subjects. The third case study in this research – the Electronic Arts Game Innovation Lab in Chapter Seven – is an example of one such project.

Essentially, digital humanists of the twenty-first century have moved beyond simply using the computer as a tool to build databases. They are attempting to harness the power of inexpensive, user-friendly Web 2.0 applications to build the human record. They are using computers to develop new search and retrieval systems that will make

sense of the vast digital repositories that have been diligently created in the last two decades. Digital humanists are also concentrating on finding ways to manipulate the digital databases that have been created and make them more interactive. Others are more interested in creating immersive, interactive worlds that will bring new perspectives to ancient themes.

The Digital Humanities and the Sublime

The use of computing technology in the humanities is often accompanied by the promise and hope that this technology will revive the humanities (Bobley 2008; Bogost 2010; Davidson 2008; Kirschenbaum 2010; Pannapacker 2009c; Unsworth 2010). Throughout history technology has been imbued with sublime promise that it will improve the quality of people's lives and bring people together by fostering peace and prosperity. Technology (be it the railroad, electricity or the Internet), the story goes, has the power to lift people out of the quotidian and the banal, offering transcendence of some sort (Marx 1964; Nye 1990). These same themes resonate throughout the history of the digital humanities. This section will begin by delineating the history of the sublime, and its origins in Ancient Greece. It will then move on to describe several incarnations of the technological and digital sublime. Finally, it will discuss how elements of the sublime are incorporated in past and current thinking about the digital humanities.

The Sublime

The history of the sublime is usually traced back to the first century CE and the Greek philosopher Dionysius Longinus. Although there were people before him who wrestled with the sublime, Longinus is widely attributed with writing "the first properly theoretical discussion of the sublime" (Shaw 2006: 12). Longinus was a teacher of

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rhetoric, who wanted to pass on to his students how their words could elevate and spellbind an audience, lifting them out of their banal, everyday experiences. The point of the rhetorical sublime for Longinus was to "ravish and intoxicate the audience" (Shaw 2006: 14). The pedagogical problem Longinus faced however is that it is very hard to teach someone *how* to be sublime. As Shaw (2006) puts it, what distinguishes sublime rhetoric from other forms of rhetoric is the "stress on a mode of speech that is indeterminate or without form" (12). In other words, one can point to the *effects* of sublime rhetoric – such as ecstasy, wonder and astonishment – but it is not something that can be taught with a simple set of instructions (Battersby 2007; Shaw 2006). This sense of mystery, formlessness and genius associated with the rhetorical sublime is a theme that reoccurs through the sublime's many incarnations, as does the theme of domination and ravishment. For instance, as will be examined later, the technological sublime rests on the notion of humanity's domination over nature.[28]

Most discussions about the sublime usually begin with Longinus and then jump ahead to early-eighteenth century England where many authors and critics took up the idea of the sublime and elaborated on it (Nye 1994).[29] Samuel Monk (1960) writes that many versions of the sublime were developed around that time based on interpretations of Longinus, and that the study of the sublime in England "comes very near being a study

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[28] It should be noted, however, that nature is also essential to the understanding of Longinus' sublime. Although his focus is clearly on language and rhetoric, it is natural phenomenon – such as a great river, or the vastness of the ocean – that fuels a person's ideas of grandeur and greatness, that in turn informs the rhetorical sublime (Shaw 2006).
[29] Nye (1994) points out that the sublime did not disappear between Longinus and eighteenth century England. However, instead of being used as an adjective or a noun, it was a verb "meaning to act upon a substance so as to produce a refined product" (4). The alchemists, in their quest for the philosopher stone, would subject substances to sublimation.

of English thought and arts, for we find the idea applied to rhetoric, to literature, to painting, to sculpture, to music, to biblical criticism and to natural scenery" (3). In the eighteenth century and in the Christian tradition, this notion of sublimity gets tied up with the divine. Scenes of natural sublimity are sublime because they point to the existence of a divine force at work.

One of the most notable eighteenth century figures who took up the idea of the sublime was Edmund Burke (Abraham 2006; Nye 1994). Burke read Longinus during his days at Trinity College (it was a required text) and set about to outline the elements of a sublime experience (Burke 1756/1958: xvi-xvii). His purpose in writing his enquiry into the sublime in the mid-eighteenth century, was to distinguish between the sublime and the beautiful, something he thought his predecessor Longinus had failed to do (Monk 1960). Burke concludes that beauty transcends the banal though "pleasure and identification" while the sublime lifts us out of the quotidian through "astonishment, awe, terror, and psychic distance" (Mosco 2004: 23).[30] For Burke the sublime is something that overwhelms the senses and fills a person's mind so that they cannot contemplate anything else, effectively overpowering a person with a sense of astonishment (Vernon 2007). As Nye (1994) puts it: "The encounter with a sublime object was a healthy shock, a temporary dislocation of sensibilities that forced the observer into mental action" (6). For Burke, terror is an essential part of the sublime. This terror, however, has to be

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[30] For Burke, the sublime was imbued with more masculine qualities; it dealt with large objects that overwhelmed and were linked to pain, terror, and awe. The beautiful, by comparison, was linked with ostensibly more feminine qualities, small objects that evoked more pleasing feelings, such as love, tenderness, pity. This gendered link, which also carries on through the work of Kant, has been challenged and disputed. For instance, in the work of Mary Shelley there are competing versions of the sublime that do not fit neatly into gendered categories (Shaw 2006).

experienced at a safe distance in order for the viewer to gain any sort of pleasure from it (Shaw 2006). Terror is also associated with obscurity – that which we cannot immediately grasp or comprehend provokes terror, however, once we become used to it and are able to understand what is before us the terror subsides, as does the sublime experience.[31] The sublime is always at risk of slipping into the more bland realm of the beautiful – if one is repeatedly exposed to the sublime its effect lessens in intensity.

This sense of an overwhelming, intense experience is taken up in another influential text on the sublime. In *The Critique of Judgment*, Kant (2007) identifies two types of sublime: the mathematical and the dynamical. The mathematical sublime refers to the imagination being overwhelmed when an experience is too great to be taken in all at once. In contemplating the universe, for instance, one may be able to produce calculations to figure out its size, but it is impossible to fully grasp its enormity based on senses alone (Hertz 1985; Shaw 2006). The sublime moment comes when, despite this initial overwhelming experience, the mind is able to understand the concept of an infinity that is essentially ungraspable. This is not an easy realization.

> Kant describes a painful pause – "a momentary checking of the vital powers" – followed by a compensatory positive movement, the mind's exultation in its own rational faculties, in its ability to think a totality that cannot be taken in through the senses. (Hertz 1985: 40)

Essentially, by being able to conceive of infinity as some sort of whole and understand ideas that exceed our sense perceptions or empirical observations (Shaw

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[31] It might seem that for Burke, the source of the sublime is concrete objects found primarily in nature. However, it could be argued that Burke's sublime also relies on the power of language to represent what is obscure (and therefore terrifying) but also has no concrete form, such as death or the nature of existence (Ashfield and deBolla 1996; Shaw 2006). Shaw (2006) points out that the text is ambiguous on this point.

2006), we are left with the understanding that "we are beings with capacities that transcend the limitations of our finite phenomenon existence" (Crowther 1989: 100).

The dynamical sublime refers to the emotions one experiences in the face of overwhelming forces of nature, such as a volcano or a powerful storm at sea. But again, the sublimity does not reside in what is being observed, but in how it is processed. We recognize that we are weak in the face of nature, but through experiencing this from a safe distance, we experience a sense of delight that we are free from nature; it does not hold power over us (Burnham 2000; Nye 1994; Shaw 2006). As Kant describes:

> And we like to call these objects sublime because they raise the soul's fortitude above its usual middle range and allow us to discover in ourselves an ability to resist which is of a quite different kind, and which gives us the courage [to believe] that we could be a match for nature's seeming omnipotence. (Shaw 2006: 82)

The technological sublime takes this Kantian notion a step further. The technological sublime is not satisfied with being a "match for nature's seeming omnipotence" (Shaw 2006: 82) (albeit from a safe distance) but rests on the idea of being able to master nature and bring it under human control.

Technological and Digital Sublime

The sublime came to be associated with technology primarily through the work of Leo Marx.[32] In *The Machine in the Garden* (1964) Marx, looking back at the media of the mid-1800's, describes how writers saw incredible promise in the 'new' technology of the day – namely steam engines and railroads. These writers, he says, would "adduce the power of machines as the conclusive sanction for faith in the unceasing progress of

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[32] However, Marx was influenced by the work of Perry Miller (1979) who had taken up the idea a few years before Marx published his influential book in a speech (later turned essay) in which he talked about America's fascination with everything from the steamboat to modern plumbing (197-198).

mankind" (192). Marx used the term 'technological sublime' to describe how technology was seen in this era as being the conduit of progress, democracy, peace, equality and freedom. Technology (in particular the railroad) would annihilate time and space and bring people together. This would, in turn, lead to more democracy. Technological development was a sign of material progress and prosperity (Marx 1964; Meikle 2003). Technology even had the power to make people smarter, by elevating their minds above the banality of everyday life and forcing them to look at the world in new and inventive ways. Just as natural wonders – like mountains and oceans – force humans to reconsider their lives, so too would technology. For instance, in 1832, Charles Caldwell writes:

> Objects of exalted power and grandeur elevate the mind that seriously dwells on them, and impart to it greater compass and strength. Alpine scenery and embattled oceans deepen contemplation, and give their own sublimity to the conceptions of beholders. The same will be true of our system Rail-roads (sic). Its vastness and magnificence will prove communicable and add to the standard of the intellect in our country. (Marx 1964: 379)

The railroad had "captured the public imagination" (192) and become a symbol of industrialism; a symbol that needed no words to convey promises of "peace, quality, freedom and happiness" (192) that were to follow.

However, despite the powerful rhetoric surrounding the railroad, eventually it became clear that it would not live up to its promises. As Nye (1994) notes, the railroad was not an egalitarian employer in the mid-1800s. It was a hierarchical structure and the site of much labor conflict after wage cuts and frequent accidents occurred. It did not unite the country as promised either, as the South became increasingly dependent on an industrialized North (71). But more than that, the romance of the railroad, and the

sublime experience it promised, faded. Nye (1994) points out that this is a recurring theme with the technological sublime.

The train was not the only form of technology that was hailed as a peacemaker only to subsequently fall short of its promises. The telegraph was also heralded as the link that would connect people across nations and around the world, promoting peace and understanding (Standage 1998). Similar promises were also made when the telephone, radio, and television were invented. Electricity was also seen as a harbinger of peace. As Carolyn Marvin (1988) writes, the predictions were grand: electricity would create abundance, and with this prosperity there would be no need for war. The promise of electricity was expansive – electricity would penetrate all forms of life, picking up where steam power had failed. Electricity promised new work and domestic bliss. "Abundant, easily distributed, versatile electricity would reverse the centralization of production in factories, lead to the rise of clean cottage industries, unify the home and the workplace, and lower the divorce rate" (Marvin 1986: 203). Crime rates would drop as cities were lit up at night. Streets that seemed dingy and in need of urgent social reform by day were made pure at night as lights brought some areas into prominence and hid the undesirable in the shadows. Electricity would also erase class differences once and for all.

> Some nineteenth century observers believed that the concentration of labor around steam-powered urban factories had made the visible differences between the working life of the city and the leisure life of the country starker than ever. They looked to electrical manufacturing and transportation to create a homogenous landscape that would heal the breach between classes which steam had exacerbated. (Marvin 1986: 203-204)

Although I have singled out the railroad and electricity, there are many other examples of technology that has been imbued with similar promises. For example, Nye

(1994) describes how factories between 1830 and 1930 became tourist attractions as people flocked to see how water, steam, and then electricity became power sources. Tour guides were employed to bring visitors around the factories so that they could witness "frightening yet exhilarating forces under human control" (132). He uses the term "industrial sublime" to describe this phenomenon. He also uses the term "geometrical sublime" to refer to feats of architectures such as bridges and skyscrapers that were also seen as having the power to elevate the human mind beyond the quotidian. Most recently the Internet and digital technology have been imbued with these promises. Much of the first writing about the Internet sounds similar to the writing surrounding other 'new' technology over the past two centuries; the Internet would bring people together who otherwise would not have a chance to meet and, because of this, foster understanding, democracy, community, and economic growth (Barney 2004; Mitchell 1999; Wellman and Gulia 1999). On the other hand, there were also the detractors who saw the Internet as an anti-democratic, isolating force that would pull people into private worlds and enable them to recede from any responsibility for the community they lived in, as they segregated themselves into like-minded enclaves online (Barney 2004).

These sorts of warnings about new technology are not atypical. Mosco (2004) notes that "[p]aired with the sublime is the process of demonization, which also encases its object in a transcendent aura, particularly when it is applied to technology" (24). For instance, the railroad was also seen as a disruptive force that would interfere with the normal patterns of transportation (namely the horse) and it was even considered by some to be so powerful that it could drive people insane (24).

The Digital Humanities and the Sublime

In a manner that is strikingly similar to the promises made about other technologies, computers have been charged with the task of breathing new life into the flagging humanities, restoring them to their former glory. Many digital humanists are hopeful that computers will bring back prosperity and unity to the humanities (Bogost 2010; Davidson 2008; Kirschenbaum 2010; Pannapacker 2009c; Unsworth 2010). Through computing, scholars from different disciplines will come together, including most notably, scholars from both sides of the two cultures divide. These themes can be traced as far back as the 1960's and continue to the present day.

As mentioned, in the 1960's some humanists saw in the computer the potential to free humanists from tiresome 'drudgework'; computers could be used to do the onerous work of calculating and counting, freeing up the humanist to think and do the 'real' work of scholarship. Not only would the computer be able to take over this type of work, it would do it much faster and with greater accuracy (Cowgill 1967; Green 1967; Smith 1967). Bowles (1967) likened the influence of the computer to the industrial revolution, in that it would bring about similar profound changes, most notably through its speed and timesaving capabilities. "Its incredible speed allows the scholar to accomplish in a short time what would otherwise take him a whole lifetime of drudgery to accomplish" (8). The computer's large memory and calculating capabilities would be able to find correlations and patterns that the human mind would miss. Unlike a human, its work would not be waylaid by "the vagaries of human fatigue, periods of interruption, or even of mood" (9). Further to this, the computer would even assist humanists in clarifying their own goals. Humanists would have to explain to computer programmers in very basic and

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lucid ways what it was they hoped to accomplish, and as such would be forced to clearly articulate their plans, processes and *why* they were undertaking this research in the first place.

Not everyone during this time period however was enamored with computers. Anthony Oettinger's collection of essays *Run Computer Run: The Mythology of Educational Innovation* (1969), takes umbrage with the view that technology, particularly computer technology, would transform education. While he concedes that computers may be useful for educational administrators in the service of "routine clerical business" (181), when it comes to the actual business of education – teaching and learning – computers, as he sees them, are simply "expensive page turners" (181). Computers, he writes, are unable to handle complex concepts. A computer may be able to "recognize misspelled words and to pick out preselected key words," but "[r]esponses to requests like 'describe a relationship', 'define a concept', or 'explain how something works'" (181), are well beyond the realm of current computer capability. Further to this, he has several warnings for the cheerleaders who champion computers as a way for people to access the great libraries of the world without leaving their homes, or as tools to tackle and solve "more exciting tasks and problems" (7). First and foremost, these endeavors will be hugely expensive and he wonders where the money to pay for this will come from. He also disputes the idea that access to information through computers will flatten birthrights and give everyone an equal chance in the education system. He warns that digital archives might be easily co-opted, leading to the homogenization of information. He is also very concerned that computers will become replacements for people, particularly teachers who he sees as essential to the education system.

Nonetheless, throughout the 1970's and 1980's humanists continued to imbue the computer with transformative properties (Bailey 1982; Hirscheim et al. 1990). The use of computers in the humanities was declared to be "innovative and revolutionary" (Bailey 1982: 1). The computer had the potential to multiply "the power of human imagination" (Bailey 1982:1), again by eliminating much of the drudgework that humanists would have to do, thus freeing up their minds. As well, the computer would be much more precise and exact than a human, which in turn would elevate the quality of the humanist's work.

This hopefulness continued throughout the 1990's and into the early 21st century. Mullings et al. (1996) write that the computer applications available at that time have the potential to "radically change what they do" (x) by allowing humanists to work faster, "on an almost unprecedented scale" (x). Other programs "change the nature of scholarship itself, making possible investigations which were formerly inconceivable" (x). They also talk about how "exciting applications such as hypertext, multimedia, text and image databases, allow the integration of different kinds of media, a sophistication which humanists need and appreciate" (x). Susan Hockey (2000), one of the early advocates of computers in the humanities, writes that electronic access to texts, being a 'recent' development in the 1990's is often seen "as an end in itself" (3). She goes on to prophetically say: "But it is only the beginning…The real power of electronic texts is that they can be searched and otherwise manipulated by computer programs in many different ways" (3). The ability of computers is much greater than simply finding words or pages, but rather they are "good at mechanical processes, such as searching, counting, and sorting into alphabetical or numerical order. They perform these tasks not only much

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faster than a human being, but also very much more accurately" (3-4). She writes that the "computer is best at finding features or patterns within a literary work and counting occurrences of those features" (66). The computer can "provide an overall pictures which would be impossible to derive accurately by manual methods" (66).

As mentioned, often technology that is seen as sublime is simultaneously demonized (Mosco 2004). There were – and still are – many who are much more cautious about becoming fully enamored with the computer (following in the footsteps of Oettinger). Humanists in the 1980's who were interested in computers often found themselves having to convince their colleagues that there was value in what they were doing. Traditional humanists were not easily won over. As Deneley (1990) writes:

> The pioneers in the field were doing something which instinctively aroused hostility (and fear). The quantitative emphasis of what they were doing was hardly designed to endear their work to conservatives and there was a certain amount of snobbery about 'getting machines to do one's thinking'. (17)

The champions of the computer faced a lot of pressure from many humanists who thought their disciplines were better taught without computers, in more traditional ways. Mullings et al. (1996) write that "many viewed with suspicion and fear the colleagues who made this technology central to their scholarship. Technology for man was antithetical to the humanistic tradition of investigation, debate, and delivery of materials" (ix). Historians in particular felt that computing techniques emphasized scholarship that focused on the "repetitive at the expense of the unique" (Denley 1990: 18), which threatened to disrupt much of the foundation of their scholarship.

During this time period many acknowledged the potential benefits of computer-based research, in particular speed, accuracy and the ability to deal with large quantities

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of data. However, there was also a long list of disadvantages. First of all, there was the fear that humanists would end up concentrating on software development at the expense of scholarship. There was the potential for polarization or increasing divisions between those who took on computer-based work and those who did not. There were also worries that computer-based work would be the only research to get funding, leaving the non-computer researchers with empty coffers. As a result researchers would develop projects, not because they were academically interesting, but because they incorporated computing. In addition, the already scarce funding would go to computers, rather than the bread and butter of humanities research – manuscripts, books, and texts. If computers and computing software were purchased at the expense of monographs, libraries could be left with gaping intellectual holes and a load of out-of-date computing equipment. There was the concern (which, as will be noted in later chapters, still exists) that although computing technology may be valuable and interesting work, it would eventually become obsolete, leaving research inaccessible (Katzen 1991; Kenny 1991).[33] Some also pointed out that most computing programs were simply too expensive and complicated for regular humanities scholars to use. As well, there were stringent warnings that computers could actually make people redundant. (If a computer can make a concordance, why employ a person for the job?)

Connor's (1991), writing about the classics, expresses the ambivalence that many humanists were feeling at that time in regards to computers. He admits that he was one of the early believers who thought that computing technology would provide classicists with

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[33] At that time, scholars did recognize that there was the need for some sort of international standards. To that end, the Text Encoding Initiative was started in the 1980's and continues to this day.

new ways of approaching their field and open up new sorts of questions. "It (the computer) has contributed to the intellectual invigoration of the field, in my view, but far less than I would have expected or hoped" (52). Although there might be possibilities in computer-based work, Connor observes that the computer had been largely used for nothing more than word processing and managing bibliographies.

Ross (1996) warns that digital humanists will have to be vigilant about preserving their material. He also warns that computers do not help archeologists become more objective. They can help a humanist be more "rigorous, vigilant and exhaustive," but "do nothing to relieve the critical importance of interpretation" (174).

In response to such critiques, however, Hockey (2000) assures that what the computer can do is "often best treated as an adjunct to other research methods" (67). She continues to emphasize that the computer is a tool.

> It can do some things very well, but much should be left to the judgment
> of the scholar, both to situate the project in the broader range of
> scholarship on the particular topic and to interpret the results within the
> context of other research. (67)

Hockey also emphasizes that research should not be approached with the question 'what can a researcher do with a computer', but rather how can the computer help research. She writes that although some people "are deeply suspicious of numbers, which they feel are alien to their normal way of working," a word count "can serve to reinforce a feeling about a text or show that what intuitively seems rare or very infrequent is not in fact so" (66).

Currently, the digital humanities is still seen as a way to lift the humanities out of their tired rut. By giving humanists access to more digital material and providing innovative ways to query this material, they will be able to create new, exciting

scholarship (Schreibman et al. 2004.) Brett Bobley (2008), the Director of the Office of

Digital Humanities in the United States, describes the impact of digitization this way:

> Never before have scholars had access to such a huge volume of materials.
> This kind of scale adds new challenges and new opportunities. A scholar
> of 19th century literature could never hope to read every book published in
> the 1800's – but a computer can. A historian who is studying World War
> II could never hope to read every newspaper editorial about the war – but
> a computer can. In the sciences, mining this data – an approach called
> "data driven scholarship" – has enabled incredible leaps in fields like
> biology, where technologies like shotgun gene sequencing allows new
> species to be discovered on a computer before they're ever seen in the
> wild. (para 9)

The digital humanities, it is presumed, may even go so far as to unite the disparate

disciplines of humanities, or at least find some sort of common ground. As Friedlander

(2009) writes, the humanities at present are not united in that they comprise of "an array

of disciplines from archeology and art history to literary criticism to history of science,

each with its own literatures, methods, and traditions" (5). However, she notes that when

it comes to digitization and computing "there is a sense that there is sufficient common

ground to articulate a shared infrastructure of tools, services, and collections that would

reduce unnecessary redundancy, allocate human and information resources efficiently,

and, most interestingly, enable a different kind of scholarship" (5). Further to this, the

digital humanities, by its very nature requires collaboration between people who are

schooled in the humanities and people who are schooled in computer science. As such, it

has the potential to bring together the two cultures, bridging a divide that has often been

marred by acrimony and at times outright hostility.

The promises that permeate much of the current thinking about the digital

humanities – promises that center on peace, unity, and prosperity – are themes that are

prevalent through the different incarnations of the technological and digital sublime. The

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digital humanities will unite disciplines that have been largely sequestered behind impenetrable walls. It will bridge the two cultures divide. It will restore the humanities to their once exalted status, as important disciplines that produce work that is relevant, necessary, and interesting. The case studies that follow in this research, all deal in various ways with these promises, paying particular attention to how the digital humanities purports to be changing humanities research, and how this actually manifests as projects are conceived and sent into the service of research.

Chapter Four

The Digital Humanities

When a word or a term makes its way into the Oxford English Dictionary (OED), it is a marker that the term is officially ensconced in the English lexicon. This dictionary is constantly evolving, updated every few months to reflect the changing language. Most recently, the addition of OMG (an abbreviation for oh my god), LOL (laugh out loud) and BFF (best friends forever), among others, caused a flurry of media attention, with many media pundits saying the venerable dictionary had gone too far (see for instance Leung 2011; OMG!!! OED!!! LOL!!! 2011; Petri 2011). According to the OED, while Internet slang is firmly ensconced in our vernacular, the term digital humanities is not. It is perhaps not surprising that digital humanities is not found in this dictionary, reflecting the fact that the digital humanities is still in an emergent state (Borgman 2009). Even those who identify as digital humanists continue to debate what exactly this means, and where the borders of their field lie (Svensson 2010). For instance, students interested in the new PhD in digital humanities being offered by King's College London will find on the school's webpage this caveat: "Digital humanities is a young field in rapid development. Hence definitions of it are both difficult to give and potentially misleading" (King's College London 2011). However, it is abundantly clear, when you log on and click through the increasing number of projects described as digital humanism, including projects underway at King's College, that the digital humanities refers to research that combines computer technology with branches of learning that deal, in some way, with human culture (Katz 2005; Reiger 2010; Svensson 2010). As Hockey (2004) describes, the field is concerned with "the applications of computing to research and teaching within

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subjects that are loosely defined as "the humanities," or in British English "the arts""
(para 2). Loose is an apt description. The digital humanities is not restricted to fields such
as philosophy and literature, but also includes areas one does not usually find in a
humanities syllabus. Along with history, literature, and art, digital humanists are working
in information studies, film and media studies, archaeology, geography, and even the
social sciences (Presner and Johanson 2009). Because the digital humanities extends its
reach into any area of study that deals with human culture it is often called an "umbrella
term" (Bobley 2008; Presner and Johanson 2009; UCLA Center for Digital Humanities
2009). For Brett Bobley, the Director of the Office of Digital Humanities at the National
Endowment for the Humanities, the granting body that many digital humanities projects
in the United States depend on, the digital humanities captures a wide array of topics
under this umbrella:

> Under the digital humanities rubric, I would include topics like open
> access to materials, intellectual property rights, tool development, digital
> libraries, data mining, born-digital preservation, multimedia publication,
> visualization, GIS, digital reconstruction, study of the impact of
> technology on numerous fields, technology for teaching and learning,
> sustainability models, and many others. (Bobley 2008: para 5)

This list might seem vague and open ended. However, Bobley points out that all
of these activities, in some way, involve cultural heritage materials. (This term is meant
to capture a wide array of primary source material such as "books, newspapers, journals,
paintings, music, film, audio, sculpture" (Bobley 2008: para 6). Although much of the
thinking around what the digital humanities entails is meant to be inclusive and diverse
(Interview with Key Informant 2), it should be noted that much of this "cultural heritage
material" presume literate, recorded culture, and excludes other forms of cultural
activities and traditions that do not fit this mold.)

The term digital humanities can be traced back to a seminal text in the field, *The Companion to Digital Humanities* (Schreibman et al. 2004), an edited book that brought together scholars from disparate fields who were using digital technology in their work. Since then, as Kirschenbaum (2010) describes:

> Digital humanities has gone from being a term of convenience used by a group of researchers who had already been working together for years to something like a movement. Individual scholars routinely now self-identify as digital humanists, or "DHers." There is an unusually strong sense of community. (4) (see also Fraistat 2011; Rieger 2011)

Scheinfeldt (2010) also describes the digital humanities as a community, "or more precisely, as a set of overlapping personal communities, each one centered around individual, self-identified digital humanists" (para 3). In this sense, these communities, he proposes, "look a lot like a social network" (para 3).

In addition to addressing a wide variety of subject matter, digital humanities is an umbrella term because it deals with a wide array of practices from text mining, to data visualization, to gaming. Rather than being a single unified entity, some digital humanists have described what they do as "an array of convergent practices" through which people explore a world where print is no longer the only (or normative) form of disseminating and producing knowledge, a world where "digital tools, techniques and media have altered the production and dissemination of knowledge in the arts, human and social sciences" (UCLA Center for Digital Humanities 2009: para 9). Still, despite any sense of community – and clearly there is one as evidenced through the growing number of digital humanities conferences, journals, programs, and centers that are emerging – there is much consensus that the digital humanities is still very much in flux (see for instance Borgman 2009; Rieger 2010). As Svensson (2010) describes:

> The territory of the digital humanities is currently under negotiation. While there is no doubt that the field is expanding, it is not entirely clear what is included and how the landscape can be understood or structured. These ongoing negotiations occur on multiple levels, from an individual graduate student and local institutions to national funding agencies and international institutional networking. (para 17)

While some advocate a more relaxed attitude, which would see digital humanists celebrating their hybridity, and not worrying about definition and discipline borders (see for instance, Fraistat 2011), others, adopting a tone that is more a call to arms, argue that digital humanists are at a "pivotal moment," in which they need to make their value known and "assemble the necessary resources for the field to move from "emergent" to "established"" (Borgman 2009: para 1).

One issue I had when beginning to write about the digital humanities was whether to treat it as a singular or a plural. Is it one field? (The digital humanities *is*.) Or is it many fields? (The digital humanities *are*.) In some universities digital humanists are housed in one center (Zorich 2008). In others, there are digital humanists spread out, here and there, throughout departments. I am not the first to have wrestled with this; this is a long-standing debate. Some digital humanists have decided that it is one discipline (Fraistat 2011), but others are unsure. For instance, at the 2009 annual Digital Humanities Conference in Canada, delegates made the argument that the digital humanities would reach its pinnacle when digital humanists were no longer singled out as something different, absorbed into regular disciplines. Others argued that the digital humanities should be seen as a separate discipline that looks at different questions and demands different skills than the traditional humanities. Svensson (2010), in his survey of the current landscape of digital humanities, argues that it is unlikely the digital humanities will ever be a unified field, as these sorts of tensions have existed for years and do not

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seem to be disappearing. Although I recognize the importance of this debate and its lack of conclusion, I have chosen to refer to the digital humanities in the singular. This is in recognition of the increasing attempts at unification, as evidenced through the growing number of journals, conferences, granting agencies, and graduate programs that have sprung up to support the digital humanities, as well as the fact that there is a strong sense of community and history (see for instance Fraistat 2011). In addition, I believe there is, at the moment, a strong case to be made that digital humanities is a separate field. It is a field that is attempting to ask new questions of digitized data (for instance, Lancashire and Hirst's (2009) links between Agatha Christie's writing and dementia), but also use that data to confirm or reject some of the tenants that have been the foundation of traditional humanities scholarship (for instance, the work being done on the "Proceedings" that is attempting to change the history of the criminal court system (Cohen 2011)). However, digital humanists are still very much in the experimental stage; they have high hopes of using digital archives and new tools to create new scholarship, and see much potential in this line of research. For this reason it makes sense that they build a strong sense of community in order to share ideas, tools, and techniques. However, the questions they ask are not necessarily commensurate, in that they are targeting specific questions in a variety of humanities disciplines. At the moment there is a distinct culture, rallied around the common purpose of integrating and using technology and computer science, but the future could go several ways. Digital humanists could continue with this sense of community and common purpose as technology evolves and mutates, or they could become more absorbed into long-held disciplinary boundaries as technology becomes more integrated into a 'regular' humanities curriculum and

expectations.

Regardless of whether digital humanists find themselves cordoned off in their own separate research centers, or peppered throughout the university, digital humanists do not see themselves as rejecting traditional humanistic inquiry, rather they see their work as an extension of it; a critical extension in a time when much of our culture is being formed in, or translated into, the digital (Presner and Johanson 2009). What also becomes clear is that uncertainty seems to be one of the defining characteristics of this kind of work.[34] Pannapacker (2008) describes the situation this way:

> As with any emerging field that is growing faster than its self-theorization, the digital humanities is vaguely defined. Some uncertainty persists about what characterizes the field besides a spirit of cooperation and an eclectic group of people who identify themselves with it. (para 15)

In what follows I will identify the main themes that draw digital humanists together, as well as the areas where people differ. As with any work in progress there are unifying theories, practices, and challenges, but also tension as digital humanists negotiate unchartered territory. This chapter will examine how the digital humanities is contributing to the democratization of the humanities, as defined through increasing access and participation. It will then look at how many believe digitization is changing humanities research for the better, by enabling humanists to manipulate data in novel ways and ask new types of questions. It will address what I have called 'cautionary tales', and examine how digitization may take away from traditional humanities work. This

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[34] In the opening editorial of the inaugural edition of Digital Humanities Quarterly, an online journal that began in 2007, the editors refused to define what digital humanities means, other than to agree that it is a field that crosses barriers, resides in many different domains and is constantly changing. "The question for this journal is thus not "What is digital humanities?" but "How can we shape the digital humanities" (Flanders, Piez and Terras 2008: para 5; see also Piez 2008)?

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chapter will finish by examining several other characteristics that define the digital humanities: a merging of the two cultures (science and art), collaboration, process and tool development, issues of tenure, and the problem of being 'finished'. It begins, however, by describing how digital humanities projects are funded and briefly outlining the scope of the field.

Digital Humanities Today

The digital humanities has gone through different stages, moving from an emphasis on textual analysis, to more of an interest in visual practices, such as 3D modeling and gaming. However, it should be emphasized that textual analysis is by no means 'complete'. Digital humanists are still working on better ways to code text, creating tools to do this, and programs that are able to check for consistency and make inferences (Ciula, Spence and Viera 2008). As Rieger (2010) describes, the digital humanities today captures a wide array of digital practices including: "digital libraries, visualization, text mining, geographic information systems (GIS), multimedia, social networking, teaching with technology, open access, and digital culture" (para 1). There are different ways of characterizing the shift. As outlined in the previous chapter, a consortium of digital humanists who came together at UCLA described the shift as one of movement from the textual to the visual (UCLA Center for Digital Humanities 2009). Borgman (2009), by contrast, argues that there has been a shift in the digital humanities from a focus on audience, to a focus on participation. The first phase is characterized by digital humanists creating content that audiences could consume and learn from, while the second is focused much more on having "scholars, students, and the public…contribute content or conduct their own investigations" (para 49). Davidson

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(2008) proposes that with this increased focus on participation and interactivity, what is emerging is something she calls "Humanities 2.0." As digital humanists are increasingly focusing their attention on creating archives that can be manipulated by users, digital humanists are moving away from simply gathering, collecting, archiving, and disseminating information, towards involving 'the audience' in their work by allowing the audience to contribute content to sites, or participate in theoretical debates. She imagines a future for the digital humanities that is not unlike Wikipedia.

> A memoir site, for example, might have a hosting function where any user can upload an ancestor's diary accompanied by photographs or portrait paintings. Other users might comment on, augment, and correct content or offer different interpretations of what the content means for a new theory of affect and intersubjectivity or for new understandings of the interactions among governmental policy, migration, race, gender, and religion. Courses might be based on students' participating in such a knowledge-sharing enterprise. A professor might teach a course on global information flows in which students engage their worldwide social networks in cocreating an archive that traces deployments of specific technologies, networking sites, and corporate or national policies. The possibilities for topics and uses are as limitless as our imaginations. (710-711)

Most digital humanities projects fund the work they do from several sources. Although there are some strictly commercial ventures – the most prominent being Google Books[35] – most digital humanists are associated in some way with universities. There are essentially three ways for these digital humanists to fund their projects. The first is to approach government or philanthropic organizations. The second is to partner with the private sector. The third is through funding from the university. Most digital humanities projects survive on a combination of the three.

