Digital Humanities: Applications from the Creation of Technology

The field of Humanities is slow to change, especially the Historical profession. Digital Humanities offer historians and other humanities scholars improvement in many areas; I will focus on three.

1. Freedom of information, ability to share and collaborate on research in open and unrestricted ways

2. Ability to find more sources

3. Ability to allow a wide range of interested individuals to participate

 Not only can technology be used to create humanities scholarship, but also the very way that technology itself is created and distributed can be an inspiration for how to influence the humanities research process.

1. Two philosophies of software development are the free-software and open-source movements, wherein the underlying code of applications is freely accessible. Our modern lifestyle exists because of free-software

and open-source ideals and the software built within that framework. The humanities can, and should, learn from this community ethos.

2. The World Wide Web offers a staggering amount of primary and secondary sources in the form of online archives, journal repositories, websites and forums.

3. One open-source mantra states that the more people look at the code the quicker problems will be recognized and fixed. History, for example, is the effect of many people's choices; it's absurd to think that one person can accurately interpret and analyze the past by oneself. Digital Humanities present German scholars an opportunity to create research from multiple authors and disciplines in order to provide more accurate and available knowledge.

My dissertation, "Nazi Tunnels: Underground Factory Dispersal Projects and Forced Labor Camps at Porta-Westfalica," uses a website and online archive to provide an open and free repository for my writing and sources, and uses crowdsourcing software to let students transcribe and translate primary sources.

New technology poses the question: <mark>SLIDE 3</mark>

How will this new technology improve the productivity and quality of work and provide new understanding to the profession?

For example, one might ask: <mark>SLIDE 4</mark>

Do computers change the way historians understand history, or do they just make it easier to type, disseminate, and collaborate research—things historians already do? What new methods and new understandings have come about because of the computer and the Internet?

<mark>SLIDE 5</mark> The invention and use of the telescope changed how we as humans look at the sky and our place in the universe. Similarly, the microscope changed how humans understand the body and physical world around us. Less obvious, is how technology and new media affect fields in the humanities. What do computers and digitization provide to historical research? Does it enhance or provide a different experience, or way to research that wasn't there before? How can new technology expand our understanding of history, literature, language, religion, philosophy, etc.? Computers are often simply

used as expensive typewriters, and the web as fancy paper. In order to better utilize new technologies and new mediums in historical research, they should change the way we think of history by providing a different way to look at the past.

<mark>SLIDE 6</mark> In looking at other professions, we may gain insights on how to better use technology. Architects, for example, use computers not only to show pictures of their buildings as a two-dimensional blue print, but to design and create three-dimensions and multiple levels of abstraction for understanding and developing a building.[1] Architects use the technology of the computer to enhance and understand their plans in new and different ways. Contemporary historical scholarship, in linear sequential text, is like an architect only working in paper and pencil. An architect uses many mediums and many technologies to enhance his understanding and increase the value of his work. Likewise, humanities work can benefit from additional mediums rather than relying on the written word.

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[1] Staley, *Computers, Visualization, and History*, 4.
[2] Ibid., 48.
[3] Martin Campbell-Kelly, *From Airline Reservations to Sonic the Hedgehog: A History of the Software*

SLIDE 7 & 8 Images and diagrams enhance the analysis and provide information in much quicker and in more succinct ways.[2] The old adage that a picture is worth a thousand words is applicable to historical research. In viewing a diagram or image, the observer is able to comprehend multiple scenarios, time frames, and associations. With text, each explanation must be taken in one section at a time. Visuals, as it were, allow the observer to process multiple paragraphs in one glance.

