

Mysteries in Time and Space: Historical Computing

John Lutz (jlutz@uvic.ca)

History University of Victoria

Patrick Dunae (dunae@cliomedia.ca)

Malaspina University College

John Bonnett (John.Bonnett@nrc-cnrc.gc.ca)

National Research Council of Canada

This session highlights three of the most innovative projects in Canadian historical computing, all aimed at deploying the new technologies new pedagogical ideas to allow us to teach humanities and history in ways we have never been able to teach before. The session is organized by the Canadian Committee on History and Computing, a committee of the Canadian Historical Association and the leading body in historical computing in Canada.

The three papers in the session highlight different aspects of the history-technology interface: one involving 3-D reconstructions, the second the linking of historical maps and census information to contemporary GIS based maps, and the third the creation of virtual archives around historic crimes aimed at a new pedagogy of teaching history.

History viewed from the side: Future Directions for Historical Representations Using 3D Environments

John Bonnett, Ph.D.

Historians, as a rule, make bad futurists. Their object of concern is the past. And more to the point, their experience suggests that would-be prophets more often get things wrong than right. That being said, in the context of history and computing, there is a case to be made that scholars should consider how current changes in communication technologies will transform future practice in the historical discipline. The purpose of this paper is to argue that if historians mean to appropriate the computer, and specifically 3D objects and 3D environments as media for representation, they will have to pay a specific price. They will need to revisit the aesthetics of their discipline. They will need to devise conventions to govern narration, representation and documentation for 3D-immersive environments, specifically virtual reality and augmented reality. This paper will explore

two aesthetic innovations that potentially might be applied in 3D environments.

The first innovation is the *sideshadow*, a literary device that can be used to communicate that systems such as cities have the potential to evolve in multiple directions, while only selecting one. The sideshadow is a representation that complements the representation of history as it was. Its purpose is to suggest the possibility of alternate histories, paths of growth and change that could have been visited by a city, but were not. The second innovation is the *siderepresentation*. Its purpose is to communicate that objects contained in a virtual environment are the product of interpretation. Different individuals will have different opinions on how a given object — such as a building — should be represented in a virtual environment. Conventions will need to be devised to communicate when a given object is a point of contention, and enable exploration of the differing perspectives available to them in a given virtual space.

John Bonnett is a Research Officer with the National Research Council of Canada. A historian by training, he recently completed a thesis devoted to the writings of Harold Innis, the Canadian communication theorist. He is also the principle developer of the *3D Virtual Buildings Project*, an initiative designed to enable students to generate models of historic environments using 3D software, and to develop critical thinking skills via model construction. He is the chair of the Canadian Historical Association's committee for history and computing.

Mystifying History: the Great Mysteries Project

John Lutz

The paper describes the marriage of the new pedagogy to the potential of the new technology to create virtual archives around a single event or subject. It focuses on the work of the *Great Unsolved Mysteries in Canadian History Project* which has created three virtual archives of historic documents and images, each focused on a compelling murder, and proposes to create 10 more.

The project has taken the innovative approach that history can and should be fun and internet technology can help make it so. It is not just that each of the websites uses the near universal interest in the mysterious and the macabre to draw students in. What is novel about this project is a teaching method which focuses on giving students the skills to be historians, while providing them with the context needed to make historical judgments. The standard method for teaching history has tended to make students passive consumers of a history which others have put together for them. Not only is this usually uninteresting but students do not acquire the historical skills that would allow them to tell good from bad history: assessing credibility, critical reading, reading for bias, or creating a narrative.

This involves giving students access to archival and other historical records compiled from the main archival repositories, transcribed and translated, so they avoid the most frustrating activity of reading archaic, faded writing and are able to engage in their own language. Previously, only professional historians could justify the time and resources to travel to several archives to compile the necessary documentary record.

The project draws on the new historical pedagogy, sometimes called *active learning* or *Document Based Inquiry*, aimed at making students historian-detectives. It is a staged approach to teaching the skills of an historian as early as middle school and making the tasks more complex through high school and to university. The session title "Mystifying History" is ironic since the main point of using historical mysteries is that through the detective work needed to solve the crimes, the project de-mystifies the complex skills that go into creating a historical narration and argument.

Each virtual archives houses approximately 250 unique documents, 100,000-125,000 words when transcribed (the equivalent of a scholarly book), 100 photographs, 10 maps and the next phase will include 3-dimensional reconstructions of a component of the historical landscape. The project is already in use in over 300 high schools in Canada, the United States, Australia, Germany, Great Britain, and elsewhere. Teachers' guides are available and the websites are available in French and English. They are provided to schools totally free of charge.