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[35] Although Google Books is often the first project to come to mind when thinking about large-scale digital humanities projects, ironically Google Books does not have a humanist on its board of directors (Davidson 2011).

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The main source of government funding in Canada is through the Social Sciences and Humanities Research Council (SSHRC). The Standard Research Grant awards up to 250-thousand dollars. However, one key informant, a Canadian digital humanist, interviewed for this dissertation says that he does not know of a digital humanist getting anywhere near this amount, part of which has to do with SSHRC's reviewers. He says it is difficult for a scholar doing any sort of 'different' research to get funding from this source because the review boards are made up of scholars in traditional humanities disciplines who prefer to support traditional humanities work (interview with Key Informant 1). Additionally, there is the Canadian Foundation for Innovation, which does grant money for hardware funding.

In the United States government funding is allocated through the Office of Digital Humanities, which is part of the National Endowment for the Humanities (NEH). The budget for this office for the past couple years has been approximately 4 million dollars, which amounts to 2.5 per cent of the NEH's yearly budget.

Many digital humanities projects and centers also approach philanthropic associations such as the Mellon Foundation, as well as corporate donors. A recent survey of digital humanities centers in the United States (Zorich 2008) showed that most centers are funded at least partially, or through start-up material, by private enterprises, such as computer companies. Google has also recently committed a million dollars to digital humanities research. In 2010 it funded 12 research proposals, distributing a total of 479,000 dollars. The remainder of the funds will be distributed next year. Not surprisingly, many of the projects chosen will use, in some way, Google Books. For example, two researchers from George Mason University (one of the case studies in this

research) have been awarded funding to write a new program that will track biblical references in Victorian literature. They plan to test the theory that religiosity declined in the Victorian era in the United Kingdom by scanning Google's vast digital repository for religious references; while this theory has been supported anecdotally through the analysis of a limited amount of books (again, a scholar can only be expected to actually read a limited number of texts in a lifetime), the claim is that by searching a vast database of books for word usages and tracing word frequencies, scholars will have a much more accurate picture of whether this claim (which underlies much of the scholarly work of Victorian studies) holds true (Kolowich 2010; Orwant 2010). As another example, scholars plan on using Google Books to test the "venerated thesis that well-heeled Britons living in the middle third of the nineteenth century were especially optimistic" (Kolowich 2010: para 7). This is the theory put forward by Walter Houghton in his 1957 book, *The Victorian Frame of Mind*. His thesis was built on observing the recurrence of certain words: light, sunlight, hope. He was limited, however, in how much he could read and absorb. The claim is that "Google's robots, which will be able to cover a much broader range of authors in much less time, will be able to explore the hypothesis more thoroughly (Kolowich 2010: para 7).

As Siemens (2009) notes, digital humanities projects often need more funding than other projects, since there are often multiple people involved and extensive technical requirements. Given this, ensuring a consistent source of funding can be difficult. As she describes, instead of relying on secure sources of funding, "money often ebbs and flows over the life of the project" (5), and as a result it can be difficult to keep people attached to projects. This compounds the challenges digital humanities projects face, as different

people need to be trained, or brought into projects over time. Borgman (2009) also notes that although interest in the digital humanities is growing, scholars are finding it difficult to fund their work. "Despite many investments and years of development, basic infrastructure for the digital humanities is still lacking. Those who wish to gather and analyze digital data for humanities problems often find the overhead daunting" (para 5).

Others make the case that in the United States funding sources for the digital humanities are actually increasing, unlike the situation other university departments are facing (Presner and Johanson 2009). For instance, the newly established Office of Digital Humanities has initiated a series of new grants. Although, as noted, its budget is a considerably minute part of the NEH's overall budget. The digital humanities is also interdisciplinary and potentially global, and as such there are funding opportunities that involve collaboration between different granting bodies – in particular between granting agencies in the United Kingdom, United States, and Canada. Right now there is collaboration between the Joint Information Systems Committee (JISC-UK), the NEH, the NSF and SSHRC. Still, despite this optimism, Presner and Johanson (2009) stress that there is still support needed in terms of hiring and resources, especially in difficult economic times when universities concentrate more on preserving core programs. However, they believe that the digital humanities is one of the best ways to prepare students for the realities of a digital future and to invest in them will position their school – UCLA – "at the forefront of a recovery effort that will fuel the next generation of scholars and leaders" (8).

As outlined in the previous chapter, incorporating computing into the humanities in university settings, goes back half a century. However, formal digital humanities

programs in universities are fairly new. One of the oldest in the United States, going back just over a decade, is at the University of Virginia. The university decided that since increasingly more of America's culture and cultural heritage was migrating to the Internet there was a need to train people in both humanities and information technology. The program's graduates would find employment in "museums, libraries, teaching, scholarship, publishing, government, communications, and entertainment" (Unsworth 2001). Ten years later, the program is still flourishing and is in the company of many others that fall under the digital humanities rubric. However, reflecting the diversity of subjects and practice in the digital humanities, is the way programs are named. A student looking for a degree in physics, engineering or literature, for instance, can be fairly certain that programs will have similar names from university to university. This is not the case in the digital humanities. For example, at Stanford University there is the Stanford Humanities Laboratory where humanists partner with artists, technologists, and scientists. At Duke University there are new interdisciplinary programs called "New Technologies in Society" and "Information Science and Information Studies." In Canada students can take a Master's degree in "Humanities Computing" at the University of Alberta. There is also an undergraduate degree in "Interactive Arts and Sciences" at Brock University, where students also work in a center devoted to the digital humanities. At McMaster University undergraduate students can major in multimedia and focus on work that combines the humanities with digital media. In the United Kingdom, King's College London has a new Department of Digital Humanities, that up until recently was called Computing in the Humanities.

What is Fundamentally Different about the Digital Humanities?

When the Internet first began being used in earnest in the mid-1990s, the speculation about what the 'digital revolution' would mean for human culture was polarized. On the one hand the Internet was going to lead us into utopia, where we would join online communities in which age, gender, and race did not matter. Hierarchies would disappear. Distance would no longer matter. The ability to connect with anyone anywhere would have a profound effect on economics and politics. Digitization, essentially, would lead to a peaceful, prosperous, enlightened future (Barney 2004; Bell 2001; Wellman and Gulia 1999). These utopian visions were tempered by those who claimed that the Internet would mean the death of real community. Instead of facilitating diverse communities, people would cordon themselves off into online pods of likeminded people. The online environment would make it easier for people to ignore those they did not agree with. While people might have access to more information and different points of view online, they would gravitate towards the familiar. Rather than making us more worldly, the Internet would lead to more familiarity with the self. Some argued that online communication was no replacement for face-to-face communication; that online communication was not as fulfilling as 'real-life' interactions. Others warned that while the digital revolution would be lucrative and enticing for some, that would not be the case for those on the wrong side of the digital divide (Barney 2004; Bell 2001, Doheny-Farina 1996; Fernback 1999; Lockhard 1997; Putnam 2000; Wellman and Gulia 1999). Fifteen years later, neither prophecy has come true. The online world has not meant the end of the offline world, but the way we function in the offline world is intertwined with online interactions. Many take a more moderate position that recognizes while there may be

benefits in online interactions and they add to the multiple ways we communicate, there is no replacement for face-to-face face interactions (Siemens 2008; Wellman 2006).

Similarly, in academia the Internet and digital media have not meant the end of the humanities, although there have been significant changes.[36] The digital humanities has not, as of yet anyway, completely revamped these disciplines, despite the hope from some that computing and digital media would transform the humanities. However, the digital humanities is changing the type of work that humanists take on, as well as how people consume and interact with the work that humanists produce. This chapter will now turn to exploring the key elements of the digital humanities that set it apart from traditional humanities disciplines. This section draws heavily on Cohen and Rosenzweig's (2005) theorizing on the impact of digital history. However, as will be shown, other digital humanists working in different areas also identify these themes as salient. This section begins by considering how the digital humanities affects access and participation in the humanities, the two key points that I have identified as integral to the democratization of the humanities.

Democratization

By simply digitizing humanities material, it increases the access some people have to the objects of human culture (both primary source material and research) enabling more people to engage with them (Katz 2005; Presner and Johanson 2009). As Nelson (2009) writes:

> Digital tools enable richer and more powerful access to information and, specifically in the humanities, to cultural materials. As a publication

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[36] Although, as outlined in the previous chapter, the humanities receive significantly less funding than the sciences, and departments are being reduced or cut altogether at some universities.

medium, the Internet makes scholarly material widely available to regions that don't have immediate access to a research library. It makes this material readily available to scholars where they need it most: in their own work spaces. And it makes specialized knowledge freely accessible to the public. (para 3)

Essentially, it can be easier to access material online than making the trek to the library or to a museum, especially if a scholar is looking for a rare object that is only housed in one place.[37] For example, the Center for New Media at George Mason University has created a website where people can view the only dress of Martha Washington that remains intact. For some, a library or archive might be around the corner, but digitization solves the problem of distance for others and also opens up spaces that were previously closed. For instance, the doors of the United States Library of Congress have been closed to high school students, but they can now access it through the library's American Memory website (Cohen and Rosenzweig 2005)

In the classics, Crane et al. (2009) found that digitizing bodies of Greek and Latin work has increased its reach to people in isolated locales. Perseus, an online collection of classic works, is reaching and engaging people who normally would not have access to this material. The tool they have put online to help people read Greek and Latin has also inspired people to begin reading classic texts again. As they describe:

> Perseus quickly received letters from students in isolated locations such as rural homes and naval vessel at sea who were using online lexica and texts. Even more interesting, people who had studied Greek and Latin decades before found that the reading support tools available online gave

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[37] It should be noted that not everyone is enthusiastic about studying digital objects, at the expense of material objects. Borgman (2007), for instance, points out that when something is digitized it may lose parts of its original character. Digitizing a book, for example, may overlook or leave out the notes in the margins, which can be fruitful information for researchers. On another note, digitization does not allow a researcher to examine the materials of the objects they are studying, such as the bindings of books.

them the support that they needed to begin reading Greek and Latin again. (para 60)[38]

As another example, Stoicheff (2009) describes efforts to bring together – in digital form – a thirteenth-century medieval text that was cut up and distributed by a Cleveland book collector. Pieces of the book ended up in private collections and libraries around the world.

Digitization and the ease of publishing on the Internet are also increasing the ease with which people can participate and interact in the building of humanities scholarship, which is adding to the diversity of humanities scholarship. As Web 2.0 tools proliferate, more people are creating work and putting it online for others to read, tasks that have traditionally been in the hands of the 'professionals'. As Cohen and Rosensweig (2005) point out, the number of people blogging about history who are not professional historians with credentials, is huge and the population is much more diverse. These bloggers, they argue, unsettle hierarchies, particularly when Google, the place many people start their web searches, will recognize an amateur historian before a Harvard-trained professor.

> If you searched for "Abraham Lincoln" in Google in 2004, the top site listed was the Abraham Lincoln Research Site, which features the writing of Roger Norton, who says of himself "I am not an author or an historian; rather I am a former American history teacher who enjoys researching Abraham Lincoln's life and accomplishments." Through Google's eye, which is how an increasing number of people view the web, Roger Norton was a more influential Lincoln historian than the Pulitzer-Prize winning Harvard professor David Donald. (para 18)

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[38] One critique that is often brought up when addressing the idea of access is that English is the predominant language of the Internet. However, Crane et al. (2009) believe that within a short amount of time, this will be remedied so that less common languages (Croatian, Hungarian) and widely spoken languages (Arabic, Chinese) will have as much of a place.

While bloggers are not necessarily digital humanists (although at times they are the same), what digital humanists are creating are tools designed to encourage non-academics to participate in the humanities. For example, just as Blogger was created as a free tool for people to easily publish text on the Internet, researchers in one of the case studies in this research, the Center for History and New Media at George Mason University (under the direction of Dan Cohen, and founded by the late Roy Rosenzweig), have created free software that will allow people to build their own historical websites. Digital humanists are also involved in creating archives that can be manipulated and augmented by the public. Kornbluh (2008) is hoping that people will eventually take the Quilt Index he is creating and add their own material to the database, as well as use it to create and curate their own research.

Digitization also encourages hypertextuality, which does not lend itself to linear reading. Cohen and Rosenzweig (2005) argue that this has the potential to change the way people view the importance of data. What was once considered scholarship on the edge may be read as more important and move closer to the center, as ideas of what is important and what is not, change in a world where the ability to click through to different resources destabilizes older hierarchies. As Katz (2005) points out, hyperlinking and interactivity are inextricably linked. In most digital databases and texts, readers are invited to click on links that can take them on different paths through the information, to the point that they may never return to the original screen. At the time of his writing, he says the most common example cited of this kind of database/text in the United States was Edward Ayer's *Valley of The Shadow*. This site tells the story of two villages during the American Civil War: Augusta County, Virginia, in the North and Franklin County,

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Pennsylvania, in the South. Visitors can access letters, speeches, newspapers, diaries, census information, and other government records that have been digitized to find out what life was like for citizens of these counties. The site declares "there is no "one" story in the Valley Project" (Valley of the Shadow 2011). As Katz (2005) describes, what people learn from the site depends on where they decide to enter (there are three choices, 'The eve of war', 'The war years' and 'The aftermath') and the choices that are made after that. There is, of course, a sense of narrative to this site, and the designers have orchestrated multiple paths through the site, but the choice of path, and the variations it takes, is in the hands of the user. "The site is thus both interactive and non-linear, producing both new relationships between 'author' and user, and a non-narrative experience for the user" (113).

However, Katz (2005) also makes the point that interaction also occurred in the "analogue environment" of the humanities and that there is "a generation of scholarship on reader responsiveness to text, image, and sound" (112). However, Katz argues that interactivity in the digital humanities offers up "a new range of possibilities" (112) and is often the central aspect of digital humanities projects.

Changing Humanities Research

Turning now to the question of how the digital humanities changes the way traditional humanities work is done, the first and most obvious quality is that digitization enables the storage and retrieval of vast amounts of data. At the same time that technology is getting cheaper, its ability to store data is growing. Enthusiasts say the equation is simple – the more you have to work with, the better your work will be (Bobley 2008; Katz 2005). As Cohen and Rosenzweig (2005) ask, how would history

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change if *all* historical evidence were available, not just what has been deemed worthy of being saved? As one official with the Office of Digital Humanities in the United States puts it, by digitizing the material humanists use, be it books, art or sculpture, doors open for the humanist that will fundamentally change the way research is done.

> If you are an historian and you're trying to make a conjecture about why the American Civil War (ended up the way it did). Well, if you only had access to ten articles about that material, and now all of a sudden you have access to ten-thousand articles about that era, about that time period, how does that change your conclusion? In my opinion it fundamentally changes the way you do your research and the way you gather evidence. And ultimately, it's going to impact the kinds of conclusions you control. (interview with Key Informant 2)

In this world of more equals better, Walter Benjamin's famous argument that something is lost when one looks at a copy as opposed to the original – its aura fades – recedes into obscurity. In the digital humanities it is the copy that is valued, since copy – going back to its original meaning (it comes form the word copia) – means abundance. The ability to query an abundance of information is what sets the digital humanities apart from its more traditional counterpart, the humanities (UCLA Center for Digital Humanities 2009).

Digitization allows for flexibility, allowing scholars to look at the material they are studying in a variety of ways. It is easier to represent an object in multiple forms – text, image and sound. A scholar of Ancient Greece studying a vase, for instance, can look at an image of that vase, read commentaries from other historians, and at the same time be directed to other similar artifacts that might be of interest. According to Lev Manovich, Professor of Visual Arts at the University of California, San Diego, what changes is that "a new media object is not something fixed once and for all, but

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something that can exist in different, potentially infinite versions" (Manovich 2001: 36 in Cohen and Rosenweig 2005: para 16).

Digitization also allows digital humanists to search and manipulate data in novel ways.[39] Being able to find patterns that were previously invisible is what digital humanists see as the key to changing humanities research. Essentially, enthusiasts see great potential in being able to harness databases – this enables people to ask questions they could not before (Bobley 2008; Borgman 2007; Davidson 2008; Katz 2005). As Bobley (2008) describes, this major shift has to do with scale; computers can "read" (para 7) vast amounts of data, much more than an individual scholar can. Whether or not a computer actually 'reads' data – in that it makes judgments about what it is processing, is debatable,[40] but the point is that scholars have at their fingertips much more data than they did in the past, and the next step is to find new ways to manipulate it. The hope is

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[39] For instance, at the Center for New Media and History at George Mason, they have developed a program called Syllabus Finder that allows them to search databases and come up with patterns that demonstrate how history was taught (for example, the types of texts, courses and assignments that were popular.)

[40] The question of whether computers can 'think' in the same way that humans do, has been much debated. Joseph Weizenbaum – the late MIT professor – contends that computers are not capable of judgment and this is something that should be left to people (Hayles 1999). However, Hayles (1999) asks us to consider whether an email sorting system is not a form of judgment. It could be argued, of course, that email sorting is simply a matter of finding patterns. However, Hayles believes there exists some form of what Edwin Hutchins describes as 'distributed cognition'. To explain distributed cognition Hutchins invokes John Searle – professor at University of California, Berkley – and his example of the Chinese room. Searle asks us to imagine he is locked in a room. A note written in Chinese is slipped under the door. Searle does not speak a word of Chinese, however, there is an instruction manual in the book to teach him how to match symbols with symbols. He does this and slips the note he has created under the door. The people on the other side of the door might think that Searle understands Chinese when in fact he does not. This, Searle contends, is what a computer does. It matches. It finds patterns. It does not understand. However, Hutchins believes that it is *the room* that understands Chinese, and this is what distributed cognition means – things (people, objects, technology, animals) working together to create understanding.

that digitization will do for the humanities, what it has done for the sciences. As Bobley (2008) writes, science has been mining digitized data to discern previously invisible patterns and humanists should be able to do the same.

> We've only begun to scratch the surface on how this mountain of data might be used to advance humanities research. But now that millions of books and newspapers are right at our fingertips, we must ask: What new knowledge can we acquire? What new questions might the data drive us to ask? How might I help the scholar locate new materials ripe for close reading? How might old theories be questioned and new ones posed? (para 9)

Mark Kornbluh, the Director of MATRIX (The Center for Human Arts, Humanities and Social Sciences Online at Michigan State University) hopes the database he is creating – The Quilt Index – will do precisely this. Quilts in their material form are spread out, housed by museums, archives, and in personal collections in disparate locations. The study of quilts crosses different humanities disciplines such as art history, cultural history, women's history, and anthropology. Of particular interest to scholars is tracing how patterns spread across North America, because this can tell scholars about migration patterns and integration. Kornbluh and his associates are collecting as many quilts as they can in their digital repository that they hope scholars will use to trace these patterns.

> We have this important cultural artifact, quilts, that have been made in the United States for over 200 years, and we know who made them, whether they were made by men or women, they were made by African–Americans, Native Americans, Laotian immigrants, etc. Can we use this Quilt Index to ask questions, for example, about integration? We know that African–Americans moved north in the middle of the twentieth century. As they moved north and to urban areas, did their quilts become more similar to the quilts made by white Americans? (Kornbluh 2008: para 25)

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Along with integration and immigration patterns, he hopes this repository will help scholars answer questions about the effects of the mass media. Quilt patterns were regularly published in newspapers and sent around the country. He hopes to be able to gauge how these patterns infiltrated popular quilt culture. As he notes, the database now exists to ask these questions. The problem is, the tools do not exist yet that would allow researchers to answer these questions.

Along the same lines, but on a larger scale, Lev Manovich, at the University of California, San Diego is working on something he calls "cultural analytics" or "big humanities" (Franklin and Rodriguez'G 2008: para 3). Essentially, this means using techniques common in science, business, and government to analyze large cultural data sets. He wants to trace cultural flows in large data sets – such as user-generated content on blogs and flickr or digital data sets set up by museums, libraries, and companies (such as Google and Amazon's book scanning). The difference between his line of work and other humanities high performance computing projects is that instead of focusing on the past, his work focuses on mapping what he sees as presently happening. He hopes this mapping will tap into "real-time cultural flows around the world" (Franklin and Rodriguez'G 2008: para 25). The goal of cultural analytics is to try to track the flow of cultural products using Web 2.0 tools such as blogs, wikis and flickr (Culturevis n.d.). What he hopes the results will afford, is similar to what others have imagined: the potential to think about new questions that would not have been possible without this sort of mapping – visually tracking how digital ideas and images flow between countries (Franklin and Rodriguez'G 2008: para 23).

Others, such as Katz (2005), echoing the hope of early pioneers in humanities computing, see the potential of searching databases as a way to do the work that humanists have always done, such as concordances, indices, and bibliographies. The only difference is that this can now be done faster, with more precision, and with the possibility of garnering different results thanks to being able to harness more resources and make connections over vast amounts of data. Digitization makes information more easily accessible and searchable. However, the 'game changing' possibilities of digitization is the potential to break new ground.

> The digital multimedia environment enables us to visualize and hear cultural phenomena in ways that even the most advanced analogue printing does not permit. The scholar can now manipulate information ranging from text to image to sound in ways that recreate old worlds and suggest worlds that never 'really' existed. We are beginning to be able to search images and sounds in ways that were impossible before. We can specify links between image and text. We can doubtless do many things that we have not yet discovered. (112)

Cautionary Tales

Despite the potential of the digital humanities, there are reasons not to be wholeheartedly celebratory about digitization. These reasons revolve around issues of quality, context, passivity, inaccessibility, and durability (Cohen and Rosenzweig 2005).

Turning first to quality, some question whether increasing participation in the humanities will affect the quality of the work that is produced. This issue is closely tied to political economy and questions of democratization. Essentially, the concern is this: if anyone can participate in humanities work, is it all to be treated equally? Is the work of a non-professional to be judged as worthy as that of a scholar who has spent twenty years studying the subject (Cohen and Rosenweig 2005)? Should there be hierarchies of knowledge, or should everyone have an equal say? VandeCreek (2007) points out that

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just because someone is allowed access to a digital collection, does not mean that they will know what to do when they are in there. He advocates a role for the professional to guide people through archives or other primary source material. In another vein, Borgman (2007) argues that deciding 'what' to digitize is going to be an issue with humanists. She warns that these decisions will have profound consequences for researchers, directing the path of future research. Even though there are broad aspirations to open up humanities research, there will still be decisions made about what is or is not worthy of digitization; what is quality and worth saving, and what is not.

Another concern is that by digitizing objects they could be taken out of context and made malleable, leading to misinterpretation. Taking objects out of context is nothing new. Museum exhibits, for instance, regularly display objects out of their natural settings. However, just as there are issues with removing something from its original context in its 'hardcopy' form, there are issues when something is digitized and removed from its environment. What can be missed when something is taken out of context? Is there something lost when the researcher no longer spends time with the actual material object? While there may be benefits to being able to quickly access an object, Borgman (2007) argues, as mentioned earlier (see footnote 39), that not spending time with the original could be to the researcher's detriment. For instance, there is much to be learned about book production by looking at, and touching the binding of a book. She points out that researchers might miss out on notes scribbled in the margins if they are only dealing with a digitized text. Further to this, Eiteljorg (2004) points out that when a researcher is not able to spend time with the objects that are being studied they are unable to contemplate the object in a more measured way. There are also questions about whether digital media

really fosters critical engagement and interactivity, or whether it actually fosters passivity (Cohen and Rosenzweig 2005). As the literary critic Harold Bloom argues, there is much to be gained from linear reading. One is forced to engage critically with someone else's thoughts and points of view. Interactivity, on the other hand, tends to foster more of 'me' (Cohen and Rosenzweig 2005).

As well, while the digital humanities purports to be increasing access to humanities material, and democratizing the humanities in this way, inaccessibility is still an issue. Even though Internet connections are increasing worldwide, there are still large parts of the world's population that do not have telephones, let alone an Internet connection (Mosco 2004). Even among those who are connected, there are different levels of connection. A connection in the home is very different from a connection through the library. Even if a connection is in the home, there may be other social factors at work that allow for some family members to have more access than others (Graham and Murdock 2004). While, from one point of view the Internet provides the potential for global access to web-based information, the digital divide still exists, creating "tremendous asymmetries, even within the wealthier nations" (Katz 2005: 113).

Securing funding is also a major issue in the digital humanities. Katz (2005) draws attention to the fact that the type of work digital humanists take on requires major funding commitments, both in terms of hardware, and people who have the ability to create and maintain the databases and other digital software. Cohen and Rosenzweig (2005) also point to the important issue of funding. They worry that non-professionals and academics will not have the funds to compete with well-funded private enterprises like the History Channel, and as a result only those who have the means to participate

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will dictate who gets access, and who gets to participate in the humanities. Jeanneney (2007), the National Librarian of France, brings up a similar concern with regard to Google Books. He believes that the digitization of culture should not be left up to commercial entities. His particular concern is that Google will only digitize what is deemed profitable and the focus will be on English-language books that come out of the North American canon; books that are not in English and are important to other cultures will not exist or at least take a back seat in the digital world. He strongly advocates that governments should be involved in digitization projects in order to provide an alternative to Google. Others, such as Bonnett (2007) for instance, believe that in order to succeed in a digital world, humanists need to get over their reluctance to partner with private business, since this is the only way that the work they want to do will get funded. This research will look at the funding models of each case study and, through a political economic lens, analyze how their funding structures affect or influence the projects they take on and what sort of responsibilities and relationships come from these funding models.

As Cohen and Rosenzweig (2005) have pointed out, although digital data might be flexible (and this is seen as positive), its flexibility also contributes to its lack of durability. If something is dynamic, how can it be preserved the same way that a book can be preserved?[41] Digital humanists are being warned that they need to pay attention to

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[41] This is not to say that digital material is completely unlike traditional print material, in that print material is also subject to change and manipulation. Second editions of books are published, as researchers build upon what they have learnt in first editions. As well, "[p]rint texts are susceptible (as indeed were manuscripts and printed texts) to all sorts of repurposing, from reissue through quotation and anthologizing, to reprinting or incorporating in works of graphic art" (Cohen and Rosenzweig 2005: para 21). However, "[i]n a digital environment, this aspect of textuality is greatly intensified by the ease with

curation and how they will preserve what they are creating (Katz 2005; UCLA Center for Digital Humanities 2009: para 45). The problem of durability, however, is actually twofold. First, digital projects are often constantly evolving; they are never, in this sense, finished. Second, how do you ensure that digital projects will survive as technology becomes outdated or obsolete? As Vaughan (2005) points out, even though code may be durable, the machines that run the code are not. The problem with preserving digital projects is whether the platforms will continue to be around to house them. (Betamax anyone?)

There is also the argument that the digital humanities may not necessarily open up the humanities in the unfettered way that is imagined; it may open up some scholarship, but close the door on others. For instance, Borgman (2007) makes the point that by deciding to put money towards digital projects, other scholarship will suffer. There will be fewer trips to archives, fewer trips to visit research objects in their material form. Although there may be much to be gained by digitization, scholars can miss out on important data if they are not in the presence of what they are studying (Eiteljorg 2004).

On that note, there are humanists who wonder whether digitization would really add anything to their field at all. For instance, Vaughan (2005), while recognizing that digitization may allow more people to view works of art, questions how digitizing will allow scholars to ask different questions. Computers can assist in form and shape research that may help with DNA analysis or fingerprinting, but when it comes to assessing meaning in art, there are difficulties. For instance, attempts to codify Panofsky's system for determining meaning in a painting failed miserably. The

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which one can "sample" texts, and the ability to separate content from presentation in digital formats means that entire works can be readily reformed or deformed" (para 21).

conclusion being that machines simply cannot determine meaning in art. Similarly, Rommel (2004) believes that in literary studies computers may be helpful for determining patterns, but ultimately it is humans that determine the meaning of those patterns.

Others caution that, despite the enthusiasts who extol the virtues of digital humanism, this might not be a field that takes off, because there are not actually that many humanist scholars who are eager to adopt digital technology; humanists have been generally slow to adopt digital tools (Borgman 2009; Katz 2005; Reiger 2010). As McGann (2008) describes, there seems to be "institutional resistance" (82). Rieger (2010) found that more complicated and sophisticated digital techniques such as data mining and visualization "remain accessible and relevant to only a handful of scholars" (para 37). She proposes however, that instead of attributing this to a conservative nature in the humanities, it is simply because scholars are satisfied with the tools and methodologies of their disciplines. Most of the people in her study were open minded to adopting more technology, if it would be useful. "However, they were often buried in their daily work flows and were not motivated to make a special effort to understand or incorporate ICTs in support of their work — unless they perceived a discernable benefit" (para 37). While this reluctance might be an indicator that the digital humanities will have trouble incorporating some into the fold, there are certainly others – as evidenced by the growing numbers of conferences and publications – who are eager to see what digital humanism might offer the traditional humanities.

Collaboration

One of the defining characteristics of the digital humanities is collaboration. Digital humanists work in teams, both through necessity and desire. Since the digital

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humanities requires expertise in both computing and the humanities, it is rare for one person to possess all the skills necessary. As well, many projects are large and complex, requiring more than one person. As Siemens (2009) notes, this type of research "typically involves the need to coordinate efforts between academics, undergraduate and graduate students, research assistants, computer programmers/developers, librarians, and other individuals as well as the need to manage financial and other resources" (1). Collaboration can be fruitful, but it can also be fraught with tension between the two cultures. As well, even though it is one of the cornerstones of digital humanities, it is also the reason many digital humanists are not getting the recognition they feel they deserve (Borgman 2009; Crane et al. 2009; Katz 2005; UCLA Center for Digital Humanities 2009; McCarty 2005). This section looks more closely at some of the issues that arise out of collaboration.

The idea of collaborating has caused some digital humanists to refer to what they do as "Big Humanities" or "Generative Humanities," where they see themselves as breaking down the enclaves of expertise and sub-expertise that has proliferated and created private languages and expert jargon in different fields (UCLA Center for Digital Humanities 2009). Collaboration is generally painted as something that makes the digital humanities special, that sets it apart from other more solitary disciplines. In traditional humanities disciplines, the impression given is that most scholars work alone and that there is minimal direct collaboration with others; the humanist is a lonely figure, toiling in solitude[42] (ACLS 2006; Borgman 2007, 2009; Davidson 2003). By contrast, the

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[42] Of course, that said, scholarship has always been about connection and being part of a network. Students are taught to cite references, and to position their work within and around the work of others. The scholar may work alone, but in a sense is not alone; in

collaborative nature of the digital humanities is painted as an improvement over traditional humanities research. As Siemens (2008) notes, a large "network of individuals with a variety of skills and knowledge creates a richness of interaction and synergies that is often not found in solitary research" (5). Researching alone can be a "lonely affair" (5) and by bringing people together, aside from the sociability that group work encourages, knowledge gaps can be closed.

Being able to collaborate effectively can also have an effect on funding projects. For instance, in Canada, two major grants given out by SSHRC – the Community-University Research Alliances (CURA) and the Major Collaborative Research Initiatives (MCRI) – require that there be a significant measure of collaboration, both between individuals and organizations.

When describing how digital humanists work together, the comparison is often made to science, where it is the norm for people to work together and share data (Bobley 2008; Hockey 2004). However, although it is true that scientists do work on teams more than people in the arts, there are still hierarchies that exist. As Hayles (2009) points out, there are accepted inequalities on scientific research teams. For example, the senior scientist will always be first author, even if her only contribution was to read through the final draft of the paper, or the lab director gets his name on every publication that comes out of the lab, regardless of the extent of his participation in the actual research.

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order for scholarly work to be considered credible it must be positioned within other scholarly work (Cohen 2008). Of course, there have always been humanists who work with others. As Kornbluh (2008) notes, even though "collaboration and the potential of new digital tools to enable new forms of collaboration are at the center of much of the current excitement about the Internet" (para 1), collaboration in the digital humanities has existed long before the current wave of Web 2.0 technology.

Similarly, just because digital humanists collaborate, does not mean that everything runs smoothly.

There have been some initial, limited, studies looking into how teams of digital humanists work together. Siemens (2008) found that there can be tension between those who are more technically oriented on a team, and those who are not. Kornbluh (2008) emphasizes that in this digital environment, the humanists are as essential as the computer scientists – one should not take precedence over the other. In particular, he cautions that the scientist should not be seen as more important than the humanists. "It is essential…to understand that librarians, archivists, curators, and scholars are as essential to the development of digital humanities as computer scientists and programmers" (para 29). However, problems can ensue if the principal investigator on a digital humanities project does not have enough technical knowledge or technical support. The more technically informed the principal investigator is, the more likely a project will be successful. However, in one study (Warwick et al. 2008) that looked at successful digital humanities projects in the United Kingdom, it was found that principal investigators are more likely to hire research assistants who have expertise in the humanities rather than technology, figuring that it is easier to train them technically. This same study found that the research assistants did not feel as if they were getting the necessary training and they often had to teach themselves the technical skills they needed. The most successful projects are those that have researchers with combined expertise in both technology and the humanities (Warwick et al. 2008). Researchers have also started to look into how digital humanists work as teams and what sort of protocols need to be developed in order to create functioning teams: there need to be clear goals, team members need to be certain

about their roles and what is expected of them, and all members of the team need to be treated with respect regardless of the role they play on the team (Siemens 2008). This is not to say that the digital humanities is without hierarchies – the role of team leader is important in these environments. Siemens (2008) found that the director or project lead has an important role to play in developing trust and respect in the team, which includes responding to problems and identifying what each member of the team is good at, in order to foster these skills.[43] This research expands on these preliminary studies with its focus on in-depth case studies from North America, and by approaching the question of two cultures from a sociological perspective.

