Research Profiles

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Literary History with a Difference: The Orlando Project

Traditionally, high-performance computing has been used primarily in the academic disciplines of physics, astronomy, chemistry, and computer science—fields requiring complex simulations from very large datasets. Recently however, humanities researchers have also started using new computing technologies and, as a result, adding new and unexplored dimensions to the nature and scope of humanities work. Specifically, in 2006 women's literature scholars were presented with a new and exciting computing tool—a type of database capable of allowing researchers to investigate complex research questions. It was in 2006 that *Orlando: Women's Writing in the British Isles from the Beginnings to the Present* debuted and changed the relationship between computing and the humanities. *Orlando* is a unique 'textbase' containing articles on the history, literature, and culture relevant on women writers in Britain. The semantic encoding of its content, allows users to track such matters as the reception of an author's writings, related intertexuality and influence, literary responses, textual features, and other aspects of the author's literary career and life, not just in the entries directly on her, but throughout the textbase. Susan Brown, a co-founder of *Orlando*, is now collaborating with SHARCNET to develop software that will generate three-dimensional information networks based around search results. Brown and SHARCNET will push the *Orlando*'s capabilities even further by enhancing the standard search-and-retrieval text browser with a visual modelling tool for illustrating relationships, which scholars will use to explore new and unexpected paths and patterns.

Brown is a professor of English at the University of Guelph and the current director of The Orlando Project. Her original research interests in Victorian writing and its relationship to such matters as feminism, imperialism, and economics have been joined by increasing involvement in the growing field of digital humanities as a result of her involvement in this trailblazing project.

Appropriately named after the Virginia Woolf character, *Orlando* covers a large time period and has changed and expanded since its inception. Not surprisingly, developing such a complex and groundbreaking textbase from the ground up was a long and difficult process. Creating *Orlando* required well over a decade of hard work, primarily because the project was breaking new ground in applying custom semantic markup to extensive, collaboratively authored, digital content, and because its delivery system was developed to work seamlessly with the markup. The final product, peer-reviewed and published online in 2006, is a valuable electronic resource focused on the lives and writings of female writers in Britain over the past three hundred years. It is an impressive achievement for humanities scholarship and a tremendous step forward for the new field of digital humanities.

Orlando has successfully transitioned from the restricting medium of print to the easily and widely accessible digital medium. Its predecessor, *The Feminist Companion to Literature in English*,edited by Virginia Blain, Patricia Clements, and Isobel Grundy, was published in 1990 in print form, but suffered from a number of restrictions. The print companion was a dense 1,231 double-column pages was bursting with content and afforded only a minimal index. The transfer to the digital medium provided a number of benefits either not possible or not adequately provided by print. *Orlando* is not constrained by

the capacity of a binding, it can be expanded and updated as needed, and web delivery makes the material accessible from anywhere in the world. Over the last four years, *Orlando* has gained a reputation as a reliable, dynamic, robust and innovative scholarly resource, allowing users to search for information and critical interpretation ranging from an author's name or pseudonyms, to the settings, motifs or characteristics of little-known texts, to the social and literary climates of the time. The textbase is so thorough that a user can, for example, "trace Virginia Woolf…through all the entries on other writers that mention or discuss her, grouping those mentions by context: whether she appears there as another's friend or associate, or as publisher, reviewer, literary influence, or whatever". If it was physically printed today, the still-expanding *Orlando* would easily fill over seventy printed volumes with the current content alone.

But it is not so much *Orlando*'s size as its computationally accessible structure that makes it a unique testbed for developing tools to exploit effectively large quantities of scholarly information. "Working electronically", the team explains in the article, "creates a degree of cross-referencing and textual inter-relation impossible with print scholarship. *Orlando*'s semantic markup also makes its materials amenable to inquiry with computers in a whole range of ways we have yet to explore fully". A recent review in *Eighteenth-Century Fiction* commented that "*Orlando* encourages the researcher to see new patterns, new connections, and new traditions—and thus to think in new ways." The new visualization tool will soon further enhance the already innovative and exciting user navigation experience by literally transforming how users see the materials.

Although *Orlando* has been live and in use since 2006, only a handful of beta users have so far tested the new visualization interface being developed by Brown and SHARCNET. In the paper *Visualization for Literary Historical Analysis*, it is stated that the goal of the project is to "assist literary scholars working with *Orlando* materials by designing systems to support speculative inquiry, by leveraging text markup, text mining, and visualization". The collaboration with SHARCNET will generate a more intuitive navigation system, shifting from the traditional text search-and-retrieval model to a visualization model using three-dimensional graphs.

Brown has been collaborating with Mike Bauer, Department of Computer Science at Western and SHARCNET Associate Director, and Jennifer Berberich, a recent Computer Science graduate, to generate visualized search results. The team is using tags and nodes to create software that will clarify certain patterns or connections between search terms, allowing users to explore the lives and writings of women writers in the British Isles in new ways.

In *Visualization for Literary Historical Analysis*, the team provides a complete breakdown of the new features of the navigation system that will be added to *Orlando.* The interface provides four different navigation modes, Graph Mode, Toggle Mode, Highlight Mode and Camera Mode, which will allow users either to broaden or focus the scope of their results by selecting which information to include and which to exclude or 'dim'. Perhaps most visually exciting is the Camera Mode in which a user can view and rotate a graph in three-dimensions, giving a user the ability to move around and explore every connection. Ultimately, the aim of the collaboration is to export the visualization software developed at SHARCNET to a web-based delivery system. This will give users access to the textbase visualization interface from any personal computer, minimizing geographical and technological barriers to accessing *Orlando.*

As a testament to what can be achieved by humanities computing, a potential application of *Orlando* is that it could be used as a blueprint for developing future textbases with different academic focuses. Indeed, the *Orlando* systems will form the foundation of the Canadian Writing Research Collaboratory, a CFI-funded platform to enable literary scholars to collaborate in the production, analysis, and dissemination of digital research materials. Brown and her *Orlando* colleagues have created a benchmark in digital humanities research that will greatly benefit literary scholars and future academic scholarship on women's literature. The immediate application of this new work is that it will give academics access to the complete *Orlando* textbase visualized from any home computer. Users will be able to focus, refine, and explore intricate and important networks relating to women's writing in the British Isles from the middle ages to the present.