John Lutz is an associate professor of history at the University of Victoria and is co-director of the *Great Unsolved Mysteries in Canadian History* project. Phase One of the project has won two prestigious North American Awards, the NAWEB and MERLOT awards.

Virtual Victoria. Visualizing a Victorian city with digital maps, views and GIS

Patrick A. Dunae

Abstract

What did a late 19th century Canadian city look like? What did it feel like? How was residential and commercial space utilized? We can address these questions in a computer-mediated application that allows us to visualize a Victorian city. In the prototype described in this paper, we focused on Victoria, British Columbia, circa 1891.

The application comprises several components. It utilizes attribute data derived from census records, tax rolls and street directories. It features digital image maps based on bird's eye views and panoramic photographs of the city in 1891. The image maps connect streets, buildings and activities shown in the prints and photographs to our attribute data. The data and the images

provide the foundation for an historical GIS of the city. Using these resources along with video, photo imaging and 3-D modeling software, we have created scenarios where users can 'fly over' the city and to zoom in and out of 1891 streetscapes. The scenarios and our GIS layer will be available at web site called *Virtual Victoria*. At the *Virtual Victoria* web site, students, researchers and the general public can visualize and interact with a late Victorian city.

Introduction

In the early 1960s, G. M. Young, the distinguished historian of Victorian England, famously exhorted students to "read until you can hear people talking." He meant, of course, that students could best connect intellectually and emotionally to the past by immersing themselves in the literature of the period. Historians of Victorian Canada encourage students in similar ways. We enjoin students to read contemporary novels, newspapers and memoirs as a way of connecting with the past. Like Young, we want students to be so acutely attuned that they can hear people from the past talking.

But we have an advantage over history practitioners forty years ago. We have the advantage of digital convergence. Empowered by multimedia and other computer technologies, we can see the Victorians more clearly than ever before. Using archival records and new technologies, we can create a milieu where students can visualize a Victorian city and an historical environment where perceptive students can "hear people talking." This is the promise and allure of humanities computing for the historian.

We are exceptionally well positioned in this city, because we have broad foundation to build on. In terms of digital historical data, Victoria may be one of the best-documented cities in Canada. Thanks to an initiative started about ten years ago at the University of Victoria and Malaspina University-College, we have an extraordinarily rich dataset to work with. We have a 100% sample of the nominal census records, plus digital versions of city directories and tax assessment rolls from 1881 to 1901. These records are readily accessible on our Vancouver Island web site at vi — an abbreviation for "Vancouver Island" — history. The *vihistory* web site is located at <http://vihistory.ca/>.

Historical records available on the *vihistory.ca* web site comprise the attribute data for this application. But while our study is grounded with those records, I will start our discussion from a different perspective — from the air.

I. Visualizing the City with Lithographic Views

Panoramic lithographic views — also known as panoramic maps and 'bird's eye views' — are one of the best sources available to historians who want to visualize, understand and represent nineteenth century cities in Canada. Of course, the views were

idealized and somewhat fanciful. In the main, however, panoramic views provide a very good representation of urban space. The 1889 panoramic view of Victoria is remarkably accurate in its depiction of the city and so is a valuable component in this project. We have created an effect that enables viewers to connect the lithograph with a sequence of contemporary photographs taken from the top Victoria's highest building in 1890. We have also linked the images to our dataset of census records and street directories, thus creating an interactive faux GIS.

II. Visualizing & Populating the Victorian City with GIS

Urban historians and historical geographers face another challenge. We not only want to visualize the Victorian city, we want to populate the Victorian city. We want to populate it with the residents who actually lived and worked in the urban spaces we are endeavouring to re-create. In the second half of this presentation, I will discuss the power and potential of a full — rather than a faux — GIS application. I will describe briefly some exciting projects already developed by urban historians and historical geographers in the United States and Great Britain. I will demonstrate how we are building an historical GIS of Victoria using historical census records and digital cadastral layer of the modern city of Victoria. With technical assistance from GIS professionals in the Capital Regional District of Victoria and consultants from ESRI Canada, we have started on a prototype that has immense potential for students and researchers. In this part of my presentation deal with datasets and simulations generated by *ArcGIS* and a 3-D modeling program, *CommunityViz*.

The presentation will conclude by connecting 21st century 3-D models with the isometric models seen in Victorian lithographs. In my closing remarks, I will emphasize the value of utilizing archival records with new technologies, and the promise of research methods and digital applications derived from other disciplines.