Even though there might be benefits to collaboration, as Borgman (2007) cautions, the long history of solitary scholarship in the humanities may be difficult to break, especially since the system is set up to reward this kind of work (Borgman 2007; Davidson 2003; Eiteljorg 2004). Cunningham et al. (2008) ran into problems in this regard when trying to set up a digital humanities center at Acadia University. They had to convince scholars they would not be ruining their careers by participating in collaborative work. They found that it was often easier to convince more senior academics who were not as worried about their career trajectories. As Eiteljorg (2004) points out, in archeology competition is extremely fierce, especially over funding. Scholars are

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[43] There are other issues with collaboration, particularly around how to get people to work well as a team when they are dispersed geographically. As Siemens (2008) notes, digital tools used for communication are not a replacement for face-to-face interaction. While digital tools such as wikis, blogs, websites, email, and listservs may be good for keeping records and sharing information, face-to-face interaction is invaluable in order to create connections between people and foster teams wherein people are committed to each other and the project. Face-to-face is also the place where it is easier to deal with difficult issues. So far, nothing in the digital realm can replace the value of face-to-face communication.

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reluctant to reveal their work or their findings to others, lest they give away information that would make them less competitive as they compete for funding. There is an advantage to being seen as a 'star' who is doing original research, rather than part of a team; being a 'star' means a researcher is more likely to get funded and can continue their work.

Process and Tool Development

Digital humanists also see themselves as different from traditional humanists in that they create tools: tools to analyze text, tools to represent ideas visually, tools to bring people into another world. As Piez (2008) describes, digital humanists not only think about things, they make things: new forms of knowledge representation with images, movement, and sound (Piez 2008). To the digital humanist, "the old theory/praxis debates no longer resonate" (UCLA Center for Digital Humanities 2009: para 40); creating digital tools and multimedia is an integral part of their work. As Kirschenbaum (2009) describes, creating is the incentive for becoming a digital humanist. "Building things is fun, for a lot of us it's why we got into this business" (para 3).

As well, some digital humanists believe that their work is different from the traditional humanities in that the process is valued as much as the product; the steps one takes in a digital humanities project are just as important as the results (UCLA Center for Digital Humanities 2009: para 26). The argument could be made, of course, that process is equally important in any discipline – witness the methods classes that most graduate students in the arts are required to take – but because the digital humanities is relatively new, the development of methods takes on another life, particularly since the digital

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humanities is also about the development of new tools and new ways of working together.

Digital humanists see themselves in an era that is fundamentally reshaping the humanities. The humanities began as an oral tradition, based in "oratory and rhetoric" (UCLA Center for Digital Humanities 2009: para 41). After the invention of the printing press, the humanities were significantly reshaped. The argument is that digital tools are as significant a development as the printing press in terms of changing the traditions of the humanities (UCLA Center for Digital Humanities 2009).

Tenure

Digital humanists complain that they face problems when they are coming up for tenure, problems that their traditional humanities colleagues do not face. Their digital work is not taken seriously, or in many cases not even considered at all by tenure boards. It is not unheard of for academics to receive tenure because of their participation in digital projects, but it is certainly the exception, rather than the rule (Crane et al. 2009; Jaschik 2009). The issue with digital humanists and tenure is fourfold: tool creation is not considered scholarship, digital material in general is not seen as valuable, collaboration is frowned upon, and there are problems finding peer reviewers who can evaluate their work.

To begin with the first issue, tenure committees do not usually acknowledge the creation of digital tools. In some disciplines, like archeology, building tools is seen as similar to a print publication, but this is the exception in the humanities[44] (Warwick et al. 2008: 386). In the digital humanities, although tool creation may be a central part of the

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[44] Digital humanists often point out that in the sciences tenure boards take into account tool creation (interviews with Key Informants 1, 3, 4).

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work scholars take on, what is officially recognized when scholars are coming up for tenure and promotion is writing about those tools in standard academic journals. As one key informant said, who is coming up for tenure shortly, the tool he invented will not be considered, what will be assessed is what he has written about it (interview with Key Informant 3).

In an effort to ensure that tools get recognized as an important part of research, digital humanists Stefan Sinclair from McMaster University and Geoffrey Rockwell from the University of Alberta, are attempting to come up with an easy way for scholars to acknowledge the tools they use in creating their scholarly work. By acknowledging tool use, Sinclair and Rockwell hope that the tools digital humanists create (such as text mining tools) will become more respected. As Sinclair (2009) notes:

> Scholars feel compelled to cite ideas and texts that come from other authors, but they are much less likely to recognize tools that have contributed to their work (and we would probably not want every scholar to cite search engines such as Google that have been used during research). We feel strongly that text analysis tools can represent a significant contributor to digital research, whether they were used to help confirm hunches or to lead the researcher into completely unanticipated realms. (para 8)

Even in fields where humanists have been early adopters, publication remains the yardstick by which success is measured. As Cane et al. (2009) note, classicists were early adopters of digital means (going back to Busa), but they still treat "digital tools as adjuncts to an established print world" (para 24). Print publication is how classicists build their careers and reputations, and although they may be searching for innovative ideas, "the format of our publication is essentially the same as that which Gibbon used in the 18th century" (para 24).

At the moment there is a movement underway to try to create guidelines so that tenure boards can evaluate the merit of digital scholarship. The Modern Language Association (MLA) and a consortium called the Humanities, Arts, Science and Technology Advanced Collaboratory are working on coming up with the guidelines. However, these have yet to become adopted and are still very much in the beta stage (Jaschik 2009).

Second, digital work itself, in general, is not seen as prestigious as print material. It might seem obvious that if there is no change in content, merely the medium, a piece should be judged in the same way. However, the view remains that something published in digital form is not as worthy as a monograph (Jaschik 2009). In 2007 the MLA taskforce reported that digital scholarship is not ranked as important as print publications – this includes electronic journals and other new media formats.

As mentioned earlier, most digital humanists collaborate and as it stands now, the academic reward system is not set up to acknowledge collaboration. Humanists are rewarded for their solitary work; while collaboration might be recognized, one gets promoted and tenure from publishing monographs (Davidson 2003; Warwick et al. 2008: 393).

The final issue that exists with regard to tenure is finding people who are qualified to do peer reviews. How does someone review a field that is 'new' or outside of their realm of expertise? Digital humanists are facing the same challenges that pioneers in women's studies faced in the 1960's and the 1970's. There is lack of 'experts' in the field who are qualified to evaluate their work and it is up to the scholar to make the case that their work has history and standards (Jaschik 2009). As Katz (2005) describes:

We need new modalities for assessing complex, interactive and multimedia products. It is less clear than it used to be who is the appropriate reviewer, since technology is now part of scholarly digital methodology and most senior scholars, at least now, will have difficulty in assessing the full implications of digital scholarship. (115)

The Problem with Finishing

The idea that the digital humanities is flexible, while its humanities counterparts are not, is something that is often repeated in digital humanities circles. As Kirschenbaum (2009) puts it:

Digital humanities and the electronic publishing ventures associated with it are used to deriving considerable rhetorical mileage and the occasional moral high-ground by contrasting their radical flexibility and mutability with the glacial nature of scholarly communication in the fixed and frozen world of print-based publication. (para 2)

However, there is a problem with all this flexibility. How do you measure when something is "done…in a medium where the prevailing wisdom is to celebrate the incomplete, the open-ended, and the extensible" (Kirschenbaum 2009: para 2)? In traditional humanities work, a project is done when it is published, or when it is presented and then published. A researcher may revisit her work, and publish subsequent work that builds on her initial findings, but once published research is essentially seen as finished. An electronic resource, or digital project, however, often challenges this notion of finished, since it is not published in a traditional sense and is being built with the idea that it will be constantly revised. As Katz (2005) describes:

When a book is published, it is in some sense 'done'. It may appear in a subsequent edition, but serial editions are easily tracked. The text cannot be altered except by being republished. Not so for digital publications. They can be altered after being posted by the author, the publisher, and even, under some circumstances, by the user community. Which is the real, or published, version? (116)

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Although the problem with being 'finished' may not seem serious – just keep adding to a project – it can be very problematic in terms of funding. Funding agencies, such as SSHRC, often want interim reports and a final product that is completed in order to measure the success of the project. Presenting finished products, or interim results, can be part of a granting agency's requirements (Brown et al. 2009).

Case Studies

The three case studies that I have chosen for this research are all examples of digital humanities projects that are constantly evolving. They all occupy a middle ground in the commercial spectrum of digital humanities, in that they are all in some way associated with universities. None is entirely commercially based (like Google Books). None is entirely non-profit and volunteer-based. However, they differ in that they represent different ways of approaching digital humanities projects – one is creating entirely open source material, another is creating scholarly material and charges a subscription, and the third has significant ties to the gaming industry. As well, the three cases represent different ways of funding these projects, surviving on different combinations of public and private money.

In the chapters that follow, each case will be examined to determine how they are, or are not, contributing to the democratization of the humanities. Within this, this research will also examine what it is like to work in these centers, in particular how the two cultures come together, negotiating collaboration and workplace hierarchies.

The Center for History and New Media

Introduction

The Center for History and New Media at George Mason University, in Fairfax, Virginia began its life in an airstream trailer in the parking lot outside the history department. It was the brainchild of Roy Rosenzweig, a public historian who devoted his life work to recording the history of the working class (see for example Brier and Rosenzweig 1994; Rosenzweig 1983; Rosenzweig and Blackmar 1992). Rosenzweig originally came to George Mason to spearhead an oral history project, aimed at collecting these voices, but his interest in computers and 'new media' of the time, CD Roms, led him to found the center. The focus of the center continues the consideration and practice of merging new media with historical research. The center has now grown to include websites, Web 2.0 applications, online archives and programs designed to search and sort data bases.

The goal of the center is to challenge the institutional practices of traditional history scholarship, including accepted standards of authority and expertise. The mission statement is to "democratize history" (Center for History and New Media, n.d.) by creating digital tools that will enable more people to access and participate in the making of history. By assisting a wider range of people and smaller institutions to engage in the historical process, the center aims to foster agency, which will in turn shape how history is created and conceived. Giddens (1984) describes structuration as the dynamics that exist between individual agency and institutional structures; the process through which individuals shape, and are shaped by larger societal structures. In this case the aim of the

center is to challenge the traditional structure of history scholarship by bolstering the agency of individuals and groups that have been traditionally underrepresented in the historical record.

The center began with a staff of two – Rosenzweig and his technical assistant. Today the center is home to over 50 employees, which includes Directors, senior staff, programmers, developers, designers, and web masters, as well as graduate students who are associated with the history department and are either working for the center, or on their own projects from within the center. The center has moved out of the trailer and now occupies a large amount of space on the third floor of one of the university's research buildings.

Rosenzweig passed away in 2007, but his goal to "democratize history" (Center for History and New Media, n.d.) remains the central mission of the center. Democratization in this context refers to two main concepts: increasing access to historical materials and increasing participation in the making of history. Key to this framing of democratization is increasing the number of voices that are represented in the historical record and focusing on those who have often been left out of the history books, people who were neither famous nor infamous, in particular the working class and the poor. Democratization in this context also includes enabling more people to participate in creating historical records by designing tools that allow people to create historical archives of their own. It also includes increasing access to historical archives (primary source material) that previously may have been inaccessible, or difficult to access.

At the time of my research the center focused on two major projects: Omeka and Zotero. Omeka is a web-platform that aims to simplify the process of publishing history

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on the Internet. The users the center has in mind are varied: libraries, archives, museums, scholars, educators, and amateur enthusiasts. It is aimed at both smaller and lesser-known historical professionals and institutions, but it is also targeted toward "citizen historians" (Davidson 2008), amateurs who have personal collections or who wish to share their own historical research on a public platform. Omeka is available as a free download. Zotero is also a free resource that is tied to the free web browser Firefox. It is an organizational tool that scholars can use in the same way they would use a licensed product such as Endnote to organize their research, but it has capabilities beyond simple reference organization, in that it can also take photographs of web pages and make links to web pages that can then be kept in a digital resource library. It has also been designed to be more than an archival tool; once a digital archive has been created, Zotero has applications that allow researchers to query and map the data that has been stored. The designers imagine people will first be drawn to Zotero because of its archival capabilities, but the hope is they will move beyond the organizational and archival functions and use it as a tool to query data they have collected.

This chapter will begin by examining what the center means by its goal to democratize history, which revolves primarily around enabling shared authority of history and creating open access material. Several critiques will be raised that question the center's definition of democratization and whether it is accomplishing its goals, including problems with equating accessibility and democratization, technical barriers that prohibit full participation, issues of authority and expertise, and questions about whether the center is actually fostering agency. The second theme that will be explored is how the arts and the sciences merge in this environment and how the two cultures, as

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Snow (1971) imagined them, manifest and overlap. Despite the prevailing feeling from some of the senior staff that most people at the center are able to function in both worlds, it is apparent that most align themselves with one culture or the other. As well, the hiring practices at the center have reinforced this divide by placing an emphasis on knowledge of history. However, there is not a clear-cut divide between cultures. Most people at the center have a degree of literacy in both cultures and there are different levels of technological skill among the programmers that suggest the group is not homogeneous. Further to this, there are people who consider themselves 'bridges' between the two cultures; knowledgeable enough to operate in both environments and help ensure projects run smoothly. The third theme that will be explored is collaboration and hierarchies. Digital humanities projects are often described as being different from traditional humanities disciplines in that collaboration is the norm. Further to this, it is also characterized as a discipline where hierarchies are often dissolved, as humanities scholars and computing specialists come together to create new work (Siemens 2009; UCLA Center for Digital Humanities 2009). As will be shown, collaboration is a crucial aspect of work at the center. However hierarchies still exist despite attempts to disperse power. Finally, this chapter will examine more broadly how the center is attempting to change the overall structure of traditional historical scholarship both quantitatively and qualitatively. It will begin, however, with an outline of how the center is funded and a description of the employees who work there.

Funding

The center is funded through two sources: George Mason University and grants. The majority of the funding, 85 to 90 percent is from grant funding, which comes from

two sources: government (National Endowment for the Humanities, National Science Foundation, Institute of Museum and Library Services, National Education Association) and private foundations (Ford, Carnegie, Mellon, Sloan, Hewlett, Crest, Kellogg, etc.). The other 10 to 15 percent comes from the university. Funding from the university is directed towards the salaries of several of the Directors and the administrative staff. Most of the Directors have tenure track jobs in the history department, although there are a few who are paid through grant funding. All other staff members depend on grants to pay their salaries. As one Director describes, funding for grant-funded positions often comes from different grants, in order to ensure that if one runs out, there is money coming from elsewhere to cover salaries (interview with George Mason Director 1). However, it is clear that the secure positions belong to those who have tenure at the university.

The annual operating budget is close to three million dollars a year, almost all of which goes to pay salaries. Equipment costs are in the range of twenty thousand dollars a year. The state of Virginia also has an electronic technology transfer program for universities, through which old technology is rotated out and replaced with new technology, which helps defray costs. Since the center is housed in a state institution, there is no cost for space, which reduces overhead. While equipment and start-up costs might not be great, one Director says the center is constantly looking for more grant funding to keep operating and much of his time is spent writing grant proposals (interview with George Mason Director 2). Another Director says the center does not do more than break-even and is also facing more competition for public (government) funding. This Director describes the current situation as a "contraction of public funding"

(interview with George Mason Director 3), which has occurred because private funding has dried up due to the economic downturn in the United States:

> The last big crash decimated the private foundations' foundations. And so there's been much less in the way of private funding for that sort of stuff. That's fine, but it means the competition for the public funding has gone up enormously. (interview with George Mason Director 3)

This, coupled with what this Director sees as a recent proliferation of digital humanities projects, means there is even more competition for money.

Programmers and Content Producers

The digital humanities requires skills in both the humanities and computing technology. Warwick et al. (2008) describe the two skill sets as "subject expertise" and "knowledge of digital techniques" (387) or "technical skills" (388). Siemens (2009) makes the distinction between those who are "technical-oriented" and those who are "academics" (228). In this case study, I will make the distinction between people who work primarily with technology and those who work primarily on content, in order to query how those distinctions are made and where there is overlap between the two. Those who work primarily with technology will be referred to as programmers, since the majority of their work encompasses varying levels of programming skills. The programmers are primarily tasked with building the tools that the center makes. This refers to designing and developing websites, web-based tools and plug-ins. It can involve fairly complicated programming, such as constructing algorithms, or relatively simply website coding (i.e. coding the design and layout of a web page). It also refers to developing the design aspects of tools such as user accessibility or layout. The range of programming that takes place at the center is varied. Some programmers design and build Omeka, which involves a high level of programming skill to build the underlying code,

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while others use Omeka to design and build other websites, which requires lower level technical skills. The technical skill it takes to *build* Omeka, rather than *use* Omeka to create websites, is more complicated. However both skill sets are similar in that they both deal in some way with tool creation and design.

Those who work primarily with content will be referred to as content producers or Directors. The center has six Directors who head different divisions. Most of them work on content, or oversee operations at the center; they are not involved in the day-to-day programming. The two different monikers will be used in order to acknowledge the fact that the center recognizes a difference between Directors and others who work on content at the center. However, there is one Director who is in charge of the programmers and has some advanced programming skills. In the interests of confidentiality, he will be referred to as a programmer. The content producers deal primarily with the historical content that goes into the tools the center builds and they are also involved in the conception of the tools that need to be built. This distinction between programmers and content producers is apt in that every interviewee acknowledged that there are two aspects to the work at the center and placed themselves in one, or both, of these categories. However, the distinction is in some ways artificial and porous in that many people at the center see that there is overlap between the two. As one programmer says "that kind of division is really more for figuring out who's responsible for what, than actually the interactions that go on" (interview with George Mason programmer 1). The overlap and collaboration between the two sides will be explored further on in this chapter.

Democratization

When Rosenzweig built the center in the 1990's his vision was based on the principles of shared authority and multiplicity of voices, in particular the inclusion of voices that have often been excluded from history books. Rosenzweig was a social historian who dedicated his career to fostering a broader sense of history, one that moved away from 'great man' or elite history to include representations of the poor and working class. He was part of the movement in the 1970's toward social and micro histories and his research concentrated on the history of working class cultural and social life. The impetus for the center evolved out of the collection *Who Built America?* (Rosenzweig 1995) that dealt with American history from a working class and middle class perspective. Rosenzweig used what was then novel technology, the CD Rom, to include sound and film clips. As digital technology evolved, the center began experimenting with how this technology could change the historical record both qualitatively and quantitatively. As one Director notes, the digital was a good fit for Rosenzweig's vision, because of the unlimited potential of space; analog historians are often faced with having to winnow down historical records because of space constraints, forcing them to make decisions about what is important historical data and what is not (interview with George Mason Director 2). Digital technology promised to make the culling of historical data much less pressing (a quantitative change), which in turn had the potential of changing the face of history by including voices that previously might have been left out of the historical record (a qualitative change). Rosenzweig's commitment to shared authority is what people at the center mean when they talk about the center's commitment to democratizing history. One of the Directors describes the center as having Rosenzweig's

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DNA imprinted on it, and the heart of this DNA is the democratization, or shared authority, of history (interview with George Mason Director 2).

Most of the employees at the center who were interviewed are aware of the history of the center and Rosenzweig's vision of democratizing history. Interviewees were asked whether they would characterize what the center does as democratizing history, and if they did, how they would describe the work being done in this regard. If they did not, they were asked to expand on what they thought democratization meant and how they saw the center in terms of democracy. The main theme that evolved, which reflects the mission of the center, is that most people see the center as working towards creating a shared authority of history by making primary source material and digital tools freely available, and by developing new tools that will allow a wider range of people to 'make' history, either by recording and publishing their own history, or using tools to query and analyze primary source material. However, over the course of the interviews what also became apparent was that many people at the center have a more nuanced view of what democratization means and identified several challenges the center faces in attempting to move towards a shared authority of history.

Democratization – Shared Authority

The mission statement of the center states that one of the main goals is to democratize the historical record by capturing the voices of people who otherwise might go unheard (Center for History and New Media, n.d.). As mentioned above, one of the primary means of accomplishing this goal is to create tools that allow people to create their own historical records. One Director describes the building of tools as the "cornerstone" (interview with George Mason Director 1) of what they do. "Omeka is

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designed to enable individual scholars, enthusiasts, amateur historians, small historical societies, local history museums, those kinds of institutions to present their own history online. That is a tool with a clear democratic mission" (interview with George Mason Director 1). It is designed to allow users to easily upload and share information, in the same way that WordPress or Blogger is designed to help people with limited technical knowledge start a blog quickly and easily.

In addition to tool building, the center also builds websites that attempt to capture the voices of a wide range of people involved in historical events. This was the goal in creating the September 11 Digital Archive and the Hurricane Digital Memory Bank (created to preserve the stories of Hurricanes Katrina and Rita), where attempts were made to solicit and gather as many accounts of the events as possible. One programmer who worked on the Hurricane Digital Memory Bank describes the gathering of this sort of data as enabling historians to paint a richer historical picture.

> As an historian you can spend a lot of time searching through the archives and looking for things that aren't there and you think about (how) it would be so great if I had (the stories of everyday people). I mean, *this* is what would be so great to have – to have archives full of hundreds of thousands of direct responses from average citizens, or semi-average citizens... I mean, obviously they had access to the Internet... But there's a pretty broad spectrum if you look at the stuff in there. (interview with George Mason programmer 2)

In addition to soliciting more voices from fairly recent history, the center also focuses on historical events and figures from the past that have not garnered a lot of attention. For instance, one Director says they helped create a site devoted to Martha Washington, because she is an important historical figure who has not been paid a great deal of attention (interview with George Mason Director 4). As one programmer describes, on these types of websites often they will provide a narrative to help visitors

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navigate through the material, but they also provide access to the primary source material, which they hope will allow visitors to form their own opinions.

> The Martha Washington project isn't just – here's the history about Martha Washington. It's – here's all of these documents and these images (so) you can go and create your own narrative about Martha Washington as well. Most of our projects always kind of have those dualities. We'll give our take on it, but don't believe us all the way, here's our records and make a decision for yourself. (interview with George Mason programmer 3)

One programmer describes the digitization of primary source material in this way as the "democratization of data" (interview with George Mason programmer 4), in that first, they are taking data that is usually housed in an archive and making it more easily accessible to people with an Internet connection and second, instead of imbedding a fixed narrative in the archive they provide opportunities for people to form their own. (As to the second point, this is similar to what a traditional archive offers – primary source material that can be analyzed and sorted.) As one of the Directors describes, much of their work in this regard is done through their Educational Division, which also reaches out to educators and students to teach them how to use these sources and subsequently "do history" (interview with George Mason Director 1).

In addition to making primary source material more readily available, one of the content producers says they are hoping that Zotero will also help make the research process of professional historians and scholars more transparent. Zotero has the capability of enabling archive sharing and the hope is that users will allow others access to their archives, making the research process more open and accessible (interview with George Mason content producer 1).

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Democratization – Open Source

Central to the theme of democratization is the center's focus on creating open source material. This includes tools that are freely downloadable, but also tools that users are able to manipulate. Users are encouraged to create plug-ins for Omeka and Zotero, and contribute to the design of the tools. One programmer says this open source philosophy relates directly to their philosophy on history. "Open-source is all about many eyes can fix problems and I think we have that same attitude with history. Many eyes will be able to make a more full and complete view of history" (interview with George Mason programmer 3). One Director says that digital humanities projects that do not embrace this spirit of openness often fail (interview with George Mason Director 2). The reason projects such as the September 11 Digital Archive (which collected 150,000 digital objects from 30,000 contributors) are successful is because they are not restricted, gated, or unduly vetted and are thus able to collect a rich and variegated history of the event. This Director says the center embraces the "open spirit of the web" (interview with George Mason Director 2), which is integral to the success of the digital history projects the center takes on.

Democratization - Critique

Over the course of the interviews, several critiques were raised that question whether work at the center is truly democratizing, and the correct way to describe what the center is undertaking. Issues include the problem with equating accessibility with democracy, technical barriers that prevent full participation, issues with judging quality, and the authenticity of agency.

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i) *Accessibility and Democratization*

One of the fundamental aspects of the center's definition of democracy is *shared authority* of history. However, increased participation does not necessarily mean that hierarchies will be dispersed and that all historical voices will be treated as equally authentic, reliable, and important. One content producer says the structural hierarchies of the field of history will not necessarily change and professional historians will still be called upon to decide what is important historical material; presenting historical information does not make one an historian. "I mean it's one thing for everybody's voice to be heard as historical actors. I don't know if everybody's voice can be heard as historians" (interview with George Mason content producer 2).

Also central to the center's mission is building tools that will enable more users to participate in building the historical record. However, building tools does not necessarily correlate to new users. As one content producer says, tools might encourage people who were already inclined to publish their archives online, but would not necessarily encourage new amateur historians (interview with George Mason content producer 2). In a similar vein, one programmer says Omeka has the potential to make it easier for historical institutions to share their data, but this does not necessarily equate to an influx of people actually writing and sharing their history. "I don't know necessarily that there's a one to one relationship between what they're doing here and everybody writing history" (interview with George Mason programmer 5).

Several Directors and content producers acknowledge there is a need for outreach in order for their tools to reach people; simply building a website or tool and expecting people to find and use them does not work. As one Director describes, in order to get

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their tools and websites noticed, they have to do things that look like commercial marketing, such as branding. "We've got Omeka stickers and we've got t-shirts and we do give-aways and we do promotions.… In a web of a billion pages you can't just throw it up there and think that people are going to come. You have to reach out to them" (interview with George Mason Director 1).

At the moment it is impossible to tell with certainty the reach Omeka has and its impact. One Director says it has been downloaded about ten thousand times, but it is difficult to track precisely who is using it (interview with George Mason Director 1). There is a footer installed in the program that reads "Proudly Powered by Omeka" which is displayed on the bottom of every Omeka-powered website. This footer can be tracked, but it is also easy to remove, making accurate tracking of the tool impossible. According to the data they have been able to collect, the tool is being used by university libraries, smaller historical societies, museums, and individual scholars. One content producer says there are very few individual scholars or amateur enthusiasts using the tool at the moment, but the reason may be that the center has not specifically targeted this demographic (interview with George Mason content producer 3).

The one outright critique of the center's use of the term democratization came from a programmer who disagrees that making information available or enabling more people to create historical records is democratizing. Instead, the programmer argues that what is necessary for democracy is a group of people rallying around information, using it for political or social means. Democracy is active, rather than passive, and requires the formation of community. "You can spend all the money you want opening up the archive to the public, but if you have a crappy interface that's asocial, that does not try to make

online community, then you're not really doing much democracy" (interview with George Mason programmer 6). In addition, this programmer says that democratization is not the right word to describe what they do because they are not challenging the status quo. The tools the center creates have been used for projects that are non-controversial and apolitical.

> [I]t's not democratic in the sense that you're challenging authority and power for people who don't have that. It helps (minorities) potentially, but…we're not going out of our way to create or design media that is doing that. We did the Hurricane Katrina project, the September 11th project. Those are not politically challenging projects. Those are not controversial. Those are projects you can get money from the federal government to do. (interview with George Mason programmer 6)

ii) *Technical Barriers*

The center is attempting to create tools that are easy to use in order to minimize technical barriers. However, there are conflicting views on whether the technology is user-friendly. One content producer says the online archives the center develops are sophisticated and require a fair bit of knowledge to be effectively used (interview with George Mason content producer 2). Another content producer disagrees, saying they design their websites to be user-friendly, unlike other public sites that are more difficult to navigate, such as the Library of Congress or the National Archives (interview with George Mason content producer 4).

One Director explains that setting up an Omeka site does not involve a lot of technical prowess. A Linux server is needed to install the program and users need to be able to set up a database in MySQL, both of which take some technical knowledge, but "for someone who is technically minded it is a five-minute process" (interview with George Mason Director 1). However, this Director admits that for someone who does not

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know anything about what a server is or does, there is a barrier. For those who are not "technically minded," one content producer says they will help with the actual set up of Omeka sites (interview with George Mason content producer 3). They also host online forums to answer any technical questions people might have. In addition, the center is going to launch Omeka.net, an Omeka site in which they will take care of the hosting, eliminating some of the more difficult set-up; by entering a username and password users will be presented with an empty 'shell' that they can then fill up with content. One Director says this new version of Omeka will further their "democratizing mission," by making it easy to host a site, "so that really, anybody will be able to have one of these websites" (interview with George Mason Director 1).

In order to reach people who do not have high-speed network connections, the center incorporates into the design of their technology accommodations for users with low bandwidth, or even dial-up connections; when they design sites they make smaller versions of video, sound, and photograph files, to help with the ease of downloads. However, one content producer says there is still an issue of access they cannot get around, in that some people do not have Internet access at all.

> We build these projects and we check these boxes off and we do things
> that we legitimately believe are tearing down barriers, but they're only
> barriers to people who already have some sort of access. You can lower
> the bandwidth requirements and you can make functionality really, really
> key, but you still are only going to reach a certain number of people.
> (interview with George Mason content producer 4)

Another programmer, echoing the same sentiment, went on to remark that most libraries have access to the Internet, and therefore the collections that the center creates are really available to everyone (interview with George Mason programmer 2). However, as Murdock and Golding (2004) note there are "hierarchies of access" (247) and only

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having access to the Internet through a library is a very different, less privileged form of access, than a connection at home or at work. Further to this, just because a house has a wired connection, tells us nothing about who has access to this connection within the home; there are gender and generational dynamics, divisions of labor, and patterns of power and authority that govern and determine the kind of Internet access that occurs in the home. To simply say that connection equals access is to ignore these social, cultural, and economic forces that govern the complexities of access. In terms of access and democratization, the democratization of history at this center is really only democratic for those with easy, fast, and unfettered access to the Internet.

The center realizes there are issues of inequality in terms of Internet access and there are efforts made to collect the history of people who are not able to easily access the Internet. For instance, with the Hurricane Digital Memory Bank postcards were printed up, left in coffee shops, and distributed in neighborhoods along the Gulf Coast. The cards asked people to write their experiences or thoughts on these cards and mail them back at no cost. A free phone line was also set up with the goal of collecting stories and experiences. However, despite these efforts, one content producer says this form of outreach was not as successful as they had hoped (interview with George Mason content producer 3).

iii) *Authority and Expertise*

Cohen and Rosenzweig (2005) note that digital history brings up issues of quality and authenticity. The digital environment creates a multitude of opportunities for forgery and misinformation. These opportunities existed in a pre-digital environment, but as history moves online, the environment is less structured and controlled than scholarly

journals, museums, and classrooms. "Digital media undercut an existing structure of trust and authority and we, as historians and citizens, have yet to establish a new structure of historical legitimization and authority" (para 29).

Although most interviewees expressed the view that there is value in creating history that combines the history of lay historians with professional historians (it leads to a more rich historical record), they echoed these concerns and wrestle with issues of quality and expertise. As one Director says, facilitating the creation of historical websites might be democratizing in that it encourages more voices to participate in the historical record, but it creates problems as to how to judge the quality of the material. If people do not have the necessary skills or expertise to judge and critique historical content they may be mislead or "come away with mistaken ideas" (interview with George Mason Director 4). However, it is difficult to balance the need for expertise with the desire to keep websites "open." "I don't think that any projects that I know of have figured out or demonstrated a good answer to how to maintain authority and expertise by historians without making the website or the project seem closed to other people" (interview with George Mason Director 4).

One content producer points out that although there are issues of credibility with digital archives in terms of determining authenticity and who is being truthful, these types of issues apply to other forms of non-digital data gathering, such as interviews (interview with George Mason content producer 3). How does an historian know that the people they are interviewing are telling "the truth"? In a sense, these issues cross over from digital to non-digital environments, in that a visitor to any archive has to make judgments as to what is credible information and what is not. However, the issue with digitization is

that it is getting easier for a lay person to create an online archive or digital history project that looks the same as, or similar to, a website created by a commercial organization or an academic professional organization; the point Cohen and Rosenzweig (2005) are making is that it becomes more difficult in a digital environment, especially as software becomes easier to use, to make judgments about the source of information.

iv) *Agency and Faux Agency*

Giddens' (1984) theory of structuration unites structure and agency in the study of how social systems are produced and reproduced through social interactions. Individuals have agency but act within certain social structures (norms, traditions, moral codes); these social structures are reproduced by individuals, but can also be changed by individuals. Through its digital work, the center is attempting to broaden the structure of traditional historical work by fostering and encouraging the agency of individuals who have been traditionally left out of the historical record. One content producer says the founder of the center, Rosenzweig, was interested in how everyday people gained agency: power and a voice. However, he says Rosenzweig often discussed the difference between agency and faux agency; faux agency being the illusion of agency, the ability to act, as long as it does not jeopardize existing power structures (interview with George Mason content producer 4). For instance, Rosenzweig would talk about how throughout time people have gathered together in bars to talk politics, and while this is a form of agency, there is a limit to this agency, in that this sort of political discussion is generally permitted in this setting because barstool politics does not generally upset existing power structures. This content producer says they straddle this issue at the center, in that the center does give agency to some people, but it is done within a safe, uncontested medium

that does not challenge power structures in a substantive way. In this sense, what the center affords people is faux agency, rather than true agency (interview with George Mason content producer 4).

While the center is making an effort to include more voices in the historical record, its efforts are hampered by the preceding critiques. The term 'democratizing' can be used to describe what they are attempting (shared authority, participation, and access), but only with the caveat that there are limitations on what the center is able to accomplish. Accessibility does not equal democracy, but it is a step toward a more democratic environment. There are technical barriers to the center's vision, but again, they are taking steps to create a more open digital historical record. As one content producer says, the center's work may not ever reach an ideal point of democratization (in that everyone has equal opportunity to access and participate in the historical process), but new media tools they create have "opened up history" (interview with George Mason content producer 3), providing new avenues for people to make their voices heard and have these voices saved as part of the historical record. "History's based on your sources and if you don't have sources and it's difficult to find them, then those stories are going to be left out" (interview with George Mason content producer 3). Issues of authority and expertise are not unique to this center; Web 2.0 applications that make it easy for amateurs to publish on the Internet have spurred these debates for the last decade, perhaps most famously Wikipedia has simultaneously earned praise for harnessing the 'wisdom of the crowd' and scathing critiques for being a place that is at best unreliable and at worst a haven of slander and lies. The center clearly takes the stance that the more information that is available, the better it can wrestle with these issues. The sites that the center hosts, such

as the Martha Washington site, are curated and monitored by professional historians. Finally, it is unclear if the center is fostering agency; certainly there is the potential, but the critique that much of what the center takes on is 'safe' in that it does not take on politically challenging projects is valid.