SLIDE 9 With modern applications, most notably Google Earth, practically anybody can virtually fly around the globe and look at nearly any spot on earth to the level of cars on the street. Only in the past 40 years or so was all but a small fraction of the world viewable as an aerial map, and until more recently has that information been available to the general public. Online maps and desktop applications can now provide stunning detail of the whole globe to anyone with access to a computer. Such technology has greatly changed the field of geography and cartography, not to mention making it easier for anyone to get from place to place. Can the humanities be in a similar position of change? Have historians only been looking at bits and pieces of the

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[2] Ibid., 48.

past? Can the programs and applications available now help historians virtually fly over and look at any point in the past in greater detail? <mark>SLIDE 10</mark>

So what is "Digital Humanities"? Digital Humanities seems to be the response to our professions self-reflective use of new technologies and media. Beginning in 2009, a group of these Digital Humanists have attempted to write about what they do on one specific day of the year, in an attempt to accumulate a broad array of activities that depict what this emerging field looks like. Called the "Day of DH", each participant is encouraged to add a blog post or short write up of what they did that day and include their definition of what it means to do "digital humanities" research. <mark>SLIDE 11</mark>

<mark>SLIDE 12</mark> Definitions range from:

"Application of computer-based methods for the Humanities. Though, on some occasions, I prefer "Humanities Computing" to make clearer that these applications often have to be developed and that a lot of basic research is required. What I do not like about the term "DH" is that it implies that there is digital humanities as opposed to non-digital humanities. But there is not. In the future, computer-based methods will be naturally used by any scholar. It is not like experimental vs. theoretical physics." - Malte Rehbein, University of Wuerzburg, Germany

to:

"Who the hell knows....I certainly don't" - Ethan Watrall, Michigan State University

We can see the increasing popularity of Digital Humanities (at least as a term). By just looking in JSTOR alone (August 2014) there are 426 results for "Digital Humanities." The earliest articles appear in 1984, with the bulk of the articles coming after 2000 (395 of the 426).

Often comparisons to other disciplines and organizations provide insight on how to incorporate technology. Instead of looking at how other groups have used these tools, though, I propose we look at how the tools themselves were created, and suggest that some of the methods used in creating these tools provide one way of moving the humanities into the digital age. Looking at some ways in which computer software was created and the ethos and communities that have evolved around its creation can provide an inspiration for the humanities as we plot a course with new technology and new media.

Being an historian, a bit of computer software history sets the stage and environment from which to learn.

In the early days of software programming there was no distinction between producers and users. Because computers were so rare, the users were the producers in terms of software. With such a limited number of computer programmers, there existed among the businesses and organizations that used these computers an open mindset about the software that was created. It took many, many hours to create the first generation computer programs. In the 1950s software was written in machine code, binary or decimal code, by hand.[3]

Every time a program was written, it was done from scratch. It cost a lot of money and people hours to program this way, causing some to worry if it was even worth the price. Every company who owned a computer had to build each new program from scratch. In the late 1950s, businesses like IBM began collaborating their programming efforts by creating parts of code that

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[3] Martin Campbell-Kelly, *From Airline Reservations to Sonic the Hedgehog: A History of the Software Industry*, History of computing (Cambridge, Mass: MIT Press, 2003), 32.

could be reused by their internal programmers and eventually other businesses.[4] Sharing programs saved lots of money and programming time, and lead to an ethos of collaboration and information sharing in an environment where software was continually playing catch-up to the hardware, and where every computer had to have custom built software. It was as if each book had to create a new and unique alphabet in order to create the ideas of the author. In this environment sharing computer code was vital to the progression of computers.

SLIDE 17 One pattern for Digital Humanities is seen in the current form of software development known as the free-software movement. Richard Stallman, an original creator and major proponent (one could even say prophet) of the free-software movement, began working on software programs at a specialized lab at MIT in the late 1960s. Even though the lab was funded by contracts with the U.S. Department of Defense, and arguably in rebellion of the funder, the atmosphere in which he worked promoted the freedom of information. Not only were programs freely shared, but also access to computers and personal accounts were open to all users. Information in this

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[4] Ibid., 33.

setting was thought to be a basic human right, such as the freedom of speech.

He took this ideology with him when the lab at MIT was closed, and

incorporated the basic information rights in a computer operating system. The

Free Software Foundation, which Stallman founded, is meant to provide freely

(as in unrestricted) accessible software as a matter of social, ethical

responsibility. It is, for these proponents, as inalienable a right to have the

source code of programs as it is for freedom of speech.

