

Historians and Technology / Les historiens et la technologie

By John Bonnett

Historians for the most part tend to resist generalizations, save for one, that historians don't like generalizations. That point being conceded, I'm going to offer another one: historians don't like computers much either. There are all sorts of reasons, some historical, some cultural, for why this is so. But the fundamental reason, I think, rests on the mental map most of us have when we think about computation. Put simply, it lies on the periphery of the fundamental tasks – be they in research and analysis, or teaching and communication – that we identify with being historians. Most of us have nothing against computing, per se. It just isn't relevant to what many of us conceive to be the proper tasks of scholars who deem themselves to be humanists.

That collective perception, however, is beginning to change. It is happening far slower than I would like, but it is changing as a result of the work of historians, historical geographers and historical scientists who over the past 20 years have thought long and hard about computation, and how it can be used to support the research, communication and teaching practices of historians. Here I am thinking of the contribution of individuals such as William Turkel, Lisa Dillon, Shawn Graham, Ian Gregory, John Lutz, Ruth Sandwell, Chad Gaffield, Pat Dunae, Léon Robichaud, Sherry Olson and Robert Sweeny. There are many more I could mention.

My purpose here is to report on one of my own contributions toward that effort: *The 3D Virtual Buildings Project* (3DVB). The fundamental purpose of the 3DVB Project is to use 3D modelling to support a difficult pedagogical task, namely teaching students to distinguish a historical representation from the historical object to which it refers. Let me state what I mean here in less abstract terms. In my writings and talks on the virtual buildings project, I often represent myself as a member of the George Gershwin School of Historiography, largely because I am a fan of his magnificent opera *Porgy and Bess*, a controversial work that portrays the travails of 20th century African-American life in Charleston, South Carolina. One of the reasons I'm so taken with the opera, aside from its glorious music, is the cynical take on life it presents through the piece's villain: Sportin' Life. In the midst of the famous piece "It Ain't Necessarily So," Sportin' Life proclaims to his shocked counterparts that "the things that you're liable to read in the Bible, well they ain't necessarily so...." Now, I have nothing whatsoever to say about how my students construct their theology, but I do have a great deal to say about how they construct their history. And when they do, I want them to listen to Sportin' Life. I want them to match the skepticism of Sportin' Life, and to realize that the things that they're liable to read in the Bible – or book, or monograph, or textbook – are not necessarily so.

There is nothing particularly novel in this aspiration. We all share it. And if our students haven't internalized Sportin' Life's ethic after some four years of university instruction, most of us would come to the conclusion that we've failed our students and failed ourselves. What the 3DVB project hopes to contribute here is another method to teach that ethic: through the use of visual sources – maps and fire insurance plans; through the use of a concrete referent – a heritage building; and through the use of 3D content generation, a model of a building. The rationale for so doing rests on a consideration of what historians do when they ask their students to engage in critical thinking. Typically, scholars ask students to assess a model of some abstract thing, be it the emergence of a social formation (such as the English Working Class), or an episode of political decision making (such as the decision to use the Atomic Bomb). Next, the professor asks them to evaluate that model using tens or hundreds of pages of primary and secondary texts. From these sources the student is asked to abstract an object – one in which they have no direct experience – and relate that abstraction against another: the object they are being asked to critically consider. While the acquisition of such skills is a worthwhile end, we should not be surprised that university level students with limited amounts of time find such a task challenging. Senior scholars do. We should also not be surprised that it takes our students a fair bit of time to process and reach a deep understanding of the fundamental lesson we are trying to impart: that historical models – our monographs, our articles, our textbooks – are mediated things, imperfect, incomplete representations of the objects to which they refer.

To assist in that process, the 3DVB project proposes an exercise in which students are asked to reconstruct a concrete object – a heritage building – and use visual sources, typically photographs and fire insurance plans. For those who have not been exposed to them, fire insurance plans are maps that were produced by the Sanborn and Charles E. Goad companies from the mid-19th to the mid-20th century to assist insurance adjustors in setting rates for their clients. They were produced in Canada, Britain and the United States, and provide rich, high quality, high resolution portraits of urban centers extant at the time, including building footprints (See Alain Rainville, "Fire Insurance Plans in Canada," *The Archivist* 111:25-38). These two sources provide information that can be translated into numeric information indicating the size of buildings and the relative position of their constituents. They in turn can be used – on their own, or in conjunction with other sources – to support a constructivist learning process in which students are exposed to the following tenets of the historian's craft:



Ottawa's Hope Building, in Sketch-Up and in 1936 (right). National Archives of Canada, PA 9060 /



- **Source Criticism** – One of the key challenges project students face is deriving building height. Sometimes the height of a structure is indicated. Sometimes it is not. But even if a height is inscribed, project participants learn the need for caution in accepting the figure. When inscribing height, the cartographers of these maps followed a specific convention, indicating only the height of a structure's vertical walls. If a building was topped with a sloped roof, the top story was listed as a half story, and its contribution to building height was not included. Here, our students learn two things: the need for source criticism, it's important to learn the circumstances underlying the production of a document; and the need to guard against anachronistic interpretation. A student's interpretation of a figure can be very different from what the original cartographer intended.
- **Navigating through Uncertainty** – One central aim of the project is to confront students' with the inherent uncertainty associated with historical reconstruction, uncertainty precipitated by gaps in primary source data. Here, we emphasize to students that evidentiary gaps are faced by historians all the time, and that the responsible response is to acknowledge the gap, and to make an informed inference on the gap's probable contents based on a reading of the historical context of the time. In the context of our project tutorial, that ethic is applied in an exercise dedicated to reconstructing a building wall for which there is no data. Here, we emphasize to our students that there is no right answer to the hypotheses they offer, as long as their reconstructions are consistent with the architectural and construction practices of the time. And here, students literally see that there is a threshold of uncertainty associated with the past that can never be overcome.
- **Source Interpolation** – We also seek to show our students that the value of one primary source can be enhanced by reading it in relation to a second primary source. In the context of our tutorial, we use this principle to enable students to derive the height of the building that serves as the focus of the project tutorial, the building of James Hope, an Ottawa stationer whose building was situated on the corner of Elgin

and Sparks Street in 1878. In the two sources we present, the fire insurance plan indicates the absolute height of neighboring structures, but provides no figure for the Hope building. The photograph we provide indicates the relative heights of the Hope building and neighboring structures to the west. By placing the two sources together, we're able to show our students that they can use the two sources to locate an elevation point on the Hope building, and then, using other photographs and a little simple math, calculate the height of the Hope building.

The consequent of modeling the Hope Building, and completing the above exercises, is that students receive a first-hand, visual and concrete way to understand the fundamental point that we all expound from our lecterns: that historical works are mediated works, and that is in students' interests to examine the internal plumbing of any historical work, to see if it should command their agreement and their respect.

With the release of Trimble *SketchUp*, it has never been easier to incorporate 3D modeling into the university history classroom. *SketchUp* is easy to learn, is well supported with on-line tutorials, and, best of all, it is free, while a Pro Version can be acquired for the cost of a textbook. Scholars interested in applying the methods of the 3DVB Project with *SketchUp* have the following next steps open to them:

- Download and learn *SketchUp* (<http://www.sketchup.com/learn>)
- Read my article "Following in Rabelais' Footsteps," which provides the fullest description of the 3DVB Project, and illustrative graphics on the project's exercises and use of primary sources (<http://brocku.academia.edu/JohnBonnett>)
- Attend my 3D Modeling Class at DHSI@Congress (Registration information available at <http://dhsi.org/events.php>).
- Contact me directly with any questions that you might have: jbonnett@brocku.ca

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