Merging of the Arts and Sciences

The terms content producer and programmer are used in this research to distinguish between the two skill-sets that are necessary to bring digital humanities projects to fruition. Historians are needed to research, organize, and curate historical content for the sites the center builds and bring an understanding of how historians 'think' to the design process of digital tools. There is also a need for programmers who are technically able to create digital tools and websites. However, although there are two cultures at the center their interactions and practices are complex, and the dividing line between the two cultures is porous, with most people at the center possessing at least a rudimentary understanding of both. Interviewees were asked about the nature of their work and where they saw themselves in relation to Snow's (1971) delineation of two cultures. Most aligned themselves with one of the two. This divide has been reinforced by hiring practices that put 'history first'. However, the divide is tempered in that most employees agree that everyone at the center is technically competent, although there are different degrees of competency ranging from 'technically literate' (able to understand programming languages) to 'technically functional' (able to program). As well, there are several employees who consider themselves to be 'bridges' between the two cultures, acting as translators, facilitators, and peacemakers. I argue that these employees come

close to what Snow (1971) imagined when he expressed hope that one day people would embody both cultures in a form of third culture.

i) *Hiring Practices*

Hiring practices at the center have reflected the primary goal of the center as a place devoted to the study of history. Most of the people employed at the center are historians first, who also have an interest in technology. Many of the programmers are in the midst of an MA or a PhD program in history, or have degrees in another humanities or social science field, such as classics or sociology. One programmer says the reason for these hiring practices comes from the center's founder, Rosenzweig, who was an historian first and a "tech geek" second. This programmer says the center needs people who have a real sense of history, as well as knowledge of technology, but history comes first. "That's what our main focus is on, doing good history. And then doing good history with new technology" (interview with George Mason programmer 3). The Directors interviewed confirm this is the protocol. One of the Directors says they almost never hire pure computer scientists because they want their programmers to understand how historians "think" and understand the problems historians grapple with.

> I think we draw a lot of strength out of the fact that the technical staff isn't some alien creature…. We're trying really consciously to build tools and software that make sense to humanists. And that solve problems that humanists have. And so, it is somewhat easier for us to pursue development on that path, working with people who actually intimately grasp those problems. (interview with George Mason Director 2)

He says they have found that pure programmers do not usually understand what historians need out of the technology. "[W]e've found those people are sort of tone deaf to some of the design decisions, not just web design, but the overall information, infrastructure (and) functionality" (interview with George Mason Director 2).

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However, it is not easy to find people who are experts in history and also have programming skills. One Director jokes that they have managed to corner the market. "I think the total population of people on the planet who have a dual interest in history and technology is probably pretty small, but we have almost all of them here" (interview with George Mason Director 5). Another Director, confirming there are not many programmers who are also historians, says they actively seek these people out because they tend to be committed to the kinds of projects the center is interested in and will work for less money than a pure programmer would.

> They tend to work harder, for less money, because they're interested…in the mission. They identify as historians and they want to do this work, as opposed to they want to do technical work and this is a place to do it. (interview with George Mason Director 1)

However, almost everyone interviewed did mention the recent hire of a programmer who comes from a pure computing science background, commenting that this sort of hiring practice is rare. (At the moment there are two employees at the center who come from computing science backgrounds.) One programmer says he sees this new hire as a sign that the hiring practices at the center are changing. They are moving away from hiring people who are humanists first, programmers second, and this reflects a change in direction (interview with George Mason content producer 4). To date, most of the projects the center has taken on have been web-based archives. They are transitioning into areas that will focus on data analysis rather than data collecting. Such a transition will require higher levels of programming skills, including sophisticated algorithmic processing.

ii) *Two Cultures*

Most employees at the center have an interest in both history and technology. As one content producer describes:

> I don't know anybody here who cares not at all about the history. Or who cares not at all about the technology. I think you could take that as sort of an article of faith that everybody here is interested in some sort of marriage of the two themes. (interview with George Mason content producer 4)

Despite interest in the two cultures, it is clear there is a divide between those who deal with content and those who deal with programming. When asked, most interviewees either aligned themselves with one side or the other, or throughout the course of the interview it became apparent that their work focused either in programming or content production. One programmer describes the difference between programmers and content producers in the following way: "We build the tools. They fill the tools up with stuff" (interview with George Mason programmer 4). Most content producers also agree that, although they may have limited knowledge of programming, most of the design and building of tools is done by programmers. Several of the programmers also say this division can be clearly seen by observing who eats lunch together (programmers usually eat together) and how the workspace is physically divided (programmers are gathered in one area).

One programmer says that even though the Directors might encourage employees to be involved in both history and technology, the reality is that the division of work happens out of necessity and is reinforced by limited resources. He describes the programmers' time as at a premium; there is not enough time for the programmers to complete the amount of work that needs to be done. This programmer would like to do

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more humanities work and has brought this up at job reviews, but because there is a high demand for his programming skills, he is often relegated to this type of work (interview with George Mason programmer 1).

As well, despite the prevailing ethos that people at the center are, to varying degrees, immersed in both cultures, there are several people at the center who are there in a purely programming capacity, who have no, or limited, interest in history (interview with George Mason Programmers 7 and 8). These employees represent a very small minority (two, soon to be three, in a center of 50 employees). One programmer characterizes these employees as people motivated less by financial gain and more by a relaxed work environment and the desire to work on open source projects.

> When we actually do attract people who have that kind of technical background to come and work for a humanities place they've already decided they don't need to make twice as much money working in some sort of corporate environment. I think it's definitely a different crowd of people than you would just get if you were rounding up computer folks off the street, or something like that. In (programmer's) case, he was excited about working on an open source project and he thought digital humanities sounds interesting. (interview with George Mason content producer 1)

The programmer this employee is referring to corroborates that he was interested in coming to the center to work on open source projects. As well, as a computer scientist he says he likes working with people from outside his field because he finds they often push the computer science in new and interesting directions that someone from a pure computer science background would not (interview with George Mason programmer 7), in that they are concerned with using computing to mine data and find patterns across historical data. Putting computing to use to archive, present, and subsequently mine historical data (text and visuals) is not what most computing scientists apply their thinking to. (As mentioned, this research has focused on how the humanities is changed

through a merging of the two cultures; future research could be done that focuses more distinctly on how computing is changed through the digital humanities.)

iii) *Different Levels of Programming Skills*

Although most people at the center have some level of programming skill, the level varies. As one content person describes, everyone at the center has a basic level of programming skills that might be considered advanced at other centers, but is not at theirs (interview with George Mason programmer 4). Another programmer agrees that despite the fact that everyone is technically capable at the center, there is a marked difference between the skills possessed by content producers, who write the historical narratives and curate content, and the programmers who write the code and software to put this information up on the web (interview with George Mason content producer 3). Content producers are knowledgeable enough to talk to the programmers about technical issues such as the limitations of HTML or CSS, but they do not necessarily have high level coding skills. One programmer compares the content producers' knowledge to having a basic understanding of a language, versus knowing how to speak and write it fluently. This can manifest in not having an understanding of the amount of time and resources it takes to complete a project (interview with George Mason programmer 1).

iv) *Bridges*

Although most people at the center align themselves with one of the two cultures, there are two people who describe themselves as operating in both cultures. They understand the capabilities of the technology as well as what historians want and need from technology. I have classified both of these bridge people as programmers. Most of their time is spent in this capacity, but they are also both pursuing advanced degrees in

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history and credit this knowledge, along with their self-taught programming skills, with allowing them to operate in both worlds, a skill which helps ensure the success of projects. These programmers come closest to what Snow (1971) imagined as a third culture.

Despite the presence of these 'bridges' there are still marked divisions between the arts and the sciences in this center. It is not a clean divide, however, with most having at least a limited understanding of the other's 'language'. Part of the reason most align themselves with one of the two cultures has to do with personal interest, but there is also the crucial aspect of time; even if one were to become an expert in both history and programming (as is the case with some of the programmers who are in the process of getting advanced degrees in history), there is not enough time to work in both areas. Most programmers address the issue that their time is at a premium, one commenting that he would like to do more historical work, but there simply is not the time in his day (interview with George Mason programmer 1).

Work Environment - Hierarchy

Collaboration is an integral feature of the digital humanities, one that is often touted as setting it apart from traditional humanities scholarship (Bergman 2007; Cohen and Rosenzweig 2005; Siemens 2009). Collaboration is often born out of necessity since there is a wide variety of skills (both programming and scholarly) needed to complete projects. Further, the amount of work it takes to complete a digital project is often both time and resource intensive, making teamwork a necessity.

Working collaboratively is something that all interviewees acknowledge as an integral part of their job. Most interviewees describe a collaborative environment.

However, there are points of tension. According to the programmers there are often situations where content producers want something built that may be technically possible, but does not make practical sense from the point of view of a developer. As one programmer describes: "Usually it's not necessarily impossible. It's usually what we call technically possible, but not going to happen. Because (we have) limited resources in some ways. Mostly time-wise" (interview with George Mason programmer 1). Similarly, another programmer says there is often push and pull between the Directors and the programmers, however, he says these situations are often worked out in a collaborative, conciliatory fashion (interview with George Mason programmer 3). Other programmers echo this sentiment. One Director describes conflict between content producers and programmers as happening less and less as content producers become more knowledgeable about the capabilities of the technology (interview with George Mason Director 5).

The programmers all described a collaborative environment among themselves. They use the common area to work on projects together and regularly turn their computer screens to face each other in order to get input on their work. One programmer says he spends most of the time outside of his office in the main gathering area, only going into the office if he needs to focus. Working in this sort of collaborative environment, he says, enables him to improve his programming skills (interview with George Mason programmer 3).

In addition to describing a collaborative environment, most people interviewed also described a relaxed environment and a congenial atmosphere at the center. Almost all the programmers talk about how they enjoy the work environment, which they

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describe as flexible and laid-back (more so than what they would experience in the business world). The following comment was typical:

> I've had a lot of crappy jobs. This by and away is the best job I've ever had. It's just a very relaxed atmosphere as you can tell. My co-workers are awesome. I like working with all of them. I really enjoy it. (interview with George Mason programmer 2)

As one Director says, they have tried to foster a relaxed work environment by setting up the workspace a bit like a dot com. "We have a Wii machine. We probably need a fooz ball table. We have a lounge" (interview with George Mason Director 2). One programmer says they often describe the environment as "a dot com without the fear of losing money, because we're grant funded and we have the background of the university to support us" (interview with George Mason programmer 3). Employees are allowed to schedule their own hours and they can also work from home. Another Director says they actively try to create a collaborative work environment without many closed doors because this is how great ideas are fostered. "A lot of our good ideas have come about from people having lunch together or running into each other in the hall and having an impromptu conversation" (interview with George Mason Director 4).

Fostering collaborative environments in the digital humanities has been linked with the dissolution of hierarchies and the subsequent distribution of power (UCLA Center for Digital Humanities 2009). A collaborative environment, however, does not necessarily mean a lack of hierarchy. In this center, hierarchies have not disappeared. Interviewees expressed different opinions on how power is dispersed at the center, with most pointing to some form of hierarchy, often citing that this is necessary and inevitable when working in teams, especially in large teams. One content producer describes the work environment as a cross between academia and a start-up, where people are allowed

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to "run with their own ideas, to an extent" (interview with George Mason content producer 1). However, he notes that this is a workplace of nearly 50 people and even though the Directors work at making it non-hierarchical, with this many people working together there is a tendency towards creating "org (organizational) charts" (interview with George Mason content producer 1). Similarly, two of the Directors describe an environment that strives to be as non-hierarchical as possible, but when final decisions need to be made, it is a senior staff member or Director who makes decisions (interviews with George Mason Directors 1 and 2). As one of these Directors describes, "there's a tension between keeping it non-hierarchical, which is definitely one of our goals, and maintaining an organization of 50 people" (interview with George Mason Director 1). What they have fostered, he says, is a "relatively unstructured work environment" (interview with George Mason Director 1), however there needs to be some structure in order to keep track of all the projects that are underway.

There are mixed feelings about how much control programmers have over their work environment. The prevailing feeling is that although there is some latitude, most programmers do not have a lot of control over deciding what work they are going to do and what projects they will be working on. They report to the project managers and supervisors who are content producers and Directors. As one programmer describes when asked who is in charge at the center: "At the end of the day (the Directors) are the ones with the final decisions" (interview with George Mason programmer 2). However, one programmer, while agreeing that the Directors are ultimately in charge, also describes the center as a place where ideas from everyone are valued.

> It's not just the Directors saying – 'this is what we're going to do and this is the only thing we're going to focus on'. Anybody that we work with –

from GRA's (graduate research assistants) to me, to other employees, if they have a great idea they'll go share it with a Director and Directors will get enthused about that. So it's not just their show - everybody's involved in creating the atmosphere, the work, the projects that we do. (interview with George Mason programmer 3)

One Director corroborates, saying that ideas can come from anyone at the center. "If it's good enough and it's interesting enough, we'll go with it. We'll put resources behind it and we'll try to find funding for it" (interview with George Mason Director 3). This has happened with several projects the center has developed. Most prominently, the idea for Omeka came from developers and designers realizing that every time they started a new project they were building from scratch and this was an inefficient way to work; what would be more efficient would be to build a template, like Omeka, from which multiple websites could be designed. Along these same lines, one content producer says that if she had something that she really wanted to pursue and she wanted to get grant funding for it, she would be allowed (interview with George Mason content producer 2). However it became clear over the course of the interview that this content producer does not actually have a great deal of latitude over her work environment and the likelihood of this happening is very slim.

Other employees describe an even less collaborative environment, one in which hierarchies are clearly defined. As one programmer says, there definitely is a hierarchy, even if people want to pretend it is egalitarian:

People will tell you – oh, it's very egalitarian here, but it's only egalitarian in a sense. I mean it's egalitarian, like, somebody's not going to come and boss you around, that way. But, at my level I don't really have the final voice of authority in anything. Even if it's something that's my area of expertise. It can be overridden by one of the senior staff, irrespective of whether I think it's an alright decision. (interview with George Mason programmer 4)

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One content producer points out that there are different levels of job security, pay and benefits at the center and one can tell who holds what position depending on their workspace. "If you have an office that means you have health insurance and a full time position, and all that kind of stuff. Then if you sit out here (the common area) that means you have a stipend and tuition remission" (interview with George Mason content producer 2). This depiction is not entirely accurate, for instance people in offices do not necessarily have full time, secure positions. However, there is some truth to how the center is organized as far as job security and benefits. Directors (who have their own offices) are paid up to three times the amount of programmers and lower end content producers (who share offices). Most of the Directors have secure jobs, either through the center, or through the history department. (Although there is one whose position is funded through grants.) Programmers and the content producers who are not Directors do not have secure jobs. They depend on continued grant funding. Content producers who are graduate research assistants are employed project to project and receive stipends and tuition remissions.

There are contrasting opinions about the type of power programmers have at the center. The prevailing sentiment is that programming is an essential and valued part of the center. This became apparent through all the interviews. However, this sense of importance does not translate into power. One programmer expressed frustration, explaining that programmers never have the final say (interview with George Mason programmer 4). However, other programmers say that programmers do push back when content producers or Directors ask them to do things that would require more resources than could be justified by the output. One programmer expressed the view that it is

actually programmers who have more power than the content producers (who are not Directors), because they have specialized skills that cannot be replaced.

> I look over there at the other side (content producers) and sometimes I feel a bit sorry. I wonder whether they're a little bit more micro-managed and oppressed over there. Our side, the development team…has way more freedom. Because no one knows what we're doing. (interview with George Mason programmer 6)

One content producer says that it is actually the programmers who are really in charge in that they have veto power over projects (interview with George Mason content producer 4). Only one person expressed this opinion, however. The overwhelming consensus is that programmers, although they may have some latitude in their work, especially details to do with design and programming, ultimately do not decide the direction of projects. Another indication that programmers are not on an equal playing field with other employees came from one of the Directors who referred to the programmers as "resources" who are managed by Directors who decide who's time will go where (interview with George Mason Director 3).

One programmer expressed frustration that although his work may be important, the amount of work that goes into what he does often is not recognized, because good programming means hiding the complexities of the underlying code and making the interface easy for users to deal with. While this may be beneficial for the user, for the uninitiated it can seem as if the work behind the interface is not that difficult. As well, this programmer expressed frustration that the work he does is actually boring, routine work and he does not have a chance to say a lot with the programming he does. "I'm a believer that a lot of design is about saying things that haven't been said. Being able to say things. Being able to make arguments or have interesting content" (interview with

George Mason programmer 6). The work this programmer is doing does not allow for this. The programming he deals with revolves mainly around process and structure, and as a result he is "not an integral part of any historical output" (interview with George Mason programmer 6). In this sense, although he may have some control over the work he does, ultimately he feels he does not have a great deal of creative power.

Only three interviewees describe a work environment that exists without (or with very little) hierarchy. All three are Directors or senior content producers. One of these Directors says the center is a very collaborative place to work where "decisions are made by consensus more than anything else" (interview with George Mason Director 4). Sometimes teams defer to a particular person if that person has expertise in an area, but generally, he sees their goal of creating a non-hierarchal workplace as a reality. It is clear, however, that hierarchies exist at the center, despite attempts to disperse power. Directors are ultimately in charge of the direction projects take and programmers, although they may have some latitude in the work they take on and have a great deal of influence over day-to-day programming, generally have little say in the overall direction that projects take. Despite this, there is an overall feeling that programming is a vital and valuable skill.

Challenging the Traditions of History

The center is challenging traditional historical practice by embracing digital technology as a means to incorporate more voices into the historical record. One Director says the center is trying to push history in new directions that they have characterized as both quantitative and qualitative (interview with George Mason Director 2), a theme that was repeated by most of the Directors interviewed, and by one senior content producer.

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The quantitative and qualitative changes are epitomized in the two major projects the center has taken on – Omeka and Zotero. Omeka represents quantitative change in that it is designed to allow historians to preserve *more*, share *more*, and do things *faster*. It is a tool designed to make the creation of online archives as simple as creating a Blogger account. The hope is that individual scholars, amateur enthusiasts, and public history organizations with few resources will use this tool to put their work online, which will increase the diversity of, and access to, historical material. One Director says this tool will even help boost interest in smaller historical institutions' offline archives, because online content serves to peak people's interest.

> The possibility for creating virtual community around collections increases the possibility for creating concrete community around collections. So in that sense we hope that Omeka is going to be a boon to those smaller institutions in a real concrete way. (interview with George Mason Director 3)

The quantitative change enabled by tools like Omeka has the possibility of leading to qualitative changes, but tools need to be developed by digital humanists to deal with the abundance of information. As one Director says, in order to enable this change, digital humanists need to create tools that are able to search this abundance of data in novel ways.

> We need new digital methods to deal with the problem of abundance. And that includes search. It includes document classification. It includes data mining, text mining, these sorts of things will be part of the solution, just as Google was part of the solution to the abundance of the web. (interview with George Mason Director 2)

One way that the center is dealing with this challenge is by developing Zotero, which is designed to change humanities research in both quantitative and qualitative ways. First, Zotero is a data-capture and archiving tool that allows a researcher to archive

documents and websites as well as share these archives. The center has created Zotero Commons, which is part of the Internet Archive, wherein a user can deposit documents (that are in the public domain) that will then be accessible to anyone who accesses the commons. For instance, if an historian goes to an archive and photographs letters of Einstein, these can be uploaded to the commons so the next historian who is interested in these letters does not have to physically make the trip. Zotero Commons also provides a persistent URL to that document, allowing a researcher to cite this URL in an online paper or document, which would bring the researcher directly to the resource. As one content producer describes, this is "transformational for thinking about accessibility" (interview with George Mason content producer 1), in that access to primary resources would be simple and almost instantaneous. Again, this can eliminate the necessity of having to make a trip to a library or archive to see these objects or documents in person, something which can be costly, inconvenient or even impossible. People at the center are already using the tool in this way; one of the programmers, who is also working on his PhD, is planning on making his archival work public, so that others can benefit from his time spent in the archive (interview with George Mason programmer 3). Zotero also allows users to accelerate or streamline their research by integrating online journals with other online digital content (for example, historical manuscripts on Google Books). One Director says, in this way, Zotero deals with issues of "speed or time saving that is really important" (interview with George Mason Director 5).

Second, Zotero is being pitched as a powerful way for a researcher to deal with the problem of abundance by enabling the researcher to sort through their data in a meaningful way. As one Director describes, Zotero brings about quantitative change (by

allowing researchers access to *more*, to store *more*, and to *accelerate* the pace of their

work), but this quantitative change leads to qualitative change in that they are able to

manipulate data in ways that were not possible before (interview with George Mason

Director 2). Zotero is what one Director calls a "relational database" (interview with

George Mason Director 5) in which notes can be written directly into documents (instead

of separating notes onto Word documents) and also incorporated as separate documents

into a larger database. Subsequently, all documents can be searched for patterns and

relationships. This Director describes how this process can work, using the example of an

historian who is studying book publishing; Zotero allows a researcher to visualize their

data.

> With a simple click you can map all your documents, or a subset of
> documents, in either time or space, so you can put things on a timeline.
> For example, if you're working in book publishing, or some aspect of
> book publishing…you can track the rhythm, the ebb and flow of book
> publishing over time just by seeing when the peaks and valleys are in your
> timeline. With a single click you can map all of your sources in
> space…you can see where books are published at any given time just on a
> map. Or you can take all of your documents and you can extract locations
> from them and put those on a map. Say you're reading 25 manuscripts
> from pre-revolutionary France, you can suddenly see all the places these
> manuscripts mention and have those in space. So there's a lot of really
> exciting things you can do with Zotero, because it's this platform that's
> based on a database, that historians really couldn't do otherwise. So, here I
> think you move from quantitative difference, where you can attack more
> sources or do it more quickly, to a real qualitative difference where you
> can suddenly do some really different things and begin asking different
> questions. (interview with George Mason Director 5)

Another Director also says Zotero enables historians to do complex data mining

and visualization that combines disparate texts (such as literature and history), which they

hope will allow historians to understand data in a different way (interview with George

Mason Director 4).

Most of the interviewees describe the work at the center as changing humanities research both qualitatively and quantitatively, however, one critique raised over the course of the interviews is whether these changes actually lead to interpretive changes. One content producer says even though they are collecting material differently, this does not change how historians come to conclusions about the data they are interpreting. "They collect it differently. I think they interpret it the same way that they always have" (interview with George Mason content producer 2). Tools may afford the ability to ask and answer different questions, but they do not change the larger structure of historical research, in that the cultural, political, and social norms that guide historical interpretation remain the same.

The center is also working to change history by digitizing historical documents. Although digitizing history may be seen as a way to improve scholarship by increasing access to objects of study, there are arguments that experiencing an object in digital form, rather than material form, is a markedly different experience. Something is lost when the researcher is not able to spend time contemplating an object in its material form (Borgman 2007; Eiteljorg 2004). People at the center do not have these types of concerns. One content producer addresses this critique by saying it is true that experiencing something digitally is different from experiencing the object in person, but even if one is interacting with the material object, it is often divorced from its context, particularly if the object is in a museum or archive. Furthermore there are advantages to being able to experience content digitally, primarily one is able to get closer to an object than one would in person in order to examine details, and it is easy to revisit an object. However,

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she concedes that seeing something online does change its "aura" and can also be misleading as far as scale.

> One of the things that happens, especially when you're viewing stuff online a lot, you really miss out on scale. If there isn't a good way to represent the scale of the object you're looking at, especially if you're looking at a 3D object, people can be really freaked out or disappointed when they see it in person. It's like when you finally see the Mona Lisa – oh, it's really small. Really, is that it? (interview with George Mason content producer 3)

The center is also attempting to change how history is done by focusing on collaboration with people outside of the center, both by engaging amateur historians and programmers. One of the mandates of the center is to work with people from outside the academy. As one Director describes:

> All of our projects take on tremendous interactions with the world around us. And we haven't been shy about collaborating with lots of different people. People in historical societies. Amateur enthusiasts. Scientists, if we're doing a history of science project. (interview with George Mason Director 2)

For example, the center has a grant from the National Historic Public Records Commission to engage amateur enthusiasts in their work with the Papers of the War Department. The center is now home to tens of thousands of clerical requests and letters between Generals and attachés that are being digitized and put on the web. This takes some specialized knowledge, but they are also in the possession of handwritten material that cannot be OCR'd (optical character recognition – a process that turns books or paper-based text into digital objects that are computer-readable), which would allow the computer to read the text, and therefore needs to be transcribed. The plan is to set up a wiki site where amateur historians can participate in this process. Involving amateurs in

creating the historical record brings up issues of authority and expertise. The center will be dealing with this by having professional historians from the center monitoring the site.

The center also collaborates in the development of code for their projects. Over 300 people have signed up as volunteers to assist with the creation of Zotero. One Director estimates he has not met about 90 per cent of these people. He admits that it is not often that people outside the center contribute to the core functionalities of Zotero (most contribute in smaller ways such as helping format citation styles for journals worldwide), but it does happen (interview with George Mason Director 2).

Discussion and Analysis: Structuration

i) Democratization

The center evolved out of the democratic ideals held by its founder, Roy Rosenzweig to include the voices of the poor and the working class in the historical record. Although democracy is a complex and contested term, most people at the center are clear that by democratization they mean including more voices as part of the historical record by creating tools that allow people to tell their own histories, increasing access to historical material, and creating digital resources that showcase recent and past history from a wide array of sources. This overarching theme of fostering shared authority incorporates several different areas of focus at the center. First, one of the main tools the center has developed, Omeka, is designed to make it easy for small historical groups or amateur enthusiasts to create historical archives. Second, the center designs projects and websites to capture the voices of 'ordinary' people involved in recent historical events, such as Hurricane Katrina. Third, the center creates websites and digital archives about historical figures that have been understudied or overlooked in history.

Fourth, when websites of primary source material are created they do not necessarily contain a narrative constructed by professional historians; rather they strive to present this material in a neutral manner in order to encourage those who visit the archive to construct their own narratives (the transference of archival material from offline to online has been described as the "democratization of data" (interview with George Mason programmer 4)). Finally, the center's commitment to democratization includes creating open source material that is free for people to download and use. Users are encouraged to create plug-ins for the tools the center creates and help in tool development by suggesting changes or assisting in actual programming.

The center's commitment to this version of democratization can be seen in terms of structuration; the center is attempting to challenge the norms and traditions of the discipline of history by eliminating or reducing barriers to participation, and encouraging the rise of "citizen historians" (Davidson 2008). It is clear that the center is making concerted efforts towards this goal, and while this goal is admirable the center has only been able to take partial steps in this direction. Several issues cast doubt on whether what is happening at the center can be defined as democratizing and whether it is truly changing historical practice in a substantive way. First, accessibility does not equal democracy (in this case shared authority); simply making information more readily available does not mean that authority will be flattened, and the voice of experts (in this case professional historians) will no longer be the authoritative voices. As well, building free, open access tools does not necessarily correlate to new voices; tools might encourage those who were already so inclined to participate in the making of history, but will not necessarily entice new users. As one content producer noted, the center has not

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been very successful to date at recruiting amateur historians to use tools such as Omeka (interview with George Mason content producer 3). Second, there are also technical barriers to the center's version of democracy. The tools being built are only potentially democratizing for those who have fast, convenient access to the Internet. Although free Internet sites are available in many libraries in North America, public access is very different from having access in the home. It is often the poor and disadvantaged who do not have access in the home (Murdock and Golding 2004), the very voices the center is trying to reach in many cases. The center does make attempts to reach people who may not have this sort of access (as in the case of the Hurricane Digital Memory Bank), but it is still clear that the tools they develop best serve a certain section of the population. Third, there are issues around authority and expertise; while there is certainly a need for more voices in the historical record, there is also a need for guidance and quality assurance. Traditional history has evolved a system to judge authority and expertise, a system that is lacking in the online world. Adding more voices to the public record is not fully democratizing if people are unable to make sense of the material and judge its relevance and quality. There is still a need for the professional historian to help curate and navigate through online historical information. It is unclear, however, how this can be managed while still providing agency to the non-professional historians who may want to question the authority of accepted history. Finally, there is also the very real concern that the center is simply fostering an apolitical sense of democracy that is not steeped in real political change. The critique of one content producer who says the center may be encouraging faux agency by enabling more voices within an environment that ultimately does not threaten existing power structures has some merit. The projects the center takes

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on are fairly 'safe' in that they are not particularly politically challenging in a North American context. (Although it could be argued that the Hurricane Digital Memory Bank was politically challenging, in that its aim was to collect the voices of marginalized people who many felt had been unfairly treated by government rescue operations; it created an archive, a piece of history, that otherwise would have been overlooked. This archive now stands as a record of these people's experience, which can be used as primary source material.) However, just because the center has taken on fairly apolitical projects to date, does not mean that this is what future projects will reflect. As well, even if people at the center do not take on political projects, they are creating free, open source tools. It is possible that other people will use these tools to advance their political agendas. So, while the center itself may never take on projects that challenge the status quo, since it depends on funding from federal and private funding bodies, someone else could. Depending on how their tools are used, it is possible they could foster 'true', rather than 'faux' agency.

ii) Challenging the Traditions of History ~ Two Cultures ~ Hierarchies

Although these areas of discussion are being singled out in the interest of clarity, they are not divorced from the overall question of democratization. First, the center is attempting to change traditional historical research in both quantitative and qualitative ways. The quantitative change (allowing historians to preserve *more*, share *more* and do things *faster*) is seen as leading to qualitative change (querying data in novel ways). A key aspect of this change is that the hope is there will be increased participation in, and access to, the discipline of history and the cultural objects historians study (both through consumption of material and participation in creating the historical record) and that new

ways of querying data will uncover history that had been overlooked. It is clear that the center is making significant steps in this direction. However there are several issues that cast doubt on the significance and scope of the change. First, as one content producer points out, while the potential may be there to change how data is queried, it does not necessarily change interpretation, in that the same people are interpreting findings in the same way they always have. However, the counterpoint to this is that the diversity of the historical record, enabled by digitization, will in itself engender change; data from more diverse sources will lead to more diverse history, regardless of who is doing the interpretation. It is also unclear, however, how far these tools are reaching and whether they are being used by a diverse group of people, since the center has no concrete way of assessing their reach. Further to this, one Director makes the point that the querying of data archives, which is supposed to be essential to how the digital humanities will transform humanities research, has not materialized in a substantive way. She points to the archives the center has created with the Hurricane Digital Memory Bank and is creating with the Papers of the War Department as examples of how the digital humanities has excelled at creating archives, but what is needed now is for people to use these collections to write history.

> We have created the archives and we've written articles about the process of creating the archives. We haven't actually done inquiry with the sources….I'd like to see some scholarship grow out of those digital archives. (interview with George Mason Director 3)

This Director's point is one that is recognized more widely throughout the digital humanities; much of the focus to date has been on the creation of archives and the potential of data inquiry. However, the focus of many digital humanists, including those at the center, is turning towards using and manipulating data. The recent Digging into

Data funding initiative that involves government funding bodies from Canada, the United States and the United Kingdom, is a sign that funding bodies are wanting researchers to focus on this realm.

The center is also trying to change historical practice by emphasizing collaboration, merging the two cultures, and dissolving hierarchies. By making these changes, the center is trying to create a more democratic work environment, one in which people have more control over the work they do, the direction the project takes, and are able to participate more fully in their professional lives. As will be described, they have had some success, however the center is one in which hierarchies still exist and history takes the lead as the two cultures attempt to merge.

The emphasis on collaboration comes in part from necessity in that projects require expertise in both history and programming, but also from a sense that it should be recognized that historians always rely on others. One Director says the image of the humanities scholar working alone in an ivory tower is a romantic myth; the reality is that the scholars often rely on many people to help with their research, including librarians and archivists.

> There's a vertically integrated industry from the dissertation through the book into tenure, and then beyond that into the full professorship, that you need to have these brilliant insights yourself. So it's a tough thing to talk about collaboration. And people get worried about credit and validation, accreditation. (interview with George Mason Director 2)

This emphasis on collaboration comes in part from the founder, Rosenzweig, who wrote one single authored book during his career; the other eight were co-authored, reflecting his belief, as one Director puts it, that "the aggregate was better than the individual" (interview with George Mason Director 2). However, as noted, the academic

reward and tenure system values single-authored work over collaboration and generally does not recognize digital work, which means academics working at the center meet resistance when submitting digital work for tenure and promotion purposes. One Director says that although the George Mason history department does recognize digital work, when it came to his tenure application what made it a "slam-dunk" was the fact that he had also published a print book. Although his department was prepared to accept digital work, at the university committee level "they were still obsessed that I had a real book" (interview with George Mason Director 2). One programmer, who is also doing a PhD in history, says he is planning on a digital dissertation and he will be one of the first not to have a complementary print version. He understands this is a risk, but it is one he is planning on taking because he feels that at his university at the moment "there's enough faculty willing to go to bat for it" (interview with George Mason programmer 3). If he does succeed, he would be setting a precedent.

One key feature of the digital humanities that sets it apart from traditional humanities scholarship is that it combines the arts and the sciences, and there has to be collaboration of some sort between the two cultures. At this center, although there is overlap, with employees having familiarity and an interest in both history and programming, there is still a divide between people who are primarily programmers and those who deal primarily with content. Those who come closest to embodying a third culture are the programmers who describe themselves as bridges between the programmers and the content producers. They consider themselves to be literate in both languages and act as mediators and go-betweens when there is conflict or differences of opinion between both cultures. Although all people at the center claim to have some

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understanding of programming, these programmers (who are the most skilled programmers at the center and are also in the midst of attaining advanced history degrees), come closest to what Snow (1971) describes as a third culture. There is also one Director who fits this advanced level of skill in both areas.

It is clear, however, that having a history or humanities background is the priority at the center. To date the center has focused on hiring people who come from a history background. The Directors at the center see this as one of their strengths; programmers with a background in history understand how historians 'think', and thus incorporate this knowledge into design, which in turn leads to tools that historians will actually use. The programmers they have hired who do not come from a history background usually have a background in another humanities or social science discipline. This emphasis on 'history first', however, may be changing. The most recent hire has a computer science background, which some employees see as a signal that the focus of the center may be changing. The center will be concentrating less on web-based tools (which require lower programming skills) and more on search and analysis tools (which require more high end skills).