SLIDE 18 The Open-Source movement is a spin off of the Free Software

Foundation, mainly arguing that the term "free" makes business executive

squeamish, and the terms open source are more palatable. Richard Stallman

argues that the word "Free" must remain to evoke the nature of freedom in

which he believes all software exists. Basically interchangeable, these two

movements are often combined into the single term Free/Open Source

Software, or FOSS.

SLIDE 19 Note the difference between free as in beer, given away without

monetary costs, and free as in speech, where the information is an inherent

attribute, available without restrictions.

The Internet and the World Wide Web were also created in an environment of collaboration. The builders of the ARPANET (which evolved into the Internet) and software developers "adopt[ed] a new paradigm for managing the evolution of the system [which they were using]: rather than centralize design authority in a small group of network managers, they deliberately created a system that allowed any user with the requisite skill and interest to propose a new feature."[5] As programming and computers became more prevalent, non-technical users were able to contribute in a similar manner. Good, solid, usable code persisted. Faulty, inadequate code died off.

Looking at the guiding principles of the FOSS movement and the way in which the Internet and World Wide Web were created provide the basis for which to construct an additional way of doing humanities scholarship.

A correlation of FOSS and Internet/WWW characteristics and humanities counterpoints might look like this:

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[5] Janet Abbate, *Inventing the Internet*, Inside technology (Cambridge, Mass: MIT Press, 1999), 5.

Perhaps the most important benefit of the computer and associated technologies is the ability for a much greater audience to interact and collaborate on resources. One of the practical applications of the FOSS movement is that many eyes will be able to quickly and more accurately fix problems in the code. Similarly, one of the driving factors in the creation of the Internet was the ability of any person, regardless of education level or professional certification to apply their knowledge to the configuration and improvement of the network. If these principles are applied to historical scholarship, for example, one might be able to see a more accurate past, or at least more levels and narratives describing the past.

SLIDE 24 One way in which the World Wide Web increases collaboration is through websites created by interested individuals. The website *World War II Today: Follow the War as it Happened* (http://ww2today.com) provides a way to share history in the form of personal histories that would not otherwise find an audience.

As website creator and editor Martin Cherrett describes, "Web sites provide an excellent opportunity to present history in a new way, providing for the inclusion of a much greater volume of original or primary source material than would be possible in a conventional book, including many more photographic records than could be economically included in a book."[6] There exist a great number of websites dedicated to the history and memorialization of specific combat groups, each focusing on the stories and experiences of their members. A September 2014 Google search resulted in over 35 websites just for American bomber groups. Each site contains an archive of experiences. Such websites as mentioned above are great examples of how new media and the ethos of sharing resources fits with the ideals of dissemination efforts in humanities research. Multiple benefits come from having this information open on websites. First, the information itself is much easier to find due to the nature of search engines that index and retrieve results for every available webpage on the Internet. Second, many narratives that otherwise would not be shared are available to the public. Small group efforts to collect information are combined into a great resource when shared online.

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[6] http://ww2today.com/faq

Comparing the number of websites to books about underground projects shows how the information about a given historical topic can be made available in greater numbers. Whereas 14 books were found on different underground projects, there were over 25 websites dedicated to the history of underground projects.

SLIDE 26 Shortly after writing my dissertation prospectus I created a website to correspond with the dissertation. The purpose of the website is to enable the dissemination, collaboration and presentation of the research and resources surrounding my topic. In the past three years the website has received over 50 comments relating to my topic. Two specific conversations have proven to be most advantageous. After a month long research trip to Germany in the Summer 2013, I posted about the different archives and cities I visited, and the many resources I found. I received a comment from an American who was traveling to Germany soon to visit the location where his mother was interned as a forced laborer at the camps in Porta Westfalica. He requested information about the city and places to go. I gave him the information for contacts I had gathered and a number of a group I had only found after my return from the trip. The group was the KZ-Gedenk- und Dokumentationsstätte Porta

Westfalica. Their group, formed in 2009 by the city of Porta Westfalica, is tasked with gathering memories and documents regarding the concentration camps located in Porta Westfalica. While I was unable to visit with this group during my visit, I was able to help someone make the connection and he was able to get more information about where his mother had been imprisoned. In return he gave me the name and contact information for the director of the group. Since then I have been able to communicate with the group and inform them of my progress on the dissertation. As a result of our communication, I have been invited to present my research at a commemorative celebration of the end of World War II in May 2015.