The center is also trying to change how organizations normally function by creating a non-hierarchical work environment. Almost everyone interviewed describes a relaxed, collaborative work environment; many even describe a sense of empowerment from their work environment, one that allows a level of flexibility, autonomy, and respect. However, it is clear that there is still a hierarchy at the center, albeit one that allows for flexibility. Project managers, who are usually Directors, have the final say over the direction of projects. Programmers, who play a vital role at the center, do not have

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ultimate control over the direction of projects or a great deal of latitude over their work schedules. Although they may be able to set limits, in that they have a greater understanding of the technology at play, they generally are not in charge of projects the center deals with. It is clear however, that most programmers are willing to take on new challenges and complete projects that are assigned; there is not a lot of friction that occurs on this level. Most programmers (and lower level content producers) also describe an environment where they are allowed to take on new ideas and projects themselves. However it also became clear that their time is at a premium and although this may be an option, it is not always feasible. Interestingly, even though it is clear that in practice programmers do not have much power, the prevailing *feeling* is that programming is powerful and a skill that one should have. All content producers and Directors are proud of their programming skills, even if they are limited. Throughout the interviews, in a manner meant to portray the importance of programming, it was pointed out that everyone at the center can program to some degree.

Discussion and Analysis: Commercialization and Commodification

The work that transpires at the center falls outside the realm of "commodification" (Mosco 2009) in that the tools that are being created are not directed towards a commercial market and as such there is no exchange value at play. The reason the center does not create commercial products is partly due to the fact funding comes from a state institution. As one content producer says: "We really believe…if you're getting federal money from projects you've got to be creating things that other folks can share or replicate or easily learn from" (interview with George Mason content producer 3). However, even though it is not creating material geared toward a commercial

audience, the center still has a duty to its granting bodies, the source of most of its revenue. As one Director puts it: "we have to please funders" (interview with George Mason Director 2). He describes the responsibilities the center has toward funders as "make the funders happy type responsibilities" (interview with George Mason Director 2), which includes creating products that fit what the granting bodies have agreed to fund, within the timeframe that has been agreed upon. One programmer who is often brought in to help write grants, says his role is to make sure that the technological aspects are feasible within the time fame they are proposing. He says when you write a grant, you are expected to deliver what you have promised. "And from what I understand if you don't meet (the deliverables) you'd better have a really good reason" (interview with George Mason programmer 1). As well, the center is constrained by the fact that granting bodies tend to fund 'new' innovations, rather sustaining existing projects. As such, finding money to keep projects sustainable can be more difficult than getting funding to start new projects (Brown 2006). One Director confirms that this is the situation that the center faces.

> Innovation is prized more than refinement or sustainability. It's hard to apply to the agencies that we often get funding from, saying we want to make a tool better or we'd like to continue work on this tool, even though it's not going to offer anything new. The opportunities for that kind of grant are far fewer than ones that promise to build something new. So a lot of the time what we are thinking about is how to create new technologies and especially how to integrate them with existing ones in order to really make them sustainable. (interview with George Mason Director 4)

The difficulty of obtaining money to keep projects sustainable is also part of the reason the center has geared its projects towards creating open source tools; this enables it to tap into a broad range of users who will ostensibly be able to add to the tools and improve on them. However it is unclear how many people are actually contributing to its

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projects in a substantive way. For instance, although a user can make suggestion or create plug-ins, the people who are directly employed by the center have the ultimate control over the source code.

Conclusion

The center is making genuine attempts to change historical practice, foster individual agency, and challenge the boundaries of the discipline of history. There are limitations, but the center is expanding the breadth and reach of historical material in a modest way. Chief among the limitations are issues with reach, including the fact that the technology they are developing only services a certain privileged section of society, and they are responsible to their funding structures. The center is not operating in a vacuum, in that it is not conducting 'pure' research, free from the pressures of creating products designed to be desired and used. There are expectations that the tools it produces will be adopted and used by historians, both professional and amateur. The center relies on funding sources that expect deliverables. Although it may not be creating a product for sale, these products are not free from expectations, but are developed with the expectation of fulfilling a public good that has been designated by funding sources. As well, despite the fact the center is not creating products that are meant to be commodities or commercialized in the sense that they are to be sold or marketed in order to make a profit, the center is not free from an economy, but rather, sees itself as part of the gift economy of the Internet in that it creates open source resources and recruits volunteers, encouraging users of its products to also manipulate, improve, and make suggestions. Although the focus of this research is not on consumers'/users' relationships with the center's products, it is clear that by doing this the center is forging into the territory of

prosumption. This is something that is painted in a positive light by most people at the center, however there is considerable theoretical debate over whether prosumers are empowered or exploited (Ritzer and Jurgenson 2010). As Ritzer and Jurgenson (2010) describe, with "traditional prosumers" (21) (busing your own tray at a fast food restaurant, getting money out of an ATM machine, pumping your own gas, etc.) it is clear that prosumers are being exploited, in that they are working for free. However, exploitation in terms of prosumption in a Web 2.0 era is more "ambiguous" (26), since people seem to enjoy prosuming and often feel empowered, as if they are given choice and a degree of control. This push to involve users in the center's work is not framed in terms of exploitation by interviewees; interviewees who addressed the open source leanings of the center talk about taking this direction in order to empower users, to make history more democratic by encouraging increased participation from those outside academia. However, while the intentions of the center may be honorable and the effects rather benign (it is unclear how much free labor actually occurs at the center), it is imperative to realize that prosumption is murky territory. Even though they may feel they are doing this to empower users (and users may very well feel empowered), they are asking people to work for free. This might be embracing what some see as the 'free spirit' of the Internet, but it is still unpaid work.

There is also clearly a divide between the two cultures at the center, even though there are attempts to merge the two. There is a hierarchy of power with those who come from a humanities background largely dictating the direction the center takes. However, programmers do have a modicum of power, in that they possess indispensible skills. There is much good will at the center, in that there are genuine attempts to involve all

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members in the design and direction projects take. However, due to the logistics of managing groups of people, an ingrained culture that puts history first, as well as a lack of comprehension of what programming entails (in that much of what goes on behind the scenes in programming uses a language and skill base not fully comprehensible by content producers), hierarchies still exist. It is also apparent that there is a hierarchy in terms of job security. The Directors who also have tenure through the university's history department clearly enjoy more job security than other employees who rely on grant funding for the continuation of their positions. As the center moves toward more highly skilled programming tools, perhaps the balance of power will shift, but at the moment, despite attempts at convergence and the people who consider themselves to be bridges, the two cultures divide imagined by Snow (1971) has not completely disappeared and the center is not a fully democratic workplace in that not everyone is able to participate fully in the decision-making that takes place at the center.

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Chapter Six

The Orlando Project

Introduction

In 1928 Virginia Woolf published her novel *Orlando*. The book, which has become a seminal piece in English literature and feminist studies, is said to be a thinly disguised autobiography that blends fact and fiction. Woolf's novel was groundbreaking at the time, in how it played with genre and gender roles. Seventy years later, researchers at the University of Alberta and the University of Guelph, as a nod to Woolf's considerable influence, decided to name what they saw as their groundbreaking project, *The Orlando Project: A History of Women's Writing in the British Isles* (Orlando). Orlando is an online digital archive that contains over 13,000 entries on women's writing in English, as well as other contextual material. The creators say this project aim is to be "history with a difference" (The Orlando Project, n.d.), in that scholars researching women writers in this index will also be directed to related material from the fields of law, economics, science, education, medicine, politics and writing by men. In total there are entries on 1200 individual writers (995 British women writers, 171 male writers and 155 other women writers), plus the material from different social, economic, and political perspectives. To date, one of the things that digital humanists have been very good at is digitizing material and putting it online. What they have *not* been as good at is coming up with ways to search this material that will actually bring about new humanities scholarship (Bobley 2008). The creators of Orlando believe that their digital archive will go some way to change this. The project has been designed to allow users to make

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connections between writers and themes – connections that might not be apparent if one was studying these writers in print.

Although Orlando is a digital project, its roots are offline. In 1990 three English professors who were graduate students together at Oxford – Isobel Grundy, Virginia Blain and Patricia Clements – published *The Feminist Companion to Literature in English*. This reference book is a thick volume, with nearly three hundred entries. Although this kind of book might seem quite tame by today's standards, at the time, gathering this sort of material together under a feminist theoretical framework was seen as something radical. The editors were so pleased with the results the decision was made to work on a follow-up. The editorial board did shift slightly – Virginia Blain stepped down and Susan Brown from the University of Guelph was recruited. They also changed part of their focus. Brown suggested they try incorporating computing in their project and turn it into a digital text base. With this idea in mind they applied for funding under the Social Sciences and Humanities Research Council's (SSHRC) Major Collaborative Research Initiative. They were successful and in 1995 *The Orlando Project* was awarded a grant of 1.6 million dollars. The purpose of the grant was to invest in creating five print volumes and an electronic text base. Sixteen years later those five print volumes never materialized, but the electronic text base has flourished and grown into something much larger than their original expectations.

The project centers on two ideas. First, its aim is to explore the role of women in creating literary culture. To that end, it is the first project of its sort to take on an overall history of women's writing from the British Isles. Second, it aims to use technology to generate sophisticated responses to the questions asked in the study of culture and

literature. They have 'marked up' and 'tagged' the digital text with an underlying code. This code, invisible to the user, allows people to sort and search the material. The hope is that this searching capability will lead to new scholarship that would simply not be possible offline. Clements calls it "a dynamic text" and a "dancing literary history," in that it is history that is capable of moving differently, each time a researcher asks it a question (Clements 2008).

Orlando was published – in that it was made publicly available by subscription through Cambridge – in 2006.[45] The three principal investigators (PIs) have remained constant throughout the life of the project, but different people have revolved through the various other positions on the team. Orlando is a 'living project', in that it is regularly updated with new author entries. As well, they are still experimenting with the technology and different ways to sort and display information.

As with the previous case study, this chapter will begin by examining whether Orlando is democratizing, in the sense of increasing access to, and participation in, English literary history. The goal of Orlando is to increase access to these writers, which it is hoped will foster a more complete historical record. However, there are several issues that temper any democratizing leanings, including, most significantly, questions as to its reach and the absence of solicited input from outside its ranks (people who work directly on the project). As such, it does not appear to promote what Giddens (1984) would call "agency". This chapter will then turn to how the arts and sciences merge in Orlando. Using Snow's (1971) framework of the two cultures, this section will examine

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[45] Essentially Orlando's publishing contract with Cambridge is similar to many print publishing deals in that the three PIs are recognized as authors and receive royalties, but in this case the royalties amount to a percentage of the subscription sales rather than book sales.

how the cultures overlap and where there are divides. Almost everyone who works on Orlando operates, to a degree, in both cultures. They all have a level of computer proficiency and most also deal with English literary history. However, despite this, it is clear that there is still a divide between the two cultures, with some employees who deal exclusively with the more high-end, complicated computer programming and others who deal predominantly with the literature. That said, there are several people who consider themselves 'bridges' between the arts and the sciences, people who come close to what Snow imagined as a third culture. The next theme that will be explored is collaboration and hierarchies in Orlando. The digital humanities is often touted as distinctive because of the emphasis on collaboration and a lack of hierarchies (UCLA Center for Digital Humanities 2009; Siemens 2009). As will be shown, Orlando does manage to foster a degree of collaboration, but nonetheless is a highly hierarchical organization. Finally, this chapter will turn to examining how Orlando is attempting to change the traditional structure of English literary history by pushing the boundaries of the discipline. However, as with the previous case this chapter will begin by delineating how Orlando is funded and with a description of the employees.

Funding

Orlando receives funding or support-in-kind from various sources, including government grants, the two universities, royalties from its publisher, personal donations, and private corporations. As mentioned, Orlando began with a grant from SSHRC. It continues to receive grants from government sources in order to pursue experimental work integrating computing with the humanities. In particular it receives funding from the Canadian Foundation for Innovation (CFI). It also receives support from the

University of Alberta and the University of Guelph, which provides money for staff (particularly research assistants) and physical space. (The project occupies a small block of rooms on the third floor of the University of Alberta's Humanities wing.) According to several of the interviewees, the royalties that come in from Cambridge are nominal. I was not given exact figures, but was told the royalties do not even cover operating expenses. Orlando has also received several personal donations (again figures were not disclosed) and the Inso Corporation, a high tech company that deals with electronic publishing, has provided free software in the past.

Programmers and Content Producers

As detailed in the previous chapter, the digital humanities requires people who are skilled in both the humanities and computing technology. The division between skill sets has been referred to as "subject expertise" and "technical skills" (Warwick et al. 2008: 387), or a division between "academics" and those who are "technical-oriented" (Siemens 2009: 228). As with the previous case this one will also make a distinction between those who work primarily on content and those who work primarily with computing technology. This distinction is made in order to query the dividing lines between the two skill sets, as well to examine where they overlap. It should be noted that everyone on Orlando possesses some technical skills, which they use in their day-to-day work. However there is a distinction between those who work on high-end, complicated programming and those who use technology to do simpler tasks such as marking up text. Throughout this chapter the term *programmer* will be used to identify those who work exclusively, or almost exclusively with technology in the more high-end programming positions. *Content producer* will be used to identify those who deal more exclusively

with creating content for the site. For the most part, the programming content producers take on is fairly simple, such as document markup. At times a distinction will be made between senior content producers and junior content producers, particularly when examining the hierarchies that exist in the project. At the Center for History and New Media at George Mason several people identified themselves as bridges between the two cultures. However, throughout the chapter they were not identified as such, because the bulk of their work (and their job description) was programming. On Orlando there are also several people who act as bridges between the two cultures, but these are both formally and informally recognized as such. For example, the text-based manager (sometimes called the project librarian) is formally recognized as a bridge position. Moreover, there are several other people who have formal expertise in both English literary history and computing (or have developed an expertise in computing) and are considered, to different degrees, to be knowledgeable in both cultures. In recognition of the role they play, these people will be identified as bridge people throughout. The distinction between the two cultures and the multitude of points of overlap will be explored further in this chapter.

Democratization: Reach and Accessibility

The Orlando Project is democratizing in two senses. First, the goal is to bring wider attention to writing by women in English. By digitizing reference material the hope is that it will be easier for people to access, which in turn will expand its reach. Further to this, the project also focuses on the work of more obscure writers, whose work is not readily accessible in most libraries. As one bridge person says, the project is democratizing because Orlando is a "feminist reclamation project" that is using digital

media to create "a record of literary history that wouldn't be available otherwise" (interview with Orlando bridge 1). Another content producer describes Orlando as exploring "aspects of female experience that had been excluded from traditional accounts (of English literature)" (interview with Orlando content producer 1). As one bridge person puts it, the database contains 'big names' like Woolf and Austen, but "really what they wanted to do was to bring out those women writers who had been lost to time, who had been little known or little studied" (interview with Orlando bridge 2). Admittedly, the most famous get a great deal of screen time, but the Orlando search engine is designed to bring lesser-known writers to a user's attention. Many search engines, such as Google's, return searches based on popular links. In this type of system the most well-known rise to the top and the more obscure remain out of sight. Orlando's search system has been designed so that it will always bring up more obscure writers, along with the more famous.

> Although Orlando entries on well-known and highly respected women authors tend to be significantly longer and more detailed than those on the obscure, the presence of the obscure will always register in searches involving any topic in which their concern has been recorded. Little-known writers are therefore more pervasively present to readers of this text base than they can be to readers of a conventional literary history, whose coverage of such writers is likely to be limited to one particular passage. (Brown et al. 2007: 133-4)

Another goal of Orlando is to make obscure texts more accessible by providing content that will help readers interpret them. As one content producer says, in principle anyone could go out and read the texts of early writers, but it is hard to fully understand them because "these are texts separated from us by hundreds of years and a whole lot of different assumptions" (interview with Orlando content producer 2). Orlando is designed to provide historical context, which, it is hoped, will help create a deeper understanding

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of the material, especially for users who are not experts in women's literary history. The hope is that this type of context will encourage an understanding of the material and help, as this content producer puts it, spread "specialized information to people not in that specialty" (interview with Orlando content producer 2).

Democratization - Critique

Over the course of the interviews, several themes arose that question whether Orlando really is democratizing. First, it is unclear how much of a reach the project has had, and whether this has led to change in scholarship. The decision to have Orlando published by Cambridge has a great deal to do with restricting its influence. There are also questions as to how Orlando can be democratic if it is a closed system that does not allow input from users, or anyone who is not specifically asked to contribute content and is only available by subscription. In addition, there are technical barriers, accessibility issues and questions as to Orlando's theoretical agenda, that all temper its democratic potential.

i) Reach

Most interviewees express concern and regret that Orlando in its present form is not having the reach they wish it would. As one bridge person describes, the goal of Orlando is democratization as evidenced by its goal of uncovering women writers who are being lost to history. However it is questionable whether this project is actually affecting scholarship, since it does not collect exact data on who is using it, and how.

> The goal of the Orlando project (is): here's a thousand women writers you've never heard of and should have. So that's fantastic. I mean, it's a recovery project and the material just wasn't accessible. [However] I don't know that *we* know who's picked it up or if there's been a proliferation of people working on these authors now that they're more available.
> (interview with Orlando bridge 3)

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What is clear is that in its present iteration Orlando is reaching primarily academics and university students. Most subscriptions have been with university libraries.

Many interviewees say the hope is that Orlando will be of interest more generally. For instance, one content producer says she envisions it as a "kind of first stop source of information for a lot of people," such as high-end travel agents who are organizing tours based around literary figures, book clubs, or anyone with a general interest in history (interview with Orlando content producer 2). However, this content producer says they have had a lot of problems publicizing and marketing Orlando. She says this is "something that electronic projects by subscription have to deal with because there's an expectation of knowledge and information being free on the web" (interview with Orlando content producer 2).

It is clear that one of the primary reasons the project's reach is restricted comes from the decision to publish with Cambridge. The project is only available through subscription. If one does not have access through a library (and there is a cost to be part of a university library) then the subscription rate is 105 dollars a year. While this might not be prohibitive for some, it certainly is for others.

The decision to publish was made for both financial and academic reasons. It gives Orlando a source of ongoing funding, which has been important to its continued life. As one content producer says, in the beginning they considered making Orlando free, but as it is a "living" project that is continually updated "there has to be money from somewhere" (interview with Orlando content producer 1). To keep the project running, graduate students, a half time text-based manager and a half time systems analyst are on

the payroll. As well, money is needed for the upkeep and replacement of equipment. Several of the interviewees point out that it is much easier to get grant funding for new projects than funding for ongoing projects and this also influenced the decision to seek out a publisher. One bridge person says that funding bodies are still in "book mentality," in that they are used to funding projects that have a completion date, and are not set up to deal with digital projects which are "living organisms," and need continued support to stay alive. For that reason, she says they had no choice but to go with a publisher.

> [W]hen I first started on the project it was very much – this thing is going to be out there and it's going to be free because we want as many people to get it as possible…. But as time went on and the money started to dry up it was sort of a realization that if we wanted this project not to die a slow quiet death and just end when that funding ran out, if we wanted it to continue to grow and be updated and so on, then we really needed to figure out how that was going to happen. (interview with Orlando bridge 2)

The royalties from Cambridge are nominal and do not cover the cost of running the project. That said, many see these royalties as vital to the project's continued operation. One content producer says, if Orlando was free, it would have to be static. At the moment they are actively updating it, dealing in particular with living writers (Margaret Atwood was brought up as an example of an author that keeps them "busy"), as well as an upsurge in new biographies on eighteenth century writers (interview with Orlando content producer 2). As another content producer describes, open access is a "great idea," but money has to come from somewhere or their staff will not get paid and they would not be able to afford upkeep on the computer systems they use. "Graduate students don't get paid. The research doesn't get done. The machines don't get repaired" (interview with Orlando content producer 1). Publishing with Cambridge has also helped ensure more funding from the university. As she says, universities do not have a great

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deal of money for research, and in order to get universities to invest in your project you need to make your project credible. Credibility comes in part from publishing with a high-profile academic publisher.

The second reason they decided to publish with Cambridge has to do with this issue of credibility and peer review. Cambridge is a highly regarded academic publisher and having the Cambridge name attached to their work lends the project academic legitimacy. As one content producer describes: "They are the name. They have standards" (interview with Orlando content producer 2). Another bridge person explains that when they began the project in the early 1990's digital scholarship was "not on the radar for most people" (interview with Orlando bridge 1). Those who were dabbling in the digital were simply digitizing text. Orlando, by contrast, was creating work that was born digital, which was something novel, but also suspect. Publishing legitimized their work. It signaled to other academics that Orlando was peer reviewed, and as such was more credible than if it only uploaded unvetted material to the web.

The decision to publish with Cambridge was, and continues to be, controversial, primarily because digital humanists usually focus on creating open source material. All interviewees who spoke about the publishing decision say if they had the choice, they would like Orlando to be free. However, at the same time, most interviewees acknowledge that having Cambridge as a publisher lends academic credibility that has been important and useful. There was one dissenting interviewee, a bridge person, who expressed the opinion that Orlando would absolutely be the go-to place on the web for this kind of information if it were freely available, and this would "outweigh any kind of cachet of publishing with Cambridge" (interview with Orlando bridge 1).

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ii) Input from Users

One bridge person says the project is not as democratic as the Center for New Media and History's Omeka or Zotero, in that Orlando does not currently solicit input from people outside the core of its project. However, she says they would like to open it up to a "broader scholarly community" (interview with Orlando bridge 1). Several other interviewees echo this sentiment. However, there are two issues with this: one is technical and the other has to do with authority and expertise. At the moment Orlando is not set up to accept input from people outside the project and to do so would require a major technical readjustment. As well, the technical language of Orlando – the markup – is difficult to learn. All interviewees acknowledge that there is a steep learning curve. One content producer says it takes a new graduate student roughly 100 hours to learn the system. Most interviewees mentioned Orlando's markup system as problematic. In the beginning, when Orlando was first being conceived, they did not realize how complicated their system would end up being. The impression that was conveyed throughout the interviews was that people would like a simpler system, but there has been so much invested in what they have created already that it would be very difficult, and costly, to start again. In addition, the system is sophisticated, in that it enables complicated cross-referencing and pattern recognition, and this is an element they appreciate in the system.

However, even if they were to figure out a way to open up the system, they would still have to wrestle with how to integrate material from outside sources. In particular, they would have to deal with integrating amateur and expert knowledge, and making sure information on the site is credible (interview with Orlando content producer 2).

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iii) Technical Barriers

Orlando may be democratizing, in that the digital information it contains is more accessible (disparate material is aggregated in one place and retrieval is simplified, enabling access through a computer terminal, thus eliminating the necessity of physical travel to a library or archive). However, this access is not universal. As one content producer says, just because something is on the Internet does not mean everyone will be able to use it. "It's out there on the airwaves, but what if my granny can't run a computer? What if she can't afford to buy a computer" (interview with Orlando content producer 1)? Her point is that to say Orlando is accessible assumes one is technologically savvy, and also has the means to afford a computer and Internet access. Even in areas that are wired, Murdock and Golding (2004) point out that there are "hierarchies of access" (247). For instance, those who have Internet access at home or at work are at a considerable advantage over those who connect through public access sites. In this sense, Orlando is only democratizing for those who have fast, affordable access to the Internet. As mentioned (see footnote 7) there is considerable disparity in Internet access in North America.

iv) Accessibility

Most interviewees agree that Orlando is targeted towards scholars and graduate students. However they feel (and hope) the information would be valuable to undergraduates and to a more general audience. As one bridge person says:

> [T]he idea is we had hoped everybody from an undergrad student who is
> in their first year looking to write a paper on Jane Austen could get
> something out of it, just as well as a professor who's been studying Jane
> Austen for twenty years might be able to find something new because of
> what the technology offers in terms of bringing out those relationships.
> (interview with Orlando bridge 2)

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However, in order for the material to be accessible to a wider audience, many interviewees say the interface has to be simplified. The content is written in such a way that it is accessible, but the interface to search the material is quite complicated. Although they do not have exact data, they believe that Orlando's search capabilities are not being used to their full capacity, in large part because the system is so difficult to master. One bridge person says they are constantly working on creating a site that is easy for anyone to use, but accessibility often is in conflict with functionality. The key is finding a balance between the two. For instance, one programmer says that for people who are used to Google's simple interface, the Orlando search engine is much more complex. He says it has to be "because we offer the ability to refine, to get deeper into the material than Google does" (interview with Orlando programmer 1). As he says, searches can be limited and refined in ways they cannot with Google.

> So there's this constant trade-off… How do you appeal to the users that want a simple interface like Google *and* to the users that are deeply into research and want all these little knobs and dials to refine and get the answer that they're looking for? (interview with Orlando programmer 1)

At the moment they are experimenting with "Google-esque" type interface, but have not found a solution to the dilemma.

v) Theory

Finally, several interviewees addressed the idea that there is often the assumption that digitized data is atheoretical; on this project in particular, that digital material is being made available to people without an agenda that scholars can then access in a raw form and interpret for themselves. One content producer says the goal of the project was to get away from overarching historical narratives and allow people to create their own

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narrative structures. She describes Orlando as a postmodern attempt to reject causal explanations and take into account women's voices that had been excluded from history. "Orlando had this goal of using the technology to write a postmodern literary history, a literary history that didn't have a narrative frame, that allowed users to construct that literary frame. And that was (our) cutting edge goal" (interview with Orlando content producer 3).

However, one programmer makes the point that despite this goal Orlando *does* have theory "built into it"; instead of presenting raw, atheoretical data, they are really "setting up an ontology, a way of talking about women's literature" (interview with Orlando programmer 2). This ontology and theory is built into the tagging system (which sorts the material into themes). In fact, she describes the entire project as "theory-laden," in that "the things that they chose to link were reflections of what they thought should be read into the literature" (interview with Orlando programmer 2).

Orlando is making an effort to expand the reach of women's literary history, both by increasing access to this material through digitization and fostering a deeper understanding of this material through providing contextual guidance. It is also attempting to increase participation in the historical record, although not in the same way as the Center for History and New Media. While the center is trying to increase participation from non-professional historians, Orlando is trying to bring lesser-known women writers into the spotlight and expand the breadth of women's literary history this way. In this sense, Orlando is democratizing. However, as with the previous case there are several caveats. It is unclear how much of a reach Orlando actually has. At the moment it appears as if most of its subscriptions have been to academic institutions,

although they do not have exact data on this. Orlando's reach is restricted because it is only available through subscription, but despite the feeling of some that Orlando should be a free resource, there are no plans to end the relationship with Cambridge. As well, although it is attempting to increase participation in literary history by engaging lesser-known writers, it stops short at engaging the public (be they academics or non-academics). While the Center for History and New Media is actively trying to get more people to write their own history, Orlando does not let amateurs or other scholars submit content to the site. There are legitimate reasons for this: their technical system would need a major overhaul and there is the issue of how to assure the quality of content in an environment that merges the professional and the layperson. As with any digital project, there is also the issue that what Orlando is creating will never be truly democratic unless it is universally accessible. However, by digitizing this material they are taking steps towards making it more accessible for some. Their interface is also difficult to use, but they are working on simplifying it in a way that will not compromise on quality. Finally, Orlando is not value-free in that it is offering the material in a raw format to be interpreted at will. There is a system built into Orlando that channels and directs the scholars that use it.

Merging of the Arts and Sciences

As with the Center for History and New Media, the terms content producer and programmer are being used to differentiate between the people who work primarily on content (in this case English literary history) and those work primarily on the technical aspects of the project. Although there are 'two cultures' at work on the project, the dividing line between them is porous at times and there is some degree of crossover.

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There are also several people who clearly take on the role of acting as facilitators between the two sides. It is clear, however, that the Orlando Project has always been led by literary scholarship. All interviewees describe a project that was initiated by a desire to do something different with literary scholarship, and this initiative continues to drive the project to this day. That said, technology *is* a vital component of this process. From the beginning, the hope was that Orlando's technology would move scholarship in new directions. Still, technology has always been in the service of literary scholarship, not the other way around. At the same time, the programmers who were enlisted to help with the project were also expected to be teachers, charged with passing on knowledge to literary scholars. Today, almost everyone has some degree of technical knowledge, but there is still a separation between people who do high-end, complicated technical work, and those who do most of the literary work along with some of the easier technical work.

This section begins by outlining how Orlando has always been directed by literary scholarship. It will then move on to describe how, despite this leadership, technology is an integral part of the project, the importance of which was overlooked in the beginning. It will then outline the divisions between the two cultures, but also how a common language has developed. It will end with describing the 'bridge' people who have an understanding of both the arts and the sciences, and operate in both worlds.

Literary Scholarship

The Orlando Project has always been led by the demands of the literary scholarship, with technology seen as being in the service of this scholarship. As one content producer describes: "The idea was always a women's literary history. That was the idea. And when we went electronic the idea simply was that there was this new

medium and we ought to be making use of it" (interview with Orlando content producer 2). Similarly, one of the bridge people says the project co-investigators have always been literary scholars who have always thought the project "should be driven by the content rather than the other way around" (interview with Orlando bridge 2). She says the technology did have limitations and as such would direct what could and could not be done, but generally the feeling was that "technology would be used to achieve the goals of the literary side" (interview with Orlando bridge 2). One content producer says the fact that Orlando was conceived of as a literary project has ultimately been its long-term major strength (interview with Orlando content producer 1).

That said, several interviewees suggest that the technical side of the project is becoming increasingly important. To back up a moment, technological innovation has always been part of Orlando, in that one of the original goals was to experiment with digital technology. But there is increasing interest in how technology could lead the project in different directions. For instance, Orlando is currently experimenting with the visualization of data and developing a prototype tool that would enable the visualization (on a color coded graph) of the connections between writers. One bridge person says that visualization is something that literary scholars are going to increasingly want as they start dealing with larger sets of digitized material (interview with Orlando bridge 1).

The Importance of Technology

All interviewees acknowledge the importance of technology, in that the project is inextricably linked to the digital and the possibilities inherent in computing. Many interviewees acknowledged that at the beginning, although they had grand plans for technology, they lacked knowledge about what was actually needed to make this project

work. The first iteration of their grant proposal even neglected to plan for a systems analyst or encoder. One programmer says when she came into the project it was quickly apparent to her that this was a large oversight. The project needed a systems analyst or it would not be able to function.

> The amount of data being collected, the number of individuals involved, the number of people touching documents, touching data, merging them, manipulating them, keeping track of versions… And this was being - from a software viewpoint - held together with bubble gum and string. (interview with Orlando programmer 2)

Two Cultures

In its current iteration, everyone on Orlando is technically proficient and deals with computing in some manner. In this sense, this is a place of third culture. However, there are different levels of computing skills. As one bridge person describes, there is a difference between markup and coding (interview with Orlando bridge 3). When the content producers take on technical work they are dealing with the markup of the literature (essentially assigning organizational tags). This type of document markup is the simpler aspect of computing at Orlando. However, that said, all interviewees acknowledge that the Orlando markup system is not easy to learn. One content producer says she had "enormous challenges" mastering the technology (interview with Orlando content producer 2). A few interviewees even refer to learning Orlando's markup as the "learning cliff" (interview with Orlando programmer 1 and content producer 4). However, one bridge person says that even though most scholars would define this type of work as technical, in her mind computing and technical work really involves dealing with the back system - creating document type definitions (DTD) and creating schemas (interview with Orlando bridge 2). In Orlando there are two people who deal with this

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sort of high-end technical work: the project coordinator (who maintains the authority list and DTD) and the systems analyst (who maintains the website, database and server, and applies computing and mathematical theories to the system design). This type of programming is clearly more complicated than assigning tags to digital text.

Despite the fact that most people on Orlando have some degree of technical skill, there is still a division between the arts and the sciences. The high-end programmers are not generally interested in the literary aspects of the project. As one programmer says: "I can't say I've ever read any of the documents that are on Orlando. And I don't think I've read any books written by the authors in Orlando unless it was…high school reading" (interview with Orlando programmer 1). Another programmer confirms that the programmers have "no investment into what the content is" (interview with Orlando programmer 2). They are not concerned with what is *in* the system. It does not matter if the content is women's literature, geography or widgets. Their interest is in getting the system to work properly.

The importance of a computer programmer or systems analyst was not recognized in the beginning. The original grant application did not include money for these types of positions. It became quickly apparent, however, that both content producers and programmers were indispensible to the design. The conceptual work in the project – including tagging, linking, theory and the user interface – was the vision of the content producers. However, as one programmer says, it was vital to have a computing scientist involved in the planning, in order to make the entire system work. "They (the content producers) just knew what it ought to be like. But they didn't know the machinery that would be required to cause that to happen" (interview with Orlando programmer 2).

However, despite a slightly rocky beginning where the importance of these positions (and essentially the technology) was overlooked, the project has reached a point where there is not a lot of friction between the technical side and the literary side. Most senior members of the team describe an environment where the programmers and senior content producers have come to understand each other's language. The more junior content producers (research assistants), however, do not deal much with complicated programming. One of the bridge people says the junior members of the team have a "fairly confined technical vocabulary," while those who are involved in planning and design "speak a fairly common language" (interview with Orlando bridge 1). This is not to say that Orlando is completely free of conflict. Several interviewees describe situations where the literary and the technical have clashed. One bridge person says there has been conflict when the literary scholars have not understood how technology works, or realized the technology is not able to do what they imagined. Conversely, conflict also arises when programmers do not understand the goals of literary scholars. She describes the conflict as one that has philosophical roots that need to be overcome: Is technology a means to an end, or an end in itself? Content producers sometimes see technology as a tool. Programmers sometimes see technology as its own entity, and the content as secondary. That said, she believes the project has had success in bringing the two cultures together. This is due in large part to the mix of expertise among the senior people on the team, who come from different backgrounds, including English literature, humanities computing and computing science (interview with Orlando bridge 2).

Bridges

As with the previous case, Orlando also has 'bridge' people working on the project who operate, to different degrees, in both cultures. One content producer says there has always been one designated bridge person whose title has either been "project librarian" or "text based manager" (interview with Orlando content producer 2). They are officially tasked with being the "link between the technical and the literary" (interview with Orlando content producer 2). One bridge person says she was able to occupy this position because she had an understanding of the technology, as well as an understanding of what the literary historians were attempting to accomplish:

> We had a programmer on one side and we had literary scholars on the other side. I think the position that I was in was sort of seen as in the middle because I did a little work on the technical side of things, developing xml files for name authorities and things like that, and did document checking and that sort of thing on the literary side. So I think they (principal investigators) saw that role as somewhat bridging that gap between the two, to get the literary and the computing people to kind of understand each other. (interview with Orlando bridge 2)

Aside from the official bridge position, there are several other people who are unofficially seen as bridges. They occupy (or have occupied) senior and intermediate positions. Most of these people were originally content producers who have taken an interest in the programming. Their programming skills are largely self-taught, although there is one person who is an exception, holding multiple degrees in both computing and English literature.

Work Environment - Hierarchy

Collaboration is seen as integral to the digital humanities, something that sets it apart from other humanities disciplines. Although scholars and researchers do collaborate to some degree in the traditional humanities, very few (if any) digital humanists work

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alone (Bergman 2007; Cohen and Rosenzweig 2005; Siemens 2009). Most interviewees describe Orlando as a collaborative environment, in which everyone is a vital, contributing member to the project. However, many also describe a very distinct hierarchy. This section will begin by examining this discrepancy between those who see it as extremely hierarchical and others who see it as more collaborative.

The hierarchy consists of three different levels. On the top are the senior content producers and one senior bridge person who ultimately determine the direction the project takes. The next rung is occupied by the planning committee, which consists of content producers, programmers and bridge people, who are involved in many aspects of the project including design, content and programming. On the bottom level are the junior content producers, most of whom are research assistants. Some of these content producers write actual entries for the database, while others are involved in mostly fact checking. Most interviewees acknowledge this hierarchy, yet also describe a collaborative environment in which their opinions are valued. For instance, one bridge person says although people occupy very distinct roles, generally when sitting around the table talking about ideas, it is a non-hierarchical environment. "I think that sense (has always been) very much there, that everybody could contribute in their own way. (That contribution is) no less valuable (whether) you're a grad student (or) if you're a researcher with thirty years experience" (interview with Orlando bridge 2).

However, a few interviewees do describe Orlando as extremely and unapologetically hierarchical. For instance, one bridge person describes the work environment as a "military hierarchy," in which the "key intellectual drivers" do not change, but people are rotated through other positions, without much effect on the overall

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project (interview with Orlando bridge 3). The implication is that these other positions are less important, and staff replaceable. Similarly, a content producer describes the project as "incredibly hierarchical," in which "people were disciplined for not respecting that hierarchy" (interview with Orlando content producer 3). She found this "deeply frustrating," in particular on a feminist project, to have a power structure that was "top down" (interview with Orlando content producer 3). She clarifies that in her day-to-day work and during brainstorming sessions with several senior content producers, she did feel like there was collaboration, but ultimately there was a hierarchy that had to be respected.

Despite the fact that there clearly is a hierarchy, one bridge person says they attempt to temper this by treating "so-called service employees, technical staff…like colleagues" (interview with Orlando bridge 1). She says they cannot involve everyone in all the planning meetings and be completely open and democratic in that way. However, she thinks those who are excluded from planning meetings still feel invested in the project because they get credit for what they do. They engage as co-authors and have a sense of participation and intellectual investment in the material.

> I think that because they get credit for having contributed to the text base –
> it's listed on the CV's – they do engage with us as co-authors of the
> material, rather than library gophers or index creators. I think that they do
> have – I say this with some hesitation, because if they have some
> reservations they won't express it to me – but as far as I can tell they have
> a much greater sense of participation in the research and intellectual
> investment in it than traditional RA's in the humanities. So in that way I
> would say it's less hierarchical. (interview with Orlando bridge 1)

She says part of the reason for the lack of hierarchy is that research assistants fact check, and during this process see that more senior content producers do make mistakes. One junior content producer – who describes herself as the "lowest woman on the totem

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pole" – confirmed that as a fact checker, she does feel comfortable critiquing the work of the senior content producers (interview with Orlando content producer 4). But in the same breathe, she adds, this rarely happens – they rarely make mistakes (interview with Orlando content producer 4).

As well, the hierarchy is sometimes disrupted. Even though ultimately it is the literary historians who are in charge of the project, the programmers do have some say over what direction the project will take. The programmers are instrumental in deciding what technology will work and what will not. As one senior content producer says, "the team planning group couldn't function without the actual computer scientist in the group" (interview with Orlando content producer 2).

Challenging the Traditions of English Literature

The creators of Orlando describe the project as one they hope will help transform the study of English literature. They want it to "make a substantive, even transformative difference to the already lively and ongoing critical debate" in English literary history (Brown et al, 2006: 134). They also hope the project will be of interest to a wide range of people, including specialists and non-specialists, leading them to "make the acquaintance of works that they have never read before" (134). In particular, the ultimate goal of the project is to enable researchers to ask questions that either were not possible, or would have been very difficult to answer offline. The hope is this will happen both by encouraging contact with unfamiliar and understudied work, and by enabling researchers to make new connections between authors and subjects in the digital archive. As one bridge person says, "being electronic…allows you to find relationships and do searching that's just not possible in the same kind of way with print material" (interview with

Orlando bridge 2). She says what is unique about the capabilities of Orlando, that separates it from many other document searches, is that it has been analyzed by experts in the field.

> It's more than just a full text search of documents, but it's actual text that has been analyzed intellectually and marked up in certain ways and you can use that markup to find things that are interesting, to see relationships, to follow patterns through documents and so on. I think that's where its real power lies. (interview with Orlando bridge 2)

Another content producer says their search and retrieval system is more valuable and more "intelligent" than Google, again, because experts have analyzed the material and the tagging system is designed to find valuable, scholarly connections. For instance, searches can be done to retrieve information that details a writer's relationship to her publisher, or her connection to a specific place. She says this gives meaning to search results, unlike Google that refines searches based on a link's popularity (interview with Orlando content producer 2). In terms of democratization, Orlando holds onto the notion that there is value in expert opinion; that the strength of its search system is based on the fact that experts have analyzed and 'marked it up'. It is not, as the Center for History and New Media is striving to do in many cases, presenting a 'raw' archive, without narrative, that can be 'read' multiple ways.

Critiques

Despite these intentions, several interviewees express doubt that Orlando will lead to significant changes. This section outlines these concerns, in particular: that people are not using the search capabilities to their fullest, a lack of original research, the loss of close reading, and the potential instability of technical systems.

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i) Search Capabilities

One content producer says when Orlando was conceived it was unique. Up to that point most digital work in the humanities had concentrated on creating electronic editions of texts or making enhanced concordances, essentially taking a print text and making it digital. Orlando was different in that it was trying to produce *new* knowledge. "The hope of Orlando was that it would actually be writing literary history and making literary history possible that had never been made before through using the SGML coding" (interview with Orlando content producer 3). What the designers envisioned however, was not what happened. "No one was actually using it to do something different, to produce knowledge in a new way" (interview with Orlando content producer 3).

It appears that this is still the case. Although they do not have precise data,[46] many interviewees express the opinion that most people are not using Orlando's full search and connection capabilities. One content producer says she herself uses it like a standard reference text.

> When I use Orlando now I use it simply as a glorified *Feminist Companion* – the *Feminist Companion* online. Where I go in and I want to check when Sarah Fielding did this X. And I go into Sarah Fielding and I read it. I don't use the tags…. So if I'm not using them my feeling is, from other people I've talked to, they're not using them either. (interview with Orlando content producer 3)

She says part of the reason the search system is not successful is that the tagging system is very difficult to use, even for someone like herself who knows it inside out.

One of the senior content producers agrees that there are a lot of people who are "simply reading entries and being entirely traditional and not doing much on the linking, searching, sorting – the more…deeper capabilities of the project" (interview with

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[46] They are currently doing a user survey, but at the moment the data is anecdotal.

Orlando content producer 2). However, she insists – based on anecdotal evidence - that there *are* users who are taking advantage of the searching capabilities and being "highly experimental" with their scholarship (interview with Orlando content producer 2).

ii) Original Research

One interviewee expressed concern that Orlando is not moving literary history in new directions because it is not producing much original research. "Orlando might be communicating…research, but it itself is not *doing* that research" (interview with Orlando content producer 3). For the most part they take research that already exists, rewrite it and upload it into their system. She admits that some writers might be getting more space on Orlando than they would in a print text, but in terms of "uncovering unknown women writers," that type of work "is being done elsewhere" (interview with Orlando content producer 3). She sees what they have produced as an "amazing reference guide that (has) allowed me to cross reference in a way no index can manage. But it is still an enhanced indexing feature, not producing literary history" (interview with Orlando content producer 3).

iii) Close Reading

Several of the interviewees also expressed concern that one of the mainstays of their humanities discipline - close reading - could be lost in a digital environment. One bridge person says in the beginning some of the principal investigators assumed that people would read entries from beginning to end, but their tests show that is not how people read information. "[P]eople were very much more going in and looking at bits and pieces here and there, much like they do with a lot of other web resources" (interview

with Orlando bridge 2).[47] She thinks what is lost in this process is close reading. "Because you can dabble and pull out this and pull out that, you may miss a larger context" (interview with Orlando bridge 2). She says you get a different sense of something when you sit and engage in a close reading of a text. One senior content producer echoes these concerns. She is worried that people are becoming accustomed to reading small chunks of information, at the expense of a more full engagement with texts.

> One of the things I worry about is that students get into the habit of dealing entirely with the short 'gobits' and never with the long, connected work. And if we were contributing to that trend I would be very sorry. We're trying not to. We're trying to ensure that what we write about – original texts – it's more like sending somebody to look up the text rather than to think they know all about it already. (interview with Orlando content producer 2)

One content producer says that this is in fact what digitizing text does. Instead of turning people away from a deeper connection with texts, Orlando actually sends people *to* books. "You go and you look for something and you see it's linked to this book and then you go and read that book. So that's (the loss of close reading) not a concern I have" (interview with Orlando content producer 3).

iv) Instability of Computers

Finally, one content producer brings up the larger question of whether Orlando will remain relevant in the long term. Orlando exists purely in a digital form and as such is entirely dependent on technology. She says she is concerned this makes the project vulnerable. If computer technology were to disappear one day, so would Orlando.

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[47] Studies have shown that students do read web resources differently than print resources. In particular, instead of reading a text from beginning to end, web resources are often read in an "F" pattern; the beginning of a web resource is read thoroughly, but soon after the reader scans the first few words of sentences, looking for relevant information (Bauerlein 2008).

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It can't be printed and saved on a library shelf. It can't grow old gracefully as out of date books grow old. So there are major disadvantages, material, practical disadvantages or challenges in this work. I mean, I would jump off the bridge if all of that research, all of that spectacular, wonderful research that should be so useful to some people got (lost if) the servers all died. (interview with Orlando content producer 1)

There is also the issue that computer software generally has a short shelf life and that as computing technology advances, Orlando will have to pay particular attention to updating in order to remain current. Already in its short lifetime the project has upgraded to a different coding system.

Discussion and Analysis – Structuration

i) Democratization

Although the people who work on Orlando do not use the word democratization to describe what they do, in the same way as people at the Center for History and New Media, democracy is implied through their goals, which are to: 1) increase access to this material, 2) create material that will be useful and accessible to a wide group of people, and 3) increase participation in English literary history. It is their hope that this material will reach a wide scope of users, including branching out beyond the boundaries of the academy.

In terms of structuration, Orlando is challenging the norms of English literary history by attempting to democratize information in this fashion. By widening the reach of material to both scholars and non-scholars, Orlando is attempting to increase and broaden the agency of people who are interested in this material. Again, they are doing this by making information more easily accessible, but also by making it more comprehensible through the emphasis on providing contextual information that will help people understand and make sense of the material. Orlando is also challenging the

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accepted structures of literary history by attempting to bring wider attention to writing by lesser-known women. A concerted effort is being made to seek out and digitize information on these women. Also, the search engine has been designed to always bring up information on lesser-known writers (if, of course, the search warrants these connections). This is in stark contrast to most popular search engines, such as Google, that bring up results based on popularity.

In a larger sense, Orlando is also attempting to change literary history by bringing women's writing in English, more generally, to a larger audience. This goal was *avant garde* when the project began in the 1990's. As one senior content producer remarks, reclaiming the texts of women writers may not seem like a radical transformation in the twenty-first century. In fact it may look rather "tame" these days "because women's writing is now fully involved in the systems of our teaching and criticism" (interview with Orlando content producer 1). But what they are attempting needs to be put into historical perspective; when Orlando began in the 1990's it *was* a radical move. The work they were doing filled a gap in the academy.

There are, however, several critiques that cast doubt on whether Orlando truly is democratizing, and in turn whether it is actually challenging or changing the foundations of English literary scholarship. First, although they do not have exact data, it is clear that Orlando does not have as far a reach as they had originally hoped. The majority of subscriptions are to university libraries and it has not spread among non-academics in the way they had envisioned. Part of the reason its reach is restricted is because Orlando is available only through subscription. This decision was made in order to deal with financial issues, but it was also felt an academic publisher would lend credibility to the

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project. Although most interviewees say they would like Orlando to be freely available and open source, these reasons have trumped any such ideals. The second critique is that Orlando does not, in its present form, accept entries, comments, or submission from users. Although it is attempting to increase participation in English literature scholarship by making information more available to interested people who they hope will then use this information to create new work, it is not inviting outside participation in their project. Several interviewees did express the hope that Orlando would at some point be redesigned to accept input from users, but this is not being considered in any real sense at the moment. There are a couple of other issues that restrict the reach of Orlando, including the fact that it is only democratizing for those who have fast, convenient access to the Internet. The interface is also difficult to use, which may be prohibitive to some. Finally, although Orlando is attempting to create a database that does not have an overarching narrative in the way that a typical book might, it is still designed by scholars who have written an underlying theoretical code into the project. There are multiple ways one might interpret the data in Orlando, but it has been analyzed and coded by academics who have made decisions about what connections and details are important. Several interviewees pointed out this hidden theoretical structure, commenting that although users may feel as if they are entering a value-free database, it is in fact highly structured.

ii) Challenging the Traditions of English Literature – Two Cultures – Hierarchies

As with the previous case study, these three areas have been separated out for clarity's sake, but they are not divorced from the central theme of democracy. The Orlando project challenges the structure of traditional literary history in several ways. First, it hopes to bring more scholarly attention to women writers who have traditionally

been underrepresented, by digitizing information about these writers and by creating a search and retrieval system that, unlike Google, will feature them more prominently. In this way it hopes to increase access to these writers. Second, it hopes to enable researchers to ask questions that were either impossible or very difficult to ask when material they were studying was in an offline format. Again, the search and retrieval system allows people to make connections between writers that the designers hope will lead to new scholarship; they hope to make their field more expansive and diverse by first digitizing information about these women writers and then encouraging new scholarship to come from this archive. However, interviewees express concerns that Orlando may not be contributing significantly to a change in scholarship. First, there is a concern that people are not using Orlando's search capabilities in the way they had hoped. Partly, this is because the search and tagging system is difficult to use. Most interviewees say their system is not inherently easy to use, especially in a world where most people are used to the simplicity of Google. Second, concerns were raised about whether Orlando is really changing the study of literary history, in that for the most part it is not involved in original research. Orlando is simply taking research that already exists and putting it in a different format. Concerns were also raised that Orlando may actually be detrimental to English literary scholarship, in that it is contributing to the loss of close reading. Rather than asking students and scholars to engage in a text from beginning to end, it delivers small pieces of information. Finally, concern was also expressed that Orlando, as a fully digital project, is unstable. If the technology stopped working, or ceased to exist, all the knowledge contained in it would disappear. As well, all computing projects run the risk of becoming obsolete as software becomes out of date.

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Orlando also changes the traditional structure of English literature by bringing together the 'two cultures' – in this case experts in English literature and computing science. Again, as with the previous case, this type of merger is closely tied with democracy, in that if people are able to participate in both cultures that make up the digital humanities, they will be able to more fully participate in their professional lives. However, despite the merger and some degree of overlap between the two, there is still a sharp divide. Most prominently, Orlando has always been led by literary scholars. Computing is vital to the project, but it is seen as in the service of the literary. Second, there are people on the project who identify most strongly with one of the two cultures. In particular, there are people who work primarily on the computing system who are not interested in the English literature aspect of the project. However, despite this divide, all the people who work on Orlando are technically competent to some degree, in that they all deal with the markup of text. As well, there are several people who are bridge people, in that they are able to understand the needs and complexities of both cultures. These bridge people are not involved in the highly complex programming of Orlando, but have enough of an understanding of the technology to discuss and understand the technical needs of Orlando. As with the previous case study, these bridge people come closest to what Snow (1971) described as a third culture.

Beyond bridging the two cultures divide, the digital humanities also purports to change the traditional structure of the humanities by emphasizing collaboration over individual work and dissolving hierarchies. Most interviewees describe an environment that is collaborative, and maintain that, on a day-to-day basis, their ideas are heard. However, there is also a very clear hierarchy at play. The more senior employees are

involved in the planning of the project. The more junior employees are not. As well, even though computing is recognized as a vital component of the project, Orlando is led by literary scholars. Technology (and by extension the people who work with technology) is seen, for the most part, as being in the service of the literary. A few interviewees described the hierarchy as rigid and military-like. However, for the most part interviewees were more benevolent, describing a project where everyone has their role, but also a certain amount of latitude in the work that they do.

One of the issues Orlando faces in attempting to dissolve hierarchies is that the university itself is an extremely hierarchical environment that insists on titles and divisions between disciplines (despite some attempts at interdisciplinary studies). This emphasis seeps into the grant competition process that projects like Orlando depend on. Several interviewees mention that despite a lot of talk about dissolving hierarchies, it was always necessary for a PI to have her name attached to grant applications, as the lead. One bridge person says the irony was not lost on the rest of them:

> I used to find it interesting when we were applying for grants, like SSHRC grants or CFI, they would talk about…how one of the goals of this project is to get people from all areas of the academy working together. But then when it came down to the actual application they want CV's from people who had PhDs. The programmer and I used to chuckle about this. We used to joke about the fact that they talk this big talk, but when it comes down to it all they want to know about is the PhDs. (interview with Orlando bridge 2)

Discussion and Analysis –Commodification and Commercialization

Although there are mixed feelings, The Orlando Project is clearly a commodity that is being marketed to libraries, universities and other interested consumers. The decision to publish with Cambridge was made for both financial and academic reasons. The royalties Orlando receives help keep the project operational, and Cambridge's

reputation lends it academic credibility. While some interviewees feel this has enabled the project to stay alive, it has also restricted the project's reach – and as a result its democratizing potential – by reducing the range of people who can access it.

Turning Orlando into a commodity has been a controversial decision from the beginning. Many interviewees express the view that if possible, they would like Orlando to be free. One senior content producer reflects that it has been a very "vexing issue" that Orlando – the digital archive – is being sold, but it was not such an issue with the project's print predecessor – *The Feminist Companion*. They did not have a "crisis" about selling the book; it was accepted that it needed the infrastructure of a recognized publisher. She wonders why there is this crisis with online material and why there should be a difference between selling information offline and online (interview with Orlando content producer 1). However, another interviewee – echoing a sentiment that has been debated since the Internet first came into mass use[48] – says that Orlando could be the "go-to" place for this type of information, if they did not have to charge for it. She says the credibility that would be gained in this regard would trump any that comes from the association with Cambridge (interview with Orlando bridge 1). However, despite this prevailing feeling, there are no plans to change Orlando's funding structure. The

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[48] The idea that information on the Internet should be free stems from the early days of the Internet. For example, writing in the first edition of *Wired* (British version), Davies (1995) writes that the Internet should be more like the Greek agora. "It was an arena for gossip, political haranguing, philosophical inquiry and hard bargaining. Everything from apples to water-clocks was for sale, but talk, or information, was always free" (para 11). The Internet, he predicted "has the potential to transform the whole world into an agora in which, as in ancient Athens, commerce and all sorts of free social interaction would flourish side by side" (para 14). He goes on to say that "free" is not synonymous with "worthless" nor "value" with "price" (para 14). To this day Internet entrepreneurs wrestle with how to make money in this environment, where the expectation remains that information should be free.

consistent message was that Orlando depends on money from Cambridge and giving up this funding source would likely mean the end of the project.

Conclusion

Although there are clearly divisions between the arts and the sciences, the project has been successful in fostering a form of third culture that Snow (1971) imagined. There are bridge people on Orlando who are able to function in both the literary and the computing world. As well, it is a place where there is a degree of cooperation between the two cultures. However, overall there is still a division of work between the arts and the sciences, due largely to the complexity of having to master these different disciplines. There is also a very clear hierarchy in Orlando. Senior literary scholars lead the project and are seen as indispensible, while a series of junior scholars have rotated through other positions and are seen as replaceable. In addition, although the programmers do have some say in the direction of the project, in that they are seen as having valuable technical expertise that must be taken into account, technology is in the service of the literary.

Unlike the previous case, Orlando does not solicit unpaid contributions from outside the team, and as such does not enter the murky terrain of prosumption. However, some content producers did express frustration that they are not being properly compensated for the work they do. Three Principal Investigators are credited as authors on Orlando. The other content producers (including postdoctoral fellows and research assistants) contribute editorial content, but are not officially recognized authors. They are paid a wage and can list Orlando on their CV under work experience. This issue for scholars, however, is that in academia publishing is a form of valuable currency that is essential in order to secure academic promotion and job security in the tenure system.

One content producer expressed frustration that it appears as if she did not publish anything during the years she worked on Orlando. Even though she was consistently creating content for the site, her work on Orlando cannot be formally included in her list of publications.

It is unclear how much of an effect Orlando is having on English literary scholarship. There is certainly potential, in that they have created a sophisticated search and retrieval system, and significant digital archive. However preliminary data shows that people are not using the system in the way they had imagined. Orlando is being used primarily as an online reference system, rather than a tool to create new scholarship. In part this is due to the complexity of using the system. Although there is a desire to create something easier to use, they are struggling to find a balance between simplicity and sophistication. It needs to be user friendly, but still deliver complex, academic results. They are also hindered by the fact that their resources are much more limited than a large-scale commercial operation. Orlando's reach is also limited by the decision to publish with Cambridge, despite the benefits – both financial and academic – this brings. That said, Orlando does have democratic potential in that it is attempting to bring attention to forgotten or underrepresented writing by women, and making writing by women in general more accessible. It is limited, however, in that it is dealing only with women's writing in English and for the most part, this scholarship is limited to writers from Britain. However, as several of the interviewees pointed out, Orlando fills a gap in English literary history. While it might not seem

'radical' in the 21st century, when they began they were taking a chance on something new and filling a gap that needed attention.

The Electronic Arts Game Innovation Lab

Introduction

The campus of the University of Southern California (USC) is awash in towering, columned buildings that bear the names of Hollywood royalty, such as Steven Spielberg and George Lucas. USC attracts students who are aspiring directors, producers and actors, hoping to follow in the footsteps of the university's many famous benefactors. But although film and theatre has been an integral part of the university for decades, in the last few years, it has also become a leader in a relatively new entertainment industry – game design. A few blocks north of main campus, just past the Staples Center, sits an unassuming steel-grey building that looks very different from the rest of campus. On the main floor, film and animation students cluster in the hallway waiting to audition for voice parts on the soundstage. Just past the audition line, and up a set of circular metal stairs (reminiscent of a fire escape) is the Electronic Arts Game Innovation Lab. The lab is funded, as the name suggests, by the largest gaming company in the world. This is the home of the university's Interactive Media Division, the place where faculty and students experiment with game design.

To get into the lab one has to buzz through security and pass through a set of steel doors. At this point, it becomes clear that the building's austere exterior belies what is on the inside. The lab is designed in circles and loops. Work corners are carved out, cave-like, without doors. Artwork is tacked to almost every available surface, some of it framed, most of it taped up for easy removal as designers decide what will stay in a game and what will go. The central feature of the lab is the line of couches that take up one

wall, facing a 12 feet by 12 feet screen that can be raised and lowered. At first glance it appears to be a mini-theatre. In a sense it is, but instead of watching movies, this is where game designers sit, lights dimmed, testing their creations on a screen that allows them to clearly see the nuances of their creations. Down one hallway is another testing room. In this room young people are lined up in front of computers, manipulating joysticks and keyboards. They are being observed through one-way glass. The design of this lab is, for the most part, open concept. It is built this way so that game designers, programmers and artists can operate with some privacy, but still hear each other. The purpose of this design is to promote the free flow of ideas and a cooperative work environment, which, it is hoped, will ultimately enhance creativity.

This lab has several different lives. It is a hub for USC students who are taking interactive media courses. This is where they come to work on their school projects and test their games. This is also a lab that partners with companies like Sesame Street and The Electric Company to create educational games. Finally, this is a place where the humanities – art, history, literature and philosophy – meet gaming. The core researchers at the lab, many of whom also teach at USC, are all involved in this sort of game design. These particular games aim to bring something very different to the gamer's experience – a chance to experience art, literature, history or philosophy in a non traditional manner. These games are also very different from commercial games that are created primarily for entertainment and profit. They are not necessarily profit-driven. Neither do they fall into standard commercial genres: first-person-shooter games like *Quake*, quest games such as *World of Warcraft*, and obstacle-based games such as *Super Mario Brothers*. Instead, they are, as one interviewee describes, trying "to explore the boundaries of games in both

the aesthetic sense and a cultural sense" (interview with Game Lab content producer 1). They want to change people's expectations of what games look like and what constitutes game play. As another interviewee says, they are trying to create games that have something meaningful to say about art and the human condition. He describes them as "exploring games" (interview with Game Lab bridge 1).

The focus of this chapter will be these 'exploring games' that marry the humanities with gaming. There are three games that the lab is currently producing that epitomize this sort of work, which will serve as exemplars throughout this chapter: *Walden, A Game*, based on Henry David Thoreau's book *Walden or Life in the Woods* (1854), *The Cat and the Coup* based on an historical event in Iranian history and *The Night Journey*, based on the art of California artist Bill Viola as well as philosophical and spiritual works from the twelfth and thirteenth century.

As with the other case studies, this chapter will begin by examining whether work at the game lab is democratizing. Is the lab increasing access to, and participation in, the humanities? Although people at the lab do not use the word democratization to describe what they do, they are all primarily concerned with bringing humanities material to wider audiences. However, this democratic leaning is restricted by funding issues and influenced by the lab's relationship with the commercial gaming industry. Second, this chapter will address how the arts and the sciences merge at the lab and whether the two cultures, as Snow (1971) imagined them, merge and overlap into a third. Although there is clearly a division of labor in the lab, between game design (which includes translating the humanities material into a game format) and programming, most people have an understanding of both cultures. As well, because they work in small teams there is an

expectation they will all contribute to every aspect of game design, including the visuals and, to a lesser extent, programming. Third, this chapter will examine the work environment in the lab. Despite an emphasis on fluidity of roles and a dispersal of power, there are still hierarchies. Finally, this chapter will address whether the lab is changing traditional humanities scholarship by translating humanities subjects into game formats. It begins, however, with a description of the lab's employees and a more detailed description of the three games that will serve as exemplars throughout this chapter.

Content Producers, Programmers and Bridges

In the gaming industry work is divided into three distinct types of jobs: game design, art and programming. Game designers conceive and develop the game concept (subject matter) and game mechanics (how it will be played). Artists create the visuals for the game. Programmers are charged with producing the actual coding, or the building blocks of the game. In the first two case studies, a distinction was drawn between content producers and programmers. In this case study there is not such a sharp distinction. The term content producer will be used to identify people who are primarily game designers and/or artists, but I will not be using the term programmer. Instead, the remainder of the interviewees will all be referred to as bridges. These bridges are heavily involved in both programming and game design. As with the previous case studies, the lines between categories are porous. For example, everyone at the lab is able to program, to varying degrees. However, even though they all possess some programming skills, there are clearly people at the lab who are more focused on programming as well as game design, and then people who focus primarily on game design and/or art, leaving the bulk of programming to others. However, the argument will be made that *all* the people at the lab

fall into what Snow (1971) would call third culture. The teams they work on are small, especially when compared to the work environment in the commercial industry, and, as such, most people take on different roles or at least have a very good understanding of the different skills involved in bringing a game from an idea, to the screen.

Humanities Gaming

The three games that will serve as exemplars of what the lab produces are all similar in that humanities subjects are being translated into a game format. Each game, however, is very much the brainchild of the people involved. As such they differ greatly in both game 'mechanics' (how the game is played) and in their visual styles.

Walden, A Game aims to simulate "the experiment in living" that Thoreau undertook at Walden Pond in 1845-47. The game is described as one wherein players:

> [W]alk in his (Thoreau's) virtual footsteps, attend to the tasks of living a self-reliant existence, discover in the beauty of a virtual landscape the ideas and writings of this unique philosopher, and cultivate through the game play their own thoughts and responses to the concepts discovered there. (Walden: A Game 2011)

Using 3D technology, the game replicates Walden Pond and the woods in which Thoreau lived. The game is described as positing "a new genre of play, in which reflection and insight play an important role in the player experience" (Walden: A Game 2011). In one sense the game resembles a typical commercial game, in that the player has to make sure she or he gathers whatever is needed to maintain life, but it differs in that the point of this game is to connect to the philosophical message of Thoreau's work.

The Cat and the Coup is described as a "documentary game" (Brinson and ValaNejad 2011). It is based on the story of Dr. Mohamed Mossadegh, the first democratically elected Prime Minister of Iran. His regime was brought down in 1953 by

a CIA-supported coup. In this game the player experiences these events through the eyes of Mossadegh's cat. As with *Walden: A Game*, the object of this game is not play, in the sense that you are competing or challenging something or someone. Rather, you are uncovering a piece of history, and in the process learning about the events of Mossadegh's life. As the designers describe, the cat helps unveil the story. "As a player (the cat), you coax Mossadegh back through significant events of his life by knocking objects from shelves, scattering his papers, jumping on his lap and scratching him" (Brinson and ValaNejad 2011).

The Night Journey by contrast aims to immerse people in the art of Bill Viola, a video and visual artist from California, while at the same time engaging the player in a spiritual journey wherein they contemplate art, the sublime and the nature of being. As the designers describe:

> Narrative inspiration comes from the lives and writing of great historical figures including: Rumi the 13th century Islamic poet and mystic; Ryokan, the 18th century Zen Buddhist poet; St. John of the Cross, the 16th century Spanish mystic and poet; and Plotinus, the 3rd century philosopher. The interactive design attempts to evoke in the player's mind a sense of the archetypal journey of enlightenment through the "mechanics" of the game experience – i.e. the choices and actions of the player during the game. (The Night Journey 2011)

The point of the game is to encourage spiritual reflection, rather than (as in commercial games) killing your opponent, reaching a destination or gathering 'things'. The goal of *The Night Journey* is to create a meditative space. One of the content producers says there is a need for this kind of experience, which can be evoked through a medium like gaming.

> I think everyone is looking for meditative experiences. I mean, I don't know if you can remember, when you were a kid, wasn't there maybe a place you went to be quiet? I think every kid needs that. Every kid has a

secret place where they go to have silence or be quiet or think things. And media - books, films, possibly games - sometimes provoke that in us. They remind us that we need that place. (interview with Game Lab content producer 1)

Democracy

Nobody at the Game Innovation Lab uses the term democracy to describe his or her work. Nonetheless, the work done here *is* democratizing in the sense that one of their goals is to reach out and draw more people into the humanities material they are dealing with. However, unlike the Center for History and New Media, this lab was not born out of specific democratic ideals. Rather, the impetus for the lab is experimentation. The decisions about the projects they take on are based in large part on how games will push the boundaries of the genre, as well as what can be funded.

i) Access - Increasing Audiences

A common theme in the interviews is that the guiding principle behind their game design is making humanities subjects more accessible. By presenting material in a gaming format they hope to engage people with the material, people who might not have connected with it in other formats (in print or as static visual art). One content producer says gaming is a great way to get young people in particular (who may be more interested in themselves than anything else) to confront questions and ideas that are not necessarily directly about them (interview with Game Lab content producer 1).

All of these games have come about because researchers at the center have a particular interest in the subject matter. As one content producer describes, the *Cat and the Coup* came about when an employee of the lab heard the story and felt that given the United States' current shaky relationship with Iran, this piece of history added some context to the relationship. He speculates on the possibility that many of the problems the

United States has with Iran could have been averted if the decision had not been made 60 years ago to oust the dictator (interview with Game Lab content producer 2). Whether or not this is true, his hope is that this game will be of interest to those who have never heard about this piece of history, as well as those who are familiar with the story and can now experience it through a different format. As one bridge person describes, the hope is this game will be "a really interesting way to examine history in a way that will draw people into the historical context. (Not) just inundating them with facts and stuff, but giving them a reason to want to learn more about the facts" (interview with Game Lab bridge 1). One content producer says they are also hoping that through the game's visuals people will be introduced to Persian art and that the game might "actually garner a re-appreciation for Persian miniatures as a viable narrative device (and) art form" (interview with Game Lab content producer 2). Essentially, *The Cat and the Coup* is designed to bring more attention to a piece of history that is not generally well known; the aim of the designers is to introduce people into this material in a compelling way. Similarly, *Walden* aims to bring the messages of Thoreau's writing to a wider audience, in particular by giving people who may have had difficulty engaging with the book a different way to relate to the material. The designers of *The Night Journey* hope that an interactive environment will be a compelling way to introduce people to the art of Bill Viola and concepts of philosophical enlightenment.

Some of the people at the lab are also trying to increase access to their games by offering them for free. For instance, as one bridge person says, profit is not the motivation behind *The Cat and the Coup*. Rather the game contains "good information" that they imagine could be used as an "educational tool" and as such they do not want to

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charge for it" (interview with Game Lab bridge 2). This person also sees making the game free, as akin to sharing academic work: "I just thought as an attitude, it's nice to give it away, just like I would a paper if I'd written a paper. I see it similar to that kind of attitude" (interview with Game Lab bridge 2). The decision to make it free, however, was not completely altruistic. It was made, in large part, because the producers do not think it would be commercially viable. It does not fit into a commercial game format and it is also very short – 15 to 30 minutes. Most commercial games last anywhere from 30 to 60 hours. They feel this game will struggle enough for an audience without adding the extra obstruction of charging for it. Since their ultimate goal is to have it in the hands of as many people as possible, selling it would be prohibitive.