SLIDE 27 A second conversation via comments on the website was with a gentleman who lived in Porta Westfalica during this time as a young boy. After connecting via the website we were able to share emails about books and primary sources pertaining to the subject. One resource was a rare book dealer who has a copy of an English intelligence booklet detailing the projects at Porta Westfalica. He also shared this photo with arrows locating his house, one of the

entrances to the underground factory and the Kaiserhof Hotel behind which the inmates were encamped.

Collaboration and discussion happen on many history forums. Forums are a particular type of website where interactive discourse is the purpose. Usually, such websites require potential contributors to create an account and be logged in to participate in conversations. This discourages ill-intended individuals who wish to deface or promote content for monetary purposes. Forums typically have boards that are broad categories of discussion. Within the boards, users will create topics where a discussion can exist. Normally, a topic will begin with a user asking a particular question about some event, person or place. Other users can see these topics and post their response. The responses and the original question are shown in sequence so as to preserve the conversation as it took place.

The above example shows two sections, "About the site & forum" and "Axis History", with a number of boards, "Comments & Announcements about AHF", "Axis History Factbook - Corrections & Additions", "Life in the Third Reich & Weimar Republic", "Propaganda, Culture, & Architecture", "Music of

the Reich", and "Women in the Reich" as examples. Within these boards are hundreds and thousands of topics containing thousands of posts by users. Much of the content is historically accurate, linked to scholarship done by professional historians.

At one point, I went looking for information about my dissertation topic on one forum and found a link to a paper I had written years before as a Masters student. The paper was listed as a good resource for some particular aspect of German history. It was quite fulfilling to see research that I had completed for a course requirement and my own intellectual improvement to be of benefit to others. Such would never have happened if I had not made the paper available on my own website first, and if the forum did not exist for like-minded individuals to discuss.

SLIDE 29 Zotero[7] provides an easy way to collaborate sources. Zotero is both a software program and a website. While browsing the user can save records in the Zotero library. These records can contain bibliographical information and notes made by the user. The user then has the option to share this collection of sources online and form open or closed groups. Open groups allow any other

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[7] Disclaimer that I worked for CHNM from 2006 until 2014 where Zotero was/is developed.

Zotero user to add to the bibliography. Closed groups allow only approved users the privilege to add records, and both options allow the library or collection to be publicly viewable or not. As is seen in the screenshot below, a Zotero group has been created to collaborate and organize resources available for my dissertation project.

<mark>SLIDE 30</mark> Another tool of collaboration to be used for the dissertation is that of crowdsourcing. Crowdsourcing, a portmanteau of "outsourcing to the crowd," is the act of using a large number of individuals to complete a common task. Crowdsourcing will be used to translate and transcribe primary sources. After working with faculty in the German Language Department at George Mason University, I will develop a series of lesson plans that encourage students learning the German language to use primary sources for exercises in translating.

<mark>SLIDE 31</mark> It is hoped that the novelty of assisting an ongoing research project, along with the novelty of working with Nazi government documents, will not only enable students to gain a better understanding of the German language,

but will also expose them to issues regarding German history and the history of World War II.

SLIDE 32 As Francis Bacon Sr. is quoted as saying, knowledge is power. The Internet (the World Wide Web and all technologies that use the network) literally spews forth a never-ending stream of ever changing and growing body of information. The problem is how to channel the information to gain knowledge. A rise in information begs an answer to the question: What are the structures that will arise to control the information? The idea of Free Software (the "inherent" ability to view the construction of software) is radical and revolutionary. It changes the paradigm of commerce, and alters perception about private and public works. It challenges the value and legality of copyright laws. If information is inherently free, then restricting access to that information is tantamount to slavery. I hope to see Digital Humanities as a call to set free the information found in our collective research.