Similarly, all the people interviewed say they hope a wide audience will play their games. Not everyone at the lab, however, has a utopian vision about the reach the games will have. For instance, one content producer who works on *The Night Journey* says that although they also hope this game will appeal to a wide audience, the reality is that it will probably be played by "people who are fans of Bill Viola or are interested in this kind of experimental art. Or people who are interested in experimental games - gamers who are branching out, looking for interesting experimental game play" (interview with Game Lab content producer 1). Others are more pragmatic and less idealistic about their intended audience, saying that the lab is essentially targeting the same audience as commercial gaming companies. As one bridge person describes, their target audience "in a lot of ways (is) not wholly different than the typical audience that a lot of the big companies target," in that they are creating games that will be principally of interest to teenagers and college students (interview with Game Lab bridge 1).

ii) Funding and Connection with Industry

The people at the lab do have democratic leanings, in that they have altruistic goals of expanding the reach of the humanities material they are dealing with. However, one content producer says in all practicality what they can accomplish is restricted by what can be funded. The lab gets funding from both the public and private sectors. For example, their educational games are often supported in part by the US Department of Education as well as by private companies such as The Electric Company and Sesame Street. Funding and donations from Electronic Arts and USC support the lab itself. As such, the games supported internally by the lab – games that include *Walden*, *The Cat and the Coup* and *Night Journey*[49] – are all indirectly supported by both the university and the private industry (interview with Game Lab content producer 1).

As mentioned, the Game Innovation Lab does not create the kind of games that are typically found in the commercial industry. The prime directive of the center is research and development. As one content producer describes, they often end up with a lot of "beautiful experiments" that would not be viable in a commercial setting, because they do not have the depth that people expect from a commercial game (interview with Game Lab content producer 2). However, despite this focus on research and experimentation, the lab does have many strong ties with the commercial gaming industry. Many of the people who work at the lab have worked in the industry. They also actively cultivate close ties with industry by securing industry funding and partnering on projects. However, even though the center relies heavily on funding from the gaming

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[49] *The Night Journey* began with a grant from the National Endowment for the Arts (a federally funded body), which was followed by a grant from the Annenberg Center for Communications at USC. Since then, however, its funding support comes from the lab.

industry, it is a point of contention whether this tie translates into actual expectations. For instance, one content producer says Electronic Arts' interest in the lab is *not* that it will create marketable games, but rather reflects a larger interest in the future of game design.

> Certainly it's possible that some of the games we make here in the lab could go on to be commercial products. That has happened. But…as with any gifts to an academic institution the gifts are with the idea of expanding and really defining the field as a rigorously studied discipline. I don't think that there's an expected return – we're going to give you money you're going to turn out X number of games that we can turn into products. That really isn't the way that those gifts work. (interview with Game Lab content producer 1)

However, another content producer says that Electronic Arts "probably had certain expectations of what that gift would bring them" (interview with Game Lab content producer 2). For instance, there is likely an expectation that the lab will be training their next set of employees. A bridge person points out, as proof of this unspoken expectation, that classes have even been formed around games that Electronic Arts develops, such as SIMS2. This person also says they have been working closely with Microsoft Games Studio, and had people from Microsoft lecture to their classes. He says it was great to have students get this type of industry perspective in the classroom. However, like other interviewees, he contends their goal at the lab is not necessarily to train students to get jobs, but rather to train creative people who might then be interesting to industry (interview with Game Lab bridge 1).

> We end up creating, or I guess enabling people to truly fulfill their promise of becoming these great creative thinkers and I think that those people end up being really valuable to the industry. We don't look at – `OK what is Electronic Arts looking to hire and can we make exactly that so we can ship people off to them?' That's not really what we're about. (interview with Game Lab bridge 1)

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That said, one content producer says a lot of the students who go through the lab *do* end up getting jobs in the industry, or form their own companies, going on to create games that have big industry support (interview with Game Lab content producer 1).

Essentially, all interviewees confirm that although they do not directly create games for the industry, or create students who are expected to fill places in the industry, the gaming industry is interested in the work at the lab, both in terms of potential new talent and ideas. What became clear through the interviews is that the commercial industry may not expect the lab to pump out games that will take over the market, like Spore or SIMS have, but they do expect the Game Innovation Lab will be a leader in game design experimentation, which will at some point be of interest to the industry. The primary directive of the lab is research and development, however it is clear that the lab actively seeks out funding from industry and creates ties with industry. For example, on one of the days I visited, one of the content producers said he had just finished giving a tour to Warner Brothers (interview with Game Lab content producer 2). Another content producer confirmed that they do approach industry to support their games (interview with Game Lab content producer 1). For instance, SONY was approached (unsuccessfully) about support for *The Night Journey*. Another bridge person summed up the lab's thoughts on this when asked what the response would be if a company wanted to invest millions into their games: "We would definitely do it. And we definitely don't have a problem with it being distributed fully in, not holding back in terms of getting it out there" (interview with Game Lab bridge 1).

Arts and Science

There are three distinct roles in the gaming industry – design, art and programming. The designers and artists are what I have called the content producers. These are the people who deal with the arts and humanities aspects of these games, along with other conceptual and structural issues. The programmers deal primarily with technical aspects, the computer science. As with the other cases, there is a great deal of overlap between the different roles. This section will begin by describing the role of the content producers (game designers and artists) and how their work engages with the humanities. It will then move on to discuss the role of the bridge people at the lab, and how programming is incorporated into their work. Although most people have some knowledge of programming, the bridge people are often predominantly responsible for the technical aspects of the games. Finally, this section will end with a discussion about the role of technology in gaming and the debate over whether technology or ideas take the lead in game development.

i) Content Producers: Designers and Artists

The game designers and the artists deal primarily with the content of games – how the game is going to be played and what it is going to look like. The game designers are usually the people who take the first steps in the process, dealing with the intricacies of game play, or the game 'mechanic'. The artists then come in to the process to deal with the look and feel of the game. As one bridge person puts it, the design work "is more or less how the game is played, what is the player doing (and this is) something independent from, in many ways, how it looks and how it will finally appear" (interview with Game Lab bridge 3).

To step back a moment, most games start their life in the material world; the game is created on paper before anyone even touches a keyboard. Games then move from the board to the screen in the form of a simple two-dimensional prototype in order for the designer(s) to continue to work out the dynamics of game play. This, for example, is how *Walden: A Game* began:

> We did a very simple board game at first. Then we built a very simple two-dimensional game – you move the arrow keys to move around a picture of Thoreau. And what this demonstrated was the dynamics of the game. Not necessarily how the game would look in its final incarnation, but just kind of what is the player doing and what are the dynamics involved. (interview with Game lab bridge 3)

The purpose of the board game and the first screen iteration is to figure out what sorts of decisions the player will have to make in a game, and whether these are interesting interactions. Will they simply be pressing the same button over and over, or will it be more complicated? The visuals are not part of this process, but it is nonetheless an important step in game design. This is the point where the designers decide whether to invest more time and resources:

> A lot of things that make the game might not be in the prototype, but if you can get the decisions and consequences down, even if it's on card format, where you have the consequences and decisions written down as words on cards, it can get a very good idea of what the game is about and whether it's worth making a digital prototype or making a final game. (interview with Game Lab bridge 3)

In this sense, it is the game designers who deal first with the games' subject matter. Designers make decisions about how they are going to present their material, how they expect players to engage with the game, and what they hope players will take from it. The goal of *Walden*: *A Game*, for instance, is to have the player follow in Thoreau's footsteps. The point is to allow people to experience and engage with Thoreau's writing

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in an interactive environment. The hope is that those who may not have gained much from reading the book may be able to engage with the work through a game. There is an element to this game that is based on the core mechanic of many commercial games - gathering more 'stuff'. However, the ultimate goal of this game is experiential; to have people explore the philosophical reflections that Thoreau went through as he experienced the natural world at the pond. As one bridge person describes, "the core of what *Walden* talks about is examining the way you live" (interview with Game Lab bridge 3). (Of course, this is a game that cannot be 'measured', in that one does not gain points for gathering things, or killing things, as in most computer games. It is not possible to measure to what extent a player is absorbing Thoreau's thoughts – there is no 'test' or 'final exam' in this game. It is also a markedly different experience from Thoreau's – as the player is experiencing nature through technology, rather than actually being at the pond.)

Aside from the game design, a lot of work on this game involves recreating the pond, and the natural elements that Thoreau experienced in the woods. A great deal of time and thought is going into the artwork to make it feel as 'authentic' as possible. Essentially, they are attempting to recreate visually, as accurately as possible, what Thoreau describes in print.

By contrast, instead of looking to literature, the bridge person who worked on *The Cat and the Coup* drew on history for his inspiration. When he first began thinking about designing a game he decided he wanted to make a game about war, specifically those who had been "emotionally influenced by the United States going to war" (interview with Game Lab bridge 2). However, he was adamant that he did not want this game to be

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"didactic or obvious" (interview with Game Lab bridge 2). He was looking for an idea that "wasn't just a satire on the government, or just a blatant critique of the same old ideas that would just be a regurgitated art piece" (interview with Game Lab bridge 2). On a separate note, he had also been interested in creating a game about historical figures' pets (Cleopatra's cat, for example). He combined these two interests when he decided to develop a game around the deposed Iranian leader Mossadegh. In designing the game he decided the player would be moving Mossadegh's cat, rather than a human, not simply to be cute, but because it helped with the mission of the game. He felt if the gamer was playing Mossadegh then the obvious step would make the game about alternate versions of history. What if things had been different? What if Mossadegh had made different decisions? However, he was concerned that an "alternate history" game might not be interesting to a player who was not familiar with the historical situation (interview with Game Lab bridge 2). This type of 'what if' scenario might work with a well-known conflict, such as World War Two, but not with this situation. The object, then, of *The Cat and the Coup* is to have the player unlock history and learn from it. The choice in this game is to play or not to play. This bridge person's hope is that the player will connect with the content and come away with an understanding of that period of history.

> It's really sort of asking you, or encouraging you, or making you develop a relationship with this content on some level so you're sort of virtually responsible for what happens. Even if it's inevitable. The real big choice in this game is whether you continue playing it or not. If you play it certain things are going to happen. If you don't they're not going to happen. So it's sort of the most base choice in something like a project (or) even a movie. Do I turn this off or not? (interview with Game Lab bridge 2).

His artistic inspiration (perhaps ironically, given that the lab is part of a school training the next Hollywood-hopefuls) was Iranian films that he characterizes as more

sparse and beautiful than Hollywood films. The artwork in the game is also inspired by Persian artwork from the 1950's. They have drawn on the expertise of the curator of the Islamic Art Collection at the Los Angeles County Museum of Art, who has given the lab complete access to their library, including rare and oversized books. As one content producer says, they put a lot of thought into giving the game a 1950's Iranian look, in order that it not be dismissed as inauthentic by anyone who might want to critique their choice of graphics (interview with Game Lab content producer 2).

The role of the content producers – both designers and artists – is to engage with the subject material and to bring it 'to life' through the game format. Their focus is on translating the material into game play and creating an artistic rendering of the material that both engages the player and is true to the designer's vision of the game.

ii) *Bridges*

There are several people at the center who have considerable programming skills. These people combine their programming skills with their interests in game design – and for this reason, I have characterized them as 'bridges'. One bridge person says he considers programming to be his most marketable talent, and the way that he can primarily be of service at the lab. However, he also considers programming to be an art along with a science, and describes himself as an artist in the way he engages with his work. "I like to think that I have to have an artist or a designer's approach, but a lot of the work I do requires a lot of programming" (interview with Game Lab bridge 3). Essentially, he considers gaming to be an art form and programming is the tool he needs to create his art. He likens the development of his programming skills to an artist learning how to use a paintbrush.

In junior high [I] got into programming in a serious way. That was mainly because – if you want to be a painter you would have to learn how to use a paintbrush. I wanted to create games. I wanted to create interactive elements. That required a bit of knowledge about programming that I wasn't able to find anywhere else. (interview with Game Lab bridge 3)

The reason this bridge person is at the lab and not at a commercial gaming company is because the lab affords him the freedom to experiment rather than being tied to a specific role. He is expected to do research as well as programming. "Partially I'm a technician and a local expert on coding and such. But I'm also a researcher" (interview with Game Lab bridge 3). He says this type of job is very hard to come by in industry. Usually commercial gaming companies divide work rigidly between programming, art and design, and one is relegated to a specific task. Being able to use his programming skills as well as his design skills enables him to feel more complete as an artist – it is important to him to be able to conceive of ideas and then create them.

I love to make things that surprise me, that are in a sense alive. And really the only way to feasibly do that is if I am hands-on with the programming aspect of it. Hiring a programmer would be kind of like getting somebody to hold a paintbrush and you telling them: "Make a circle there and a little more brown there." There's a separation there. I certainly love and use help. I've worked with many good programmers and artists. But after a certain point there's a level of immersion that you need to get by straddling both sides. And that's where I love to be and that's where I'm proud to be. (interview with Game Lab bridge 3)

What this bridge person is describing is something that is very common at this lab. Most people take on several roles. Even though they may work largely in one area, no one is strictly relegated to a particular task. By contrast, in large commercial gaming companies there is usually a division between the three roles. As one bridge person describes, on large teams the earliest division of labor is usually between art and programming "because those are two incredibly important aspects of what we do that

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have unbelievably different skill sets from each other" (interview with Game Lab bridge 1).

However, despite people taking on multiple roles at the lab, it is still clear that generally there are distinct roles in the gaming industry that are divided along the lines of art (content producers) and science (programming). All interviewees acknowledged this separation. One bridge person says he tries to impress upon his students that it is valuable to be fluent in both cultures, to be able to design *and* program. He says design is definitely a skill unto its own, but one must be able to program, at least enough to create a prototype. Having at least a rudimentary knowledge of programming allows a designer to fully understand how games come together and if one is working for a large gaming company where people take on very distinct roles, communicate more clearly with programmers. As well, he emphasizes that the ability to build a prototype is an essential part of game development. One can write down their ideas for a game, but until you play it, you do not really know if it is good or not. As an example, he pretends to pitch a game idea: "I have this idea for this guy who eats mushrooms and he gets taller and he falls down holes and he breaks bricks" (interview with Game Lab bridge 1). Put in words, it does not sound very exciting. On a game console, however, it turns into *Super Mario Brothers*. His point is that you will be a better designer if you can put your ideas into action.

This bridge person says it is rare, if not impossible to find someone who is able to do all three jobs – design, art and programming – well. Although it is helpful for a designer to be able to do some programming and have some input into the game's art,

because of the high level of skill needed to excel in all three jobs, it is unlikely that one person can create a game on his or her own (interview with Game Lab bridge 1).

> Without being too defeatist it seems a rare bird to be able to program seriously, to design and to be able to say draw or animate. To have one person to do all that is pretty amazing. Time commitment and just skill set. (interview with Game Lab bridge 1)

Nevertheless, he says there has been a change in what is valued in gaming. It used to be that programming was the most difficult skill to learn, but now programming has become much easier. These days most of the work at large gaming companies (he estimates 80 percent) goes into art.

Most interviewees say the overlap in roles at their lab is due to two factors. First, many people have skills in more than one area. As one content producer says: "We have technical folks who are artists. We have artists who have technical backgrounds" (interview with Game Lab content producer 1). Second, they work on small teams, which makes it easy for people to switch back and forth between roles. One bridge person says on small teams the "lines are always fuzzy" as to who plays what role (interview with Game Lab bridge 2). For instance, he is working on a team of two in which he is the designer and programmer, and the other team member is more focused on the art and storytelling (how texts are represented, fine tuning the story). However, he says when they meet and collaborate, the lines are not distinctly drawn between the two roles.

In a sense, all of the people at the lab can be described as bridges – able to understand, if not function (to various degrees), as both content producers and programmers. In this case I have labeled people as 'bridges' if they do a considerable amount of work as both designers (or artists) and programmers. However, there are other

people who consider themselves bridge people, in that they are facilitators. As one content producer says:

> To generalize what I do here, I think it's essentially about helping define a process or a pipeline that helps artists create work that the programmers can implement that really just goes towards supporting some idea a game designer has about how to use this technology. So just being that in between (person), to help people communicate with each other. (interview with Game Lab content producer 2)

Another content producer also considers herself a bridge person. She describes herself as the game designer who is essentially a "jack of all trades" (interview with Game Lab content producer 1). The game designer's role, she says, is bridge person through necessity. In order to be an effective designer, you must be fluent in both cultures.

> Basically what you need to be as a game designer is the conduit through which everyone else's work is going so you can hold it together and make it feel like a single piece and that you can create a vision that would allow everybody to do their best work under. (interview with Game Lab content producer 1)

She describes the designer as having to be the "universal translator," able to speak the different languages of everyone on the team (interview with Game Lab content producer 1). She also describes working with technology as akin to learning how to speak its language. She says many creative people do not understand the language, to their detriment; once one understands the language of technology it can open up doors. On the other hand she says most technical people seem to fetishize the technical at the expense of the experience.

> So you have this great misunderstanding on both sides. If you can sort of straddle those - have a strong understanding of both sides - then I think you can make these fascinating interesting experiences that feel very rich and feel very emotional, but they are technological at their base. (interview with Game Lab content producer 1)

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She is adamant, however, that game technology should be all about the experience and that technology is secondary.

iii) *Technology*

Most interviewees acknowledge that technology, and more specifically people's knowledge of technology, has a major role to play in what gets developed at the lab. However, although they acknowledge the necessity of technology, they overwhelmingly agree that technology is simply a tool that should not dictate the path of game design. For instance, one content producer says some people believe that gaming is about technology, but really it is about ideas, even though it is difficult to separate the two.

> The technology itself doesn't matter, no. But the experience matters. And
> the experience is implemented through the technology. For example, does
> the pencil matter? Yes and no. There is obviously a wonderful, tactile
> feeling to different pencils, but basically the ideas are what matters.
> (interview with Game Lab content producer 1)

However, she also says that sometimes they do have to make decisions based on the technology that is available. Several other people also acknowledge that technological limitation does have a role to play in the games that are designed, although they would all prefer, in an ideal situation, to have ideas dictate the direction of games. For instance, one bridge person says the work they have done on *The Night Journey* is largely informed by the technical capabilities of the team. He says not having the resources of a 'Triple A' company has afforded freedom in terms of flexibility, but does restrict them somewhat in terms of what they can produce. Still, he says they try as much as possible to make sure that technology does not dictate the direction of projects:

> We like to try to make sure that technology isn't a major determiner alone
> on how things turn out. Practically of course it certainly does influence a
> lot of decisions, but we try not to make sure it's not the only determinant.
> (interview with Game Lab bridge person 3)

Work Environment: Hierarchies

Collaboration and a "flattening" of hierarchies is seen as a hallmark of what makes the digital humanities different from traditional humanities scholarship (UCLA Center for Digital Humanities 2009; Siemens 2009). Most interviewees describe a work environment that is cooperative, where everyone has a say in how games develop. One content producer says the teams he works on are "pretty flat" in terms of hierarchy where "everybody speaks their mind because we all are expected co-contribute" (interview with Game Lab content producer 2). Another content producer says the collaborative environment is encouraged in part by the physical layout of the lab (interview with Game Lab content producer 1). It is designed to be open concept – if you shout out a question, chances are someone will hear it and answer back. This content producer says this sort of collaborative attitude also applies more generally to the work they do. The emphasis is on shared ideas and problem solving. Others agree that this sort of atmosphere prevails and that generally the lab is a relaxed environment that does not have a lot of prescriptive organization.

All the interviewees also describe an environment where their roles overlap. Part of the reason for this is that they work in teams of three to five people, which allows for fluidity. These teams are very small, compared to the hundreds of people that it takes to produce commercial games like *Spore* or *World of Warcraft*. Several interviewees remarked that there is a need for organization and hierarchies on large teams, but on the small teams, there is generally not a strict division of labor. That said, one content producer, says a lot of thought goes into deciding who should work together on a team. "It isn't just about bringing a generic programmer in with a generic artist. It does not

work that way" (interview with Game Lab content producer 2). All members of the team need to be passionate about the project or it will not work.

However, despite this fluidity, all interviewees say there is still a need for a lead person – generally the designer – to take charge, even if it is a small group. As one bridge person describes: "Generally on very small teams everyone acts as a designer in some aspect or another but usually there's one person who maintains the vision of the project and knows what it should be" (interview with Game Lab bridge 1). Another content producer agrees that on a day-to-day basis there is always a lead designer running the teams, but "there's no sense of being dictatorial or managerial. It's almost always very collaborative" (interview with Game Lab content producer 2). As another bridge person puts it, on small teams there are usually a lot of negotiations, rather than direct orders. "If we have a disagreement we work on it for while until we usually come to a resolution or an agreement" (interview with Game Lab bridge 1).

For example, one content producer who works on *The Night Journey* describes a collaborative process where team members came together to create iteration after iteration of the game. This is done through conversations, rather than direct critiques (interview with Game Lab content producer 1). However, even as she describes this collaborative environment, it is clear that ultimately there is a lead. What is unusual about this game is that the lead is essentially the artist. She notes that this sort of configuration is very different from the commercial industry, where artists usually occupy the bottom rungs of the hierarchy. Commercial gaming companies even have "bibles on style," that dictate precisely how games will look and feel (interview with Game Lab content producer 1).

At other times, the designer's lead role is taken over by the programmer. As one bridge person describes, this happens when the designer does not have an understanding of what the technology can accomplish.

> If what they're asking is not natural, inherent to the technology that they're using, well the programmer is going to speak up and they're going to have the final word because they can't implement it gracefully, or quickly. (interview with Game Lab bridge 3)

As mentioned, most interviewees describe a collaborative, harmonious environment. However, this bridge person does say sometimes artists or designers will ask for something that cannot be done from a programming perspective, or at least would be very difficult. He says this can lead to "nasty arguments" (interview with Game Lab bridge 3)

Looking at the lab as a whole, there is also clearly a hierarchy at play. There is a Director who is charged with overseeing all the operations. However, despite this designation, one content producer says they are actually too small of an operation to warrant hierarchical diagrams. This content producer says the same work pattern that exists in individual games, applies to the lab more broadly. If you pull your weight on a game, or in the lab more generally, you earn the right to speak more broadly to the projects or the operation of the lab as a whole (interview with Game Lab content producer 2).

> Within the game if you do your work then you earn the right to start to talk more broadly about the project. The same is true in the lab. If you put the time in, if you're covering your stuff you can reach out and do more things. (interview with Game Lab content producer 2)

Another bridge person agrees that there is a hierarchy, in that there is a chair of the department, but day-to-day, especially on the project he leads, he tries to make the

"structure feel as flat as possible" (interview with Game Lab bridge 1). This applies to his teaching strategy; he tries to interact with his students as colleagues, rather than as a boss. Although his job is to oversee students' projects, and provide guidance and support, he will step into other jobs when needed. For instance, he is working on a student project now where he has stepped in to do the Flash programming, because there is a very fast turnaround, and he is the person on the team who has the most experience.

Finally, funding structures can also determine hierarchies. If they have a funder who wants a lot of input, the funder has that prerogative. For instance they are collaborating with The Electric Company at the moment. The Electric Company is an educational children's television program run by the American Public Broadcasting Service. It features educational games on its websites. One content producer says "obviously they have to have a lot of input into what that game feels like because…they know if it feels like Electric Company or not. We don't" (interview with Game Lab content producer 1). Although on a day-to-day basis the team works collaboratively, for final decisions they defer to the sponsor.

> It's a small group and in terms of working day by day I think they
> definitely make decision together. They just sit around a table together and
> make decisions together. But when it comes to, for example, what is this
> game going to be, they would definitely defer to the sponsor in that case.
> (interview with Game Lab content producer 1)

Changing Humanities

The people at the lab are not directly involved with humanities departments at the University, which reflects the fact that they are more concerned with advancing game design, than expanding humanities research. All interviewees express hope that the games they are developing will push the boundaries of game design. One bridge person

acknowledges the lab's interest in creating commercial work, but most of the people there are more interested in creating work that would not otherwise get made (interview with Game Lab bridge person 3).

However, they all speak about how they hope the games they develop will give people another way to access the humanities material they are dealing with. In particular, the hope is that those who may not have connected with the material through more traditional book forms, or classroom-learning environments, may be able to connect with the material through gaming – a format they are already familiar with and attracted to. That said, not all humanities material is necessarily gaming material. As one bridge person says, they always ask themselves when making games why they are taking this material and putting it in game form.

> Whenever we're making a project about something important or not important the question is always, why not just say it, why not just write it down, why would you want to make something like this in a different medium? Why would somebody want to play this event? (interview with Game Lab bridge 2)

With *Walden: A Game* and *The Cat and the Coup* the learning aspect of the game is fairly straightforward. With *The Night Journey*, however, which is meant to deal with concepts such as spiritual practice and enlightenment, the goal is more nebulous. One of the content producers says they hope the game will "provoke…questions" and add "a sense of wonder and curiosity and interest…in their lives" (interview with Game Lab content producer 1). As a game designer, she says, this was a very different sort of game to create because it is not about challenge or competition. What a person gets out of the game depends on what they put into it. The player is meant to move through the game and pause for moments of reflection. She compares the game to a piece of poetry: "In that

– what could I hope to get out of an Emily Dickinson poem? Well, actually, many things each different time I come back to it during my life" (interview with Game Lab content producer 1).

This idea of getting something new from the game each time it's played, is essential to her understanding of why people should study the humanities:

> It makes us have a more interesting, fulfilled life. What is the point of just going through motions of survival if I don't have something to think about, something to chew on, something to sort of wonder about? Then I would be dead. I might be alive technically, but I think I would probably be dead. (laughs) Right? Don't we need that? That's why we tell each other stories. That's why we try to communicate what's going on inside our heads to one another. And that process is messy. And that's what makes it so interesting. Because if I could just data dump what's in my head to everyone then that wouldn't be interesting at all. If I could just make a little flash ram of what was in my head and plug it into everybody, that would be so boring. I mean, what is really interesting is the messy process of putting something out there and having someone else interpret it and take it in themselves and change it, you know. So, that's interesting. That's why I would study these kinds of things. (interview with Game Lab content producer 2)

Discussion and Analysis - Structuration

i) Democracy

Although people at the lab do not use the term democracy, their work is democratizing in the sense that they are hoping the material they are dealing with will reach a larger audience. The consistent message from all the interviewees is that they hope by turning books, history or art into games more people will engage with this work and they will, in this way, increase access to the humanities material they are dealing with. What all interviewees say is that gaming is a way to reach people who might be otherwise unreachable. This focus can be seen in terms of structuration; people at the lab are pushing the boundaries of the humanities and attempting to put this material into a

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more accessible form. They talk about what they are doing in ways that emphasize their desire to empower people to learn from these games. Their focus is on putting this material in a format that people can manipulate and guide themselves through. To that end, all interviewees describe their games in terms that put the player at the center. When they create these games they imagine the player first, and try to come up with the best way to bring the player into the game so that she or he can get the most out of it. Essentially, the player is seen as an active participant, not a passive observer. In this sense, the people at the lab are thinking about agency, and how this can be afforded to the player. History, literature and art are not things that must be passively absorbed, rather the player has an active role in constructing his or her own experience.

However, despite this, there are several issues that cast doubt on whether what they are doing is democratizing and changing people's experience with the humanities in a substantial way. Primarily, it is unclear how much of a reach these games will have or if they will have the effect the creators hope. Second, while they may be focused on increasing access to humanities material, they are not focused on increasing participation in the humanities, in terms of content. Although they encourage active participation in their games, they are not, as the Center for History and New Media does, soliciting input from people outside the academy. In this sense, they do not enter the murky territory of prosumption. This avoids any issues that might arise from soliciting free work, but at the same time – within the framework of democratization used in this research – it restricts participation and agency. Finally, although commercialism may not be the driving force, the lab does have a strong tie with industry that permeates the thinking about what direction projects should take.

ii) Changing Humanities ~ Two Cultures ~ Hierarchies

The theme that reoccurred through all the interviews is that the people at the lab hope their humanities games will allow people to engage with this material. The hope is that people who have not engaged with, or even encountered, these subjects in other formats will be able to connect to the material through gaming. In this way, they are attempting to be democratizing by increasing participation in the humanities subjects they are dealing with. The argument is made that these games allow people to learn experientially. For instance, *Walden: A Game* is billed as a place where the player gets to experience what Thoreau experienced. The creators are spending a great deal of time meticulously reading the book, researching the type of wildlife that Thoreau would have seen, and attempting to recreate this in a virtual form. The consistent message from all interviewees is that gaming affords the player power or agency. However, while they may be affording agency to people by offering more choice of how to engage with this material, as mentioned, it is not agency in the sense of allowing people to challenge or change the humanities subjects they are taking on. Rather than giving people another way to freely experience these subjects, they are in fact creating a highly structured environment. For instance, the goal of *The Night Journey* is to create an environment that will provoke reflection. To that end the game designers have created 70 different "reflective areas" (interview with Game Lab content producer 1). During their game testing, one thing they are watching for is whether people are able to find these reflective areas. The emphasis is on experience that is filtered through a game designer, or directed by a game designer, rather than agency in the sense of giving over power to people to evoke their own change. That said, even though these games are being designed by

someone to be played in a certain way, they have found that people will play the games differently than they imagined. In other words, despite how a game is designed, people will (within the limitations of the design) use it the way they see fit.[50] For instance, with *The Night Journey* they imagined that people would play these games by themselves, in their own home, but they found during testing that even when the controllers are taken away from one player and given to another, the original player will sit and watch the game being played, interacting with it in a way that is more akin to television than to a game.

They also do a lot of testing on their games to see how people will react to them. They then take these reactions and redesign their games based on this feedback. For instance, with *The Night Journey*, the testing changed a great deal:

> This core mechanic of reflection that's in the game – originally we thought of it as being passive. You went through the game, then, when you came to places that were full of this sort of reflective potential, it would take over and it would show you this underlying experience. When we tested it (with) people…they hated it. They hated it. I mean they couldn't say enough negative about it. And yet they loved the experience itself. They thought it was beautiful. But they didn't like that it was happening (to them). So we realized we had to make it active. You had to choose to give up control. (interview with Game Lab content producer 1)

What this content producer articulates was common to all interviewees. There is a strong sense that through gaming they are affording people agency – they are, in a sense, turning over the power of discovery to the player.

The digital humanities purports to be changing the way the humanities are practiced by emphasizing collaboration over solitary scholarship. As with the other cases, the interviewees at the lab all emphasize collaboration when asked about the work

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[50] This is a common theme with technology – it is often used in different ways than the inventor(s) imagined (Barney 2004).

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environment. That said, there are divisions in game creation (designers, artists, programmers), and at the lab there are people who excel in different areas. However, they all work in small teams and people have a chance to use different skills, which leads to a lot of overlap in terms of work expectations.

Despite this emphasis on collaboration, it became evident that there is always a leader who is ultimately in charge of the game. This person is usually the game designer, charged with directing the overall concept of the game, which includes game play, artwork and ultimately how this will be translated into programming. That said there are instances when the programming does take the lead, when the technology dictates what can or cannot be done. As well, it is clear that in a game like *The Night Journey*, the artist has a lot of say about the direction and overall feel of the game. But even in this case, the artist's vision is translated and managed through the game designer.

What also became clear over the course of the interviews is that there is a hierarchy at play in the lab. Day-to-day, all interviewees describe an environment where they coexist as equals, however this is not a democratic work environment, in that everyone has an equal say in the direction of projects and the ability to participate in decision-making. There is a Director who is charged with overseeing all of the lab's activities. On individual games, as mentioned, there is also a hierarchy with the game designer taking charge of the game's evolution.

However, in terms of the merging of the two cultures, people at the lab are able to more fully participate in both cultures, than in the other two case studies. Everyone at the lab has programming skills, at least enough to produce rudimentary prototypes of games. Further to this, everyone at the lab has a sophisticated understanding of the complexities

of programming. Although throughout this chapter I have identified several people as 'bridges', who consistently program as well as design or create artwork, in a sense all the people at the game lab are bridges between the two cultures. They all emphasize the necessity of at least having an understanding of the different aspects of game creation and they all can operate in multiple areas, if pressed. In a large gaming company the division between the arts and the sciences would likely be more apparent, but in a small environment there is overlap out of necessity. However, even though there is this sense of mutual understanding, this is not to say that friction has been eradicated. As one bridge person mentioned, there are times when programming and content clash, often when an artist or designer wants something created that would be difficult, if not impossible, to program (interview with Game Lab bridge 3).

Discussion and Analysis – Commodification and Commercialization

The main impetus of the Game Innovation Lab is not to create games that will become best sellers, but rather to push the boundaries of game design. All the games that deal with the humanities came about because the designers involved felt passionately about the material, not because they felt that the games would become commercial. That said the lab does have a strong connection with the gaming industry. Industry funds work at the lab and the lab itself exists thanks to funding from the largest gaming company in the world. The message from most interviewees is that although there is not a direct influence – in that they are not told directly that they must produce work that will be of interest to the commercial gaming world – the gaming industry's interest in the lab does not go unnoticed. The feeling is that industry is investing in the lab for two reasons. First, that the lab will produce future gaming industry employees. Second, that the work that

comes out of the lab will expand the gaming genre and eventually be of interest to the larger commercial industry.

As well, although all interviewees spoke about game research and innovation as the driving force behind the lab – the reason they want to work there – several interviewees made it clear that if they could get commercial funding for their humanities games and turn them into commodities, they would jump at the chance. Major industry funding is not seen as an impediment to creation, or restrictive, rather it is something to be courted. While several interviewees said that there is a sense of creativity that thrives in the lab that is not impeded by any commercial ties, it became very apparent throughout the interviews that they would not turn down a chance to get commercial funding, and that when they do get commercial funding their funders have a lot of say about the direction a project takes.

Conclusion

Gaming is an area that many digital humanists would like to see their field take on in a more concerted way (interviews with Key Informants 1, 2, 3, 4). Many see great potential for the digital humanities in this area – merging gaming with the humanities is a way to expand the reach of the humanities as well as people's experience with this sort of material. People in the Game Innovation Lab, however, even though they are doing exactly what many digital humanists envision, do not call themselves digital humanists. Rather, they see themselves as gamers who have a profound personal interest in the humanities. That is not to say that their work in the humanities lacks rigour. When I visited, I saw and heard evidence of the extensive research that goes into their game design. For instance, the walls in the work corner where *Walden: A Game* is being

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developed are covered with notes and artwork. They are meticulously researching the natural layout of Thoreau's book to make sure that it is portrayed as accurately as possible. In *The Cat and the Coup,* they have drawn on experts from the Los Angeles County Museum of Art to make sure that the artwork in the game accurately reflects Persian culture. The people who are working on *The Night Journey* are taking great care to make sure the artist's vision translates to the screen and that the screen version is true to the work's original form and intent.

However, although they are passionate, dedicated researchers in their chosen areas, none of the interviewees consider themselves experts in the humanities fields they are dealing with. Perhaps this is one of the reasons there is less conflict between the two cultures; these are not people who have spent their professional and academic lives studying the humanities, rather they have spent their lives studying gaming theory and design. The games that people at the center develop come from a personal interest in the subject area, rather than a focused academic interest. In this sense, there is not as much onus put on mastering the humanities in this lab. The focus rather is on game design and on art.

Chapter Eight

Conclusion

In the novel *Posession* (1991), by A. S. Byatt, the main characters – academics Roland Michell and Maud Bailey – are searching for the hidden history of a poet. As they race to uncover the poet's secret past, they seek out rare manuscripts, letters, diaries, and clues left scribbled in the margins of books. The reader follows Michell and Bailey as they travel from library to library and collection to collection. One gets the sense from this book of what it meant to be a scholar of English literary history in pre-Internet days. To track down these artifacts, they have to travel to different libraries and collections, often getting special permission to view the material under severely restricted conditions. This is the sort of quest that takes time, money and persistence.

This is also the kind of scene that is invoked by digital humanists to illuminate the sorts of radical democratic changes that digitization will have – and is having – on the humanities. No longer are researchers beholden to time, place and circumstance. If one wants to study artifacts from ancient Egypt, or the letters of Albert Einstein, all one has to do – or will very shortly – is bring them up on a computer screen. Digitization is increasing the access researchers have to the material they are studying, enabling them to incorporate a wider range of source material into their research. In addition to increasing access, digitization is enabling more participation in the humanities, as people harness the power of Web 2.0 technology to participate in building the human record, or use the interactive tools that digital humanists develop to explore and manipulate digital archives and educational games.

The central question of this research has been whether the digital humanities is leading to the democratization of the humanities. Democracy is a fluid term that means different things to different people. It can be used to refer to a system of elections or voting, but more often it is used to signal more general concepts of freedom and equality (Saward 2003; Mosco and McKercher 2008). As I have argued, despite the many incarnations of the term, there are two key themes that are invoked when it is used: access and participation (Saward 2003). These themes are also prevalent in the most recent thinking surrounding Web 2.0 and other communication technology, much of which is being used by digital humanists (Flew 2008; Hassan 2008). The three case studies in this research all show that the digital humanities is democratizing the humanities, but there are limitations. In this respect, there is progress over earlier digital humanities projects that focused more on digitizing objects and textual analysis. This "first phase," as it has been called (UCLA Digital Humanities Center 2009) was not focused on participation, but rather on access, particularly in terms of imagining that scholars would be able to do better, more varied scholarship if they had access to more digital monographs. The second phase, that humanists are now in, is much more focused on participation, interactivity and experiential encounters with the humanities (Davidson 2008; UCLA Digital Humanities Center).

Of the three case studies in this research, the Center for History and New Media at George Mason University comes closest to the ideals of increasing access and participation in the humanities. People at the center are clearly focused on reaching out beyond the boundaries of history, most significantly by developing tools for people to publish their own history on the web, creating websites with the express purpose of

capturing the voices of 'ordinary' people, their commitment to producing only free resources, and their commitment to involve people from outside the center ('non-experts') in their projects. As Davidson (2008) would characterize, the center is facilitating "citizen historians." Although there is a long tradition of public historians who are committed to including the voices of the marginalized and the working class in the history books, this center goes a step further by developing tools for people to actually use themselves.

However, there are several issues that cast doubt on whether the center is making substantial changes to the traditions of history. As has been noted, technology should not be conflated with democracy (Mosco and McKercher 2008: 49). Simply giving someone access to technology does not mean that it will be used in the way it was intended, or even used at all. It is unclear at this point, exactly who is using the tools the center makes, and how much of a reach they have. But aside from this tangible issue, there are other thornier, less quantifiable questions that could mar what the center is trying to do. First, it is questionable whether making more historical voices available will really flatten hierarchies and upset the authority of professional historians. Closely linked, there is also uncertainty about how to judge the relevance and quality of information that comes from citizen historians. Are all points of view to be treated equally, or is there some value in the voice of the expert? These are very complicated questions, to which there is no definitive answer. As Davidson (2008) points out, there needs to be a balance between expert voices and opening up the humanities to more ideas and points of view. There are clearly some situations where not everyone's opinion is or should be treated as equally important, such as situations in which hate is being spread. However, I argue that in the

context of the work the center is doing – explicitly seeking out the voices of the poor and the marginalized – there is value in making the non-experts heard. Their goals in this regard are honorable, and a sign of progress. They are, to put their work in the context of the theory of structuration, attempting to foster agency. The critique was raised in this research, that the center is not actually fostering true agency because it takes on projects that are fairly 'safe', in that they do not challenge the status quo. While it is true that the projects the center has taken on to date are not necessarily controversial, one can argue that agency is being fostered within these projects and that the tools they create will be used to create challenging projects in the future. What the center is genuinely attempting is to foster agency by assisting people who are not professional historians to add to the historical record. Although they may not be causing a tectonic shift in the discipline of history, they are, bit by bit, taking steps towards change.

The Orlando Project is also trying to advance change, but with more limited results in terms of participation. Orlando is democratizing in the sense that it is attempting to expand the reach of information about women writers. By digitizing biographical information, creating a search engine that is designed to feature information about lesser-known writers and providing contextual material to help researchers digest what they have uncovered, Orlando is making this material more accessible and visible. In this way it is pushing the boundaries and the scope of English literary history.

There are, however, several issues that temper the democratic potential of Orlando. Most prominently, it is clear is that the reach of the project is not what was expected, or hoped. Part of the reason is that Orlando is published by Cambridge. While this lends the project academic credence, and helps out financially, it means Orlando is

only accessible by paid subscription. This decision has been and continues to be, controversial. Most would like Orlando to be free, however the allure of royalties and peer review trump the benefits of an open access project. The other issue that Orlando is struggling with is its search engine. For a generation used to the simplicity of Google, the Orlando search engine is a complex obstacle that is difficult to navigate. In a sense, Orlando belongs to the first phase of the digital humanities. It is a closed system that does not allow for people outside the project to participate by adding content to the system. However, it does belong to the second phase in its emphasis on interactivity and on the fact that the system is designed to have scholars come up with new research and uncover new patterns that were not possible pre-computer.

What Orlando also illustrates, that the other cases do not, is that databases are not value free. The presumption in much of the earlier thinking on computing in the humanities is that databases are, essentially, neutral entities that researchers can manipulate the way they would like (Hockey 1980; Miall 1990a). However, the people interviewed in this research were very clear that databases are not neutral choices. They are driven by the decisions of their creators.

Turning now to the Electronic Arts Game Innovation Lab, this case study is also an example of a digital humanities center that is attempting to be democratizing, in that the lab is creating games that it hopes will introduce humanities material to a wider audience. (There is no data at the moment as to how far its reach is, and this study has not focused on users; the focus, rather, is on intent.) But while the lab may be democratizing in terms of its goals to increase the reach of the humanities, it is not democratizing in the sense of encouraging participation in creating content for the humanities. As with the

other cases, there are several critiques that temper the lab's democratizing potential. Most significantly, the lab may be empowering gamers by giving them another experiential avenue through which to explore this material, but there are limits to this agency. Just as databases have design, anyone playing these games enters an environment that is shaped by game designers. In this sense, the lab is similar to Orlando in that there is a built-in path to these projects that can be manipulated, within limitations. As well, as with the other cases, it is unclear how much of a reach the games will have. What is clear is that the lab has a very strong connection to the commercial gaming industry through funding. This important source of money leads to more intangible connections, as considerations about what the gaming industry would find 'interesting' permeates the thinking at the lab.

What these three cases exemplify is that digital humanists are still concentrating on increasing access to the humanities, but there is much more of an emphasis on participation and interactivity. What became clear is that there is a very strong sense that the products they develop should be free. However, they struggle with how to fund the work they do. Projects that aim to create free products may have a greater reach, but there also has to be a major commitment to finding funding sources. What also became apparent is that deciding to charge for a product is not necessarily the solution. Although Orlando may have the academic credibility that goes with peer review, financially it was evident that Cambridge was not contributing much to their budget.

In all three case studies, concerted efforts are being made to actively change how humanities research is carried out. The Center for History and New Media and Orlando are certainly creating opportunities by creating digital archives, tools and search engines, but at this point it is difficult to say with certainty whether they are having the effect that

their creators imagined and that original, new scholarship is being created at this point. As mentioned, the digitization of documents and artifacts has been a focus of digital humanists for many years, and many – including the people interviewed in this research – believe the focus now needs to turn to creating tools that can create scholarship from this material. There are movements in the broader digital humanities community active in this type of work. For instance, government funding bodies in the US and Canada have specifically set aside money for this sort of research. What these case studies exemplify is that there is a need for more focused attention in this direction if these digital databanks are actually going to be put to use.

The Electronic Arts Game Innovation Lab, compared to the other two cases, is doing something completely different. It changes the structure of history by giving people a new way to engage with this material. The game creates a window into the humanities that is more experiential, rather than didactic. The consistent theme that arose through all the interviews is that gaming is a way to promote agency, by allowing people to experience the humanities in a more immersive way. A player is not told how to play, or how to experience the game, but rather uncovers it on his or her own. But again, the experience is artificial in the sense that it is restricted and directed by the game designers. Although players may have a certain amount of choice, they are ultimately guided along certain pathways.

This research has examined the digital humanities under a political economic lens, in that the emphasis has been on the power relations (Mosco 2009) at play in this field. There has been much hope and hype infused in the digital humanities, but instead of accepting the products digital humanists produce as fully formed entities, without a past,

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this research looks at the work that went into these tools and products, and the people involved. Marx was concerned with peeling back the "onion skin" of products, to show the labor that goes into commodities, labor that is often hidden from consumers. The goal of this research has been to apply this to the digital humanities, looking closely at the type of work that goes into the digital humanities and how power is negotiated in the work environment. The emphasis has been to examine how power is negotiated both inwardly among digital humanists themselves, and outwardly as they negotiate their place in the wider world, both academic and commercial (recognizing of course that at times the two are inextricable).

A political economic approach is tied to ideas of social justice and democracy (Wasko et al. 2011), and as such this research has been concerned with how digital humanists are attempting to open up the humanities and the difficulties they are facing as they try to make the humanities more inclusive. In keeping with this, the main research question has been whether the digital humanities is democratizing the humanities. At its heart, democratization is about power. Digital humanists hope to change the structure of the traditional humanities by dispersing power, making them more inclusive and diverse. What I argue is that digital humanists are taking significant strides in this direction. Although some believe that digital humanists are in a second stage that focuses on interactivity and participation, there is more to be done to conceptualize and actualize how more people – the non-experts – can be drawn into the process. As well as this outward focus on power, as mentioned, throughout this research I have been investigating where the power lies within the digital humanities. Much of the literature about the digital humanities emphasizes that this is a place where people share and collaborate,

creating spaces that are very different from the secret, solitary world of the traditional humanist (see for example Borgman 2009; Katz 2005; Kirschenbaum 2010; Siemens 2009). Recently there has been some preliminary research that looks closely at collaboration between humanists and computer scientists (Siemens 2009; Warwick et al. 2008). This literature focuses, perhaps practically so, on how to facilitate smoother relationships. This dissertation research differs in that it is focused – from a political economic sense – on uncovering where power lies and how power is negotiated, between the two cultures, but also more generally throughout each case. As well, this research examined whether digital humanists feel a connection with the work they do, or, as Braverman (1974) describes, whether there is a disconnect between the conception and execution of labor. Many people interviewed in this research did express a very strong connection to what they are doing and making. This was especially prevalent in the Game Innovation Lab, where they generally work on very small teams and there is a great deal of overlap in roles. What is special about the digital humanities is that it fosters people who, I argue, belong to a third culture, people who straddle the arts and sciences divide. Because they are comfortable in both worlds, in a field like the digital humanities they are able to both conceive of ideas, and bring those ideas to fruition. Often, of course, digital humanists need to work in teams in order to have all the skills needed to execute their projects, but increasingly digital humanists are becoming both skilled humanists and skilled in computing. This finding was not exclusive, however. There were people interviewed, particularly those involved in larger projects, who feel as if they do not have a lot of control over the work they do and in a few cases, did not have an interest in the humanities aspects of their projects. However, it is evident that much effort is being made

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by Directors and senior staff to cultivate an environment where there is not a disconnect between idea and execution.

Two Cultures ~ Hierarchies and Collaboration

This research also draws on political economy in that it pays attention to history. The digital humanities has a long pedigree, that stretches back over half a century, and even further back when one considers that the rift between the arts and the sciences stretches back centuries. The digital humanities cannot be treated as something that exists in the bubble of the present, but is deeply infused with traditions that divide the arts from the sciences. What has been detailed throughout this research is how digital humanists are struggling with overcoming the divide.

The first humanists to enlist the help of computers were using large, noisy mainframes that filled rooms. Researchers had to book time on these machines – often months in advance. They would show up at the appointed time, on the appointed date with boxes full of punch cards that would be fed, by a programmer, who was the only one allowed to touch the computer, into the mainframe. There was a clear division of work between those who operated the computers, and those who were thinking about the humanities. As computers evolved and became, smaller, cheaper and moved onto office desks, some humanists began rethinking their relationships with these machines. Today computers are, of course, well established in almost every academic's tool kit. We write on computers, send emails, search libraries, etc. There are very few academics that are not skilled in this way. But in terms of being able to use the computer as an actual tool, enlisted to do the work of archiving and searching, there are a variety of skill levels among digital humanists. There are some who have a high level of programming skills, as

well as PhDs in a humanities discipline. These are people who embody what Snow imagined as the third culture. (Most of these digital humanists are self-taught programmers.) These people, however, are rare. The vast majority of digital humanists are experts in a humanities discipline first, and programmers second, usually engaged in less intense programming and computer work. What became clear throughout this research, however, is that there was a great deal of collaboration between the two cultures, as humanists and computer scientists came together. Another theme that emerged over all three case studies is that there is a very clear distinction between high end and low-end programming. Everyone interviewed in this research is able to do at least some low-end programming such as markup, but only a few are able to do the high-end programming, as well as participate in academic discussions around the humanities aspects of projects.

As mentioned, the digital humanist who functions fully in both cultures is a rare bird. This makes sense as it takes a considerable amount of time to become proficient in both the humanities and computer science. For the digital humanists who are dealing with archives, it is clear that the focus is shifting from building archives to searching these archives and finding ways to mine the archives for new patterns and data. As this shift is made, there will be a need to employ more people who have high-level programming skills. It is possible that the divide between the two cultures will become even more acute. Even now, there are computing scientists working on these projects who are indispensable in terms of their abilities to program, who have no interest in the humanities.

Interestingly, of the three cases, there was the least amount of division between the two cultures in the Game Innovation Lab. I postulate that this is because people at the lab do not come from humanities backgrounds, but rather consider themselves gamers first and foremost. They come into these projects with a more holistic outlook, rather than seeing their projects as something that is a merger of different disciplines. It seemed more of a given that everyone would know something about programming. Further to this, there is a sense that programming is not alien, special, or 'new', but rather something that has always been part of what they do. There are people who embody third culture in all three cases, and to some extent there is a feeling of cooperation between the two cultures in all three cases, but in terms of facilitating a place of third culture, a democratic workplace in which people are able to participate in both cultures that go into the digital humanities, the lab fosters this to the greatest degree.

All three cases go some way to creating collaborative work environments. Certainly, many people expressed that they like working where they do and feel as if they have some degree of control and investment in their work. But despite these attempts, they all fall short of creating truly non-hierarchal work environments. It is very clear in all three cases, that despite attempts at removing any sense of power and creating opportunities for collaboration, there are layers of power. Individual projects usually have clear leaders, and on top of this, Directors are in charge of different divisions, and/or one Director is in charge of the entire operation. All the people working in a team have the opportunity to participate in the direction of the project, but ultimately project leaders or Directors make the final decisions. Looking at power in terms of the two cultures, the

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humanities generally dictate the direction projects take, but there are moments of resistance where programmers take the lead.

In academia, publishing is akin to currency. One gets tenure and promotion based, in part, on one's research publications. The three principal Orlando investigators are listed as authors. The other contributors are not. One content producer in particular expressed frustration that during her postdoctoral experience with the project it appears as if she did not publish anything, even though she was continuously producing scholarly work that appears in the archive (interview with Orlando content producer 3). This is a situation that, on one hand has to do with how power is dispersed in this project; any efforts to create a non-hierarchical workplace clearly break down in the face of a reward system that places some above others. This situation with authorship, however, also speaks to digital projects more generally. Throughout this research it became clear that computer-based projects are not as respected as more traditional monographs. All the people involved in these sorts of projects feel as if they are taking some sort of risk. They are stepping into new territory that is not currently accepted or respected in academia, especially when it comes to tenure and promotion considerations. As such, they all feel as if they are in some way charting unknown territory.

Part of this feeling comes from the fact that they are part of the current wave of Web 2.0 thinking that is pervasive in our present Internet culture. Web 2.0 of course, emphasizes interactivity and easy-to-use software applications, but beyond this, the general zeitgeist is that information on the Internet should be free. Similarly, there is a pervasive feeling throughout the digital humanities that the tools and the archives digital humanists create should be free. What became clear in all three cases is that creating free

material is much more honorable than creating a commodity. However, the reality remains that in order to create a digital project there needs to be some source of funding. As well, in the current funding climate, it is easier to secure funding to create new projects than it is to maintain projects. Digital projects, as entities that are never, in a sense, 'finished' and will need updating as technology changes, need to be concerned with securing ongoing funding.

Digital humanities projects that want to create free material need to be prepared, as exemplified through the first two cases, to spend a great deal of time and energy tracking down sources of funding. There are also other considerations; in particular, if one is lucky enough to be granted funding, there are responsibilities – deliverables – to granting agencies that must be met. Similarly, any reliance on commercial funding also brings with it expectations. Even if these expectations are not overt in terms of delivering a 'product', considerations about the sorts of products commercial funders produce, and how the digital humanities fits into this, permeate the daily decision-making.

Despite the day-to-day realities of funding and the realities of working out the complicated power relations on projects, the digital humanities is still imbued with sublime promise. From its introduction in the 1950's and 60's, computing was seen as a way to change the traditions of history, enabling scholars to mine vast amounts of data and create new work. The integration of computers has been a slow process and despite being in a transition from one phase to another (Humanities 1.0 to 2.0), we are still, I argue, in the early days of the digital humanities where people are imagining, planning and starting to create. Looking back, to compare, in the early days of electricity there were similar grand hopes that this 'new' technology would bring about startling change,

particularly peace, prosperity, and an end to crime as electric lights cast light into the shadows of cities. Of course, electricity did not have this sort of dramatic effect. However, it has become seemingly inextricably ingrained in our lives, its importance hardly felt until it is not there (Nye 1990; 1994; Mosco 2004). As with most incarnations of the technological and digital sublime, it is likely that the effect of the digital humanities will not be a dramatic opening of the curtains, as some are imagining. (As has been noted (Borgman 2009; Katz 2005; McGann 2008) humanists are slow to pick up digital tools.) Rather, it is when the digital humanities also fades into the woodwork, that its importance will be solidified. In a sense, this is already beginning. Increasingly scholars are relying on digital archives. Students of the 21st century are more likely to go online than to an actual bookshelf. When library systems are down, or Internet connections are cut, it is suddenly apparent how reliant we are on them. However, we are still in very early days of using computers in the humanities as tools to actually manipulate data and create new scholarship. Digital humanists who are creating immersive environments are also still experimenting.

There is certainly a lot of interest in the digital humanities: new academic journals are appearing, there is a well-used international listserv that is getting busier every day, joint government bodies are creating new funding opportunities, international conferences are bursting at the seams. Still, the digital humanities is a marginalized field, fighting for attention and describing its potential with high hopes. However, it is now, when things are shifting and unclear, and disciplinary boundaries are unsettled, that digital humanists need to be thinking about the sorts of relationships and collaborations they want to build in these disciplines. What sorts of environments do they want to

create? Although digital humanists are still in the beginning stages of creating tools to make sense of the vast digital repositories that are available, they have already gone some way to making significant changes in how we study human culture. The amount of material that is now at our fingertips, easily accessible by anyone with an Internet connection is astounding. Some of this is being harnessed, but there are many opportunities as yet unexplored.

Although there are still issues to be worked out in terms of extending their reach, and in terms of securing funding that will enable them to continue being inventive, everyone I spoke to is clearly dedicated and passionate about the work they do. Even those who feel as if they do not have a lot of power, those who are not going to be part of these projects long-term and those who had already moved on, had thought deeply about what they were, or had been, doing. Indeed, it was from those who do not have as secure, or as powerful a position on these teams that some of the most insightful critiques came.

Conclusion

As the digital humanities continue to evolve there will be ample opportunities for future research. This particular research was limited to three cases, but there is a plethora of other centers, labs, and digital humanists working in traditional humanities departments worthy of analysis. In particular there are opportunities to study in more detail the move towards the visualization of data, and how digital humanists, such as Lev Manovich, are starting to experiment with new ways of presenting and capturing data (Franklin and Rodriguez'G 2008). As well, as technology evolves, there will likely be more digital humanists experimenting with immersive environments. In terms of geography, this research was restricted to North America in recognition of the close ties

digital humanists in this area share, but there are interesting digital humanities endeavors in many parts of the world, most notably in the United Kingdom and Sweden, but more globally as well. This research also focused on how the digital humanities is changing the humanities. It would be interesting and useful to focus on whether the digital humanities is changing computer science in a substantial way. This research touched briefly on the notion that some computer scientists find this type of work interesting and very different from the typical systems analysis that they might normally find themselves engaged with. A more systematic study that focused on how the digital humanities might be changing computer science would be beneficial.

As Borgman (2009) notes, there have been very few studies of the digital humanities from social scientists, and there is a need for analysis into how digital humanists work and negotiate their fields. By looking at whether the digital humanities is democratizing the humanities, this research takes a step toward filling a gap. In a sense, the digital humanities is democratizing. By encouraging participation, interactivity, and looking to new ways of engaging people, digital humanists are pushing the boundaries of their disciplines. There are certainly limitations on what they have been able to accomplish, but they are reaching out beyond academia, seeking to make their disciplines more inclusive and representative, as well as creating more opportunities for scholars to expand the scope of their research.

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APPENDIX A

Methodology

Case Studies

The three cases in this study were chosen because they are exemplars of different approaches to the digital humanities. In order to find these three cases an environmental scan was conducted of all the digital humanities centers, projects and programs that exist in North America. This scan included both commercial and non-commercial ventures. From this scan it was determined that this research would focus on digital humanities projects and/or centers that are connected to universities, since the majority of digital humanities projects are connected to academia in some way. As well, these sorts of ventures face similar sorts of questions in terms of securing funding and determining the direction of their research. The three particular cases were chosen after conducting a survey of the literature that exists on the digital humanities, attending a Canadian digital humanities conference and informal conversation with digital humanists across North America. The three were chosen because they are recognized as leaders in the field. As mentioned in the body of this research, the first case, the Center for History and New Media was chosen because it represents a digital humanities center that is creating purely open-source material and relies on government and philanthropic funding. The Orlando Project was chosen as the second case, as it exemplifies digital humanities projects that are seeking some form of commercial funding. The Electronic Arts Game Innovation Lab was chosen as an example of where many digital humanists see their field heading – into the arena of game design. It is also an example of a digital humanities lab that has a strong connection to industry.

Participants

Once the three cases were chosen I approached the Directors of each project to explain the purpose of my research. Once each Director had given me permission to visit their center and interview employees I began contacting employees. All interviewees were contacted first by email. The template is as follows:

> Dear _____,
>
> My name is Andrea Hunter. I'm a PhD candidate in Sociology at Queen's University in Kingston, Ontario, Canada. I'm writing to introduce myself, because I'm hoping to interview you about your role with _____.
>
> I'm writing a dissertation on the digital humanities. My main research question has to do with whether the digital humanities is leading to the democratization of the humanities both in terms of who contributes to the field and who has access. I'm also interested in the dynamics that exist between the different participants in digital humanities projects – who takes on what roles, etc.
>
> In particular, I'd like to talk to you about your role as _____. The interview would not take longer than an hour. I've attached a sheet that goes over the sorts of questions I'd like to ask. There may be some questions that you don't want to answer or don't apply to you. Of course, if you agree to an interview you're under no obligation to answer anything you don't want to. Also, the interview will be anonymous – I will not use your name or any identifying information.
>
> I'm based out of Kingston, but am planning on coming to _____ during these times: _____. I'm hoping we can schedule a time to talk during that week at a time and place that is convenient for you.
>
> If there are any more details I can give you, please let me know. I've also attached my CV, to give you a better idea of who I am.
>
> Thanks very much for your time. Hope to talk to you soon,
> Andrea

If they responded positively to the request, I arranged a time and place to meet.

Interviewees were given the choice of when and where they would like to meet.

Interviews were conducted as per the following times, dates and places:

Center for History and New Media

Interviewee	Date	Time	Place
Programmer 1	March 23/10	12:00pm	Center for History and New Media
Programmer 2	March 22/10	10:00am	Center for History and New Media
Programmer 3	March 23/10	1:00pm	Center for History and New Media
Programmer 4	March 22/10	1:00pm	Center for History and New Media
Programmer 5	March 22/10	3:00pm	Center for History and New Media
Programmer 6	March 21/10	4:00pm	Center for History and New Media
Programmer 7	March 21/10	3:00pm	Center for History and New Media
Programmer 8	March 23/10	4:00pm	Center for History and New Media
Content Producer 1	March 22/10	11:00am	Center for History and New Media
Content Producer 2	March 21/10	1:30pm	Center for History and New Media
Content Producer 3	March 22/10	9:00am	Center for History and New Media
Content Producer 4	March 21/10	11:00am	Center for History and New Media
Director 1	March 23/10	10:00am	Center for History and New Media
Director 2	March 21/10	9:00am	Center for History and New Media
Director 3	March 22/10	11:00am	Center for History and New Media
Director 4	March 22/10	2:00pm	Center for History and New Media
Director 5	March 21/10	12:00pm	Center for History and New Media

The Orlando Project

Interviewee	Date	Time	Place
Bridge 1	May 31/10	12:00pm	Concordia University, Montreal
Bridge 2	October 14/09	11:00am	University of Alberta
Bridge 3	October 14/09	9:00am	University of Alberta
Content Producer 1	October 14/09	12:00pm	University of Alberta
Content Producer 2	October 14/09	2:00pm	University of Alberta
Content Producer 3	October 15/09	1:00pm	University of Alberta
Content Producer 4	October 15/09	11:00am	University of Alberta
Programmer 1	October 15/09	10:00am	University of Alberta
Programmer 2	October 13/09	4:00pm	University of Alberta

The Electronic Arts Game Innovation Lab

Interviewee	Date	Time	Place
Bridge 1	August 3/10	2:00pm	Electronic Arts Game Innovation Lab
Bridge 2	August 4/10	11:00am	Electronic Arts Game Innovation Lab
Bridge 3	August 3/10	4:00pm	Electronic Arts Game Innovation Lab
Content Producer1	August 3/10	10:00am	Electronic Arts Game Innovation Lab
Content Producer 2	August 3/10	12:00pm	Electronic Arts Game Innovation Lab

The interviews were semi-structured. A list of themes/sample questions is

attached as Appendix B. However, as each interview progressed themes that the

interviewees brought up were followed. All the interviews were recorded on a digital recorder. These interviews were then transcribed. The digital recordings have been destroyed. The transcribed interviews have been kept in a locked cabinet and on a locked computer. Identifying information is kept separate from the transcribed interviews.

The interviews with Key Informants followed a similar process. After a survey of the literature in the field, I contacted several people who were leaders in the digital humanities. Names of other Key Informants were then gathered. Key informants were contacted first by email. The template is as follows:

Dear _____

My name is Andrea Hunter. I'm a PhD candidate in sociology at Queen's University in Kingston, Ontario. I'm contacting you because I would like to interview you as part of my PhD research. I'm writing a thesis that's looking at whether the digital humanities is democratizing the humanities, in terms of opening up access and participation. Along with this, however, I'm interested in how people from computer science and different humanities disciplines work together in the digital humanities. I'm also interested in how projects come together; what influences their genesis as well as their completion.

I'm going to be looking at three case studies in this research. However, I'm also going to be talking to different people who are not involved in these cases, in order to get a more broad perspective of what sort of work is going on in this field.

I've attached, as a Word document, the themes I'd like to talk to you about. These are not questions that are fixed in stone, but rather points that I'd like to discuss. If you're willing, I'd like to arrange an interview as soon as possible. This can be done over the phone or in person. I don't anticipate that the interview would take longer than an hour.

Thanks for your time. I hope to hear from you soon.

Andrea Hunter

If they responded positively I arranged to record a telephone interview or an in-person interview. Interviews were recorded on a digital recorder and transcribed. The

digital recording has been destroyed. The transcripts have been kept in a locked filing

cabinet and on a locked computer.

Interview Schedule for Key Informants:

Interviewee	Date	Time	Place
Key Informant 1	May 25, 2009	11:00am	Carleton University, Ottawa
Key Informant 2	March 24, 2010	11:00am	Washington, DC
Key Informant 3	June 29, 2009	10:00am	Telephone
Key Informant 4	June 29, 2009	1:00pm	Telephone

Sample Questionnaire: Case Study Participants

1. Project Design and Interaction

What is the intent of this project? (What is it supposed to do?)

What different disciplines does it bring together?

How does one interact with this project? (e.g. reading off a screen, full body immersion)

How does this interaction affect the experience the user is having?

2. Culture of Creation ~ Two Cultures/Third Culture

What is your role in this project?

Who else is involved in this project? What are their roles?

Who makes decisions about creation?

Who makes decisions about programming?

How do programmers and creators mix or overlap? Are they the same person or different

people?

What sort of skills (technical/research/academic/artistic) do people on the team have?

What hierarchies exist in the project, if there are any?

    (Who is the leader?)

    (What role does this leader take on?)

How does the computer science mix with the humanities aspect of this project?

    (Does one take precedence?)

    (What sort of conflicts arise?)

    (What sort of common ground?)

3. Influence on Humanities Research

Why was this project created?

What does this project make possible that wasn't possible before in humanities research?

How is this affecting/changing humanities research?

How is it affecting/changing perceptions of/reliance on speed and distance in the humanities?

What role does the technology take on that the human was responsible for before?

    (i.e. Does it make links? Find patterns?)

What is lost, or made irrelevant, by this project – either explicitly or implicitly?

    (i.e. Is speed or quantity valued over close reading?)

4. Technological Influences

What does technology offer to this project?

    (What does it make possible?)

What does it limit?

    (What are you unable to do because the technology does not exist?)

    (Or because members of your team aren't trained in the technology that is available?)

    (What technology would be useful, that you can't afford?)

5. Democracy ~ Intended Users/Intended Use

Who is this project intended for?

    (Who will use it? Who has been using it?)

How will it be distributed?

How will people access it?

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What costs are associated with it for the user?

Who will benefit from this?

Who is excluded from using this technology?

What efforts are being made to expand the reach of this technology? Or limit its reach?

What do you think of using the term "democratization" to describe the digital humanities?

6. Funding

How is the project funded?

What limitations are put on the funding that has been received?

> (Is funding you have received earmarked for certain purposes?)

> (Are there certain mandates that need to be fulfilled in order for funding to continue?)

> (Did the project have to be modified to fit a funding agency's requirements?)

How are decisions made about funding choices?

> (What is considered when deciding whom to approach for funding?)

What sort of limitations has a lack of funding put on projects, if any?

7. Other influences

Other than money and technology, what else factors into how the project is developed?

> (What, if any, sorts of pressures exist from the university to produce particular research?)

> (What pressures exist from staff to pursue a particular research vein?)

8. The Landscape of Digital Humanities

How do you see the digital humanities influencing the humanities?

What do you see as the most important work in the digital humanities?

What sort of unity or dissonance do you see in the digital humanities?

Where do you see the field of digital humanities going?

(What is the future of the digital humanities?)

APPENDIX C

Sample Questionnaire: Key Informants

1. How do you define the digital humanities?

 (What disciplines do the digital humanities encompass?)

2. How do you see the digital humanities influencing and/or changing (if at all) the humanities?

 (How do the digital humanities influence/change how a person interacts with what

 they are studying?)

3. What sort of work do you do in the digital humanities?

4. What factors have influenced the type of work you do?

5. What sort of pressures do digital humanists face when undertaking their work?

 (Pressures from universities expecting certain research?)

 (Pressures to market their work?)

 (Internal pressures from researchers pushing a certain vein of research?)

6. How does funding influence the digital humanities?

7. What do you see as the most important work in the digital humanities?

8. What sort of unity or dissonance do you see in the digital humanities?

9. How do you see the two cultures (science and humanities) coming together in the digital humanities?

10. What is the future of the digital humanities?

May 26, 2009

Andrea L. Hunter
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GREB Ref # GSOC-062-09
Title: "The Third Culture: Digital Humanities and the Sociology of Knowledge, Technology and Culture"

Dear Andrea Hunter:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled **"The Third Culture: Digital Humanities and the Sociology of Knowledge, Technology and Culture"** for ethical compliance with the Tri-Council Guidelines (TCPS) and Queen's ethics policies. In accordance with the Tri-Council Guidelines (article D.1.6) and Senate Terms of Reference (article G), your project has been cleared for one year. At the end of each year, the GREB will ask if your project has been completed and if not, what changes have occurred or will occur in the next year.

You are reminded of your obligation to advise the GREB, with a copy to your unit REB, of any adverse event(s) that occur during this one year period (details available on webpage www.queensu.ca/vpr/greb/addforms.htm#Adverse). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that any adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example you must report changes in study procedures or implementations of new aspects into the study procedures on the Ethics Change Form that can be found at http://www.queensu.ca/vpr/greb/addforms.htm#Change. These changes must be sent to Linda Frid at the Office of Research Services or FRIDL@queensu.ca prior to implementation. Ms. Frid will forward your request for protocol changes to the appropriate GREB reviewers and / or the GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Yours sincerely,

Joan Stevenson, PhD
Professor and Chair
General Research Ethics Board

JS/lf

copies: Chair, Unit REB: Steve Baron
         Faculty Supervisor: Vincent Mosco
         Unit REB Admin: Joan Westenhaefer