Collaborative Visualizations and Visualizing Collaboration

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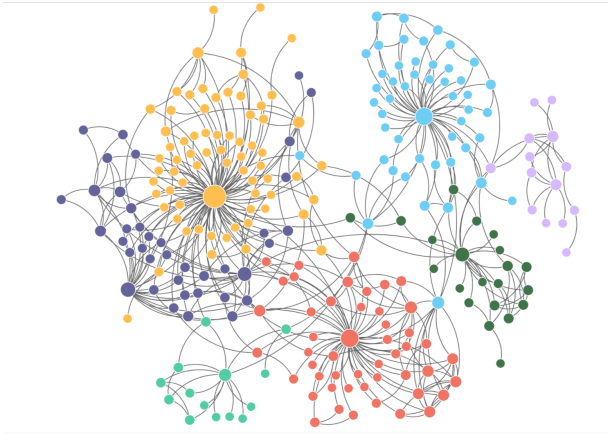
Panel Description

Given the multimodality of digital research, many digital humanists use visualization in some form in their work. These visual outputs are diverse in form, and can range from network visualizations, curated digital exhibitions, spatial analysis, and of course the website infrastructure that houses our products. These visualizations are also nearly always interdisciplinary: no single person can scope and design our visual products, so visualizations require collaboration across disciplines to create and sustain. Additionally, these projects are often inter-institutional, as Sutherland and Nelson demonstrate with their collaboration at the American Philosophical Society and Ohge with his collaboration with the John Rylands Library and Research Institute, and even transnational, as demonstrated by the work of Bernardi with her Japanese material culture archive and Haak with her work on spatial analysis in Southern India with GIS and Google Street View. The visualizations proposed for this panel also reflect collaborations that happened in their contextual moments: Sutherland and Nelson's network analysis of the lineages and connections between women of science demonstrate how crucial publication and lab time with other scientist were to building women scientists' careers, and it was often women themselves who created and sustained these networks. Ohge's network visualization portrays similar types of collaboration among anti-slavery print culture in 1830s England.

Condensing data into visual forms is one key way to engage the public, whether in a museum, stand-alone digital exhibit, or online archive. But not all visualizations have the same public. Indeed, the setting and intended audience influence the final product. For example, a museum exhibit demonstrating a visualization about women in science to people of all ages (Nelson and Sutherland's project) will have different requirements than a material culture digital archive that's full of tactile objects related to Japanese culture that can only be rendered in 2D (Bernardi's project). Furthermore, some visualizations address sacred spaces that have significant religious meaning to some and may require sensitivity to how the visualization portrays the space (Haak's spatial analysis).

Despite their utility in engaging the public, the methodologies of data visualization remain controversial – and depending on usage, limited. At worst, they can be unreadable, and sometimes they oversimplify complex information. Scholars have referred to visualizations as "sandcastles" - "tailored, unique, often stunning yet also transient and unstable interactive visualizations" (Hinrichs, et. al., 2019); static portrayals of dynamic data that potentially oversimplify (Drucker, 2011); and rhetorical framing devices that steer a viewer's interpretation (Hullman / Diakopolous, 2011). In this panel, presenters will use their own visualizations that rely on a variety of methods, collaborations and praxis to interrogate how visualizations contribute to increased collaboration and discovery within the humanities at large. While acknowledging the media affordances and limitations of visualizations, the panel will present how their own approach to visualization through collaboration has helped to craft meaningful narratives about their research and reach a wider public.



Individual Papers

Visualizing the Network of Women in Science at the American Philosophical Society Archives

Presenters: David Ragnar Nelson, American Philosophical Society and Serenity Sutherland, SUNY Oswego

The American Philosophical Society contains substantial archival records related to women and gender in science. Creating a network visualization with this material demonstrates the lineages formed between women scientists in the 19th through 20th centuries. Using the collections of Florence Sabin, Florence Seibert, Barbara McClintock, Rose Mooney Slater, and Mildred Cohn the network visualization demonstrates nearly 500 relationships between women of science that revolve around correspondence, writing letters of recommendation, publishing together, studying and collaborating with, and working in the same lab and institution. The presentation will portray the visualization as a praxis site of

collaboration, public engagement, and scholarship while also interrogating the limitations of this specific network visualization.

The ultimate goal of the visualization is to contribute to ongoing discussions about women's scientific accomplishments. Each entry in the visualization is accompanied by a short, detailed, individual biography (about the length of a wiki entry). Many of the entries are of women scientists not found in scholarship and online wikipedias. The individual biographies help the project move beyond the "heroine" model of women in science by looking at women who are often not considered in major biographies, but who were nonetheless supported by high-profile women with letters of recommendation or unofficial mentorships. The project was produced in conjunction with a public exhibition on women in science in the APS museum and offers an opportunity to reflect on the various affordances and limitations of visualizations for different audiences. The paper will comment on the forms of collaboration between librarians, archivists, education specialists, developers and researchers necessary to achieve this.

Visualizing the Literary Collaborations of Women Anti-Slavery Activists in Nineteenth-Century Britain: Genetic Pathways and Social Network Analysis

Christopher Ohge, School of Advanced Study, University of London

How can digital editing recover under-examined collaborative anti-slavery literature anthologies and introduce new paths for critical interpretation and historical scholarship? I am proposing to address this challenge by producing a digital scholarly edition of *The Bow in the Cloud* (hereafter *BC*), an 1834 anti-slavery anthology edited by Mary Anne Rawson, an activist from Sheffield, England. This project uses editorial and network analysis principles to make accessible the genesis and historical significance of this anthology and its neglected manuscript archive, and to visualize the social networks and underlying themes of transatlantic anti-slavery print culture and rhetoric between 1826 and 1834, when Rawson was preparing the anthology. Using the semantic web authoring tool Scalar, the project combines a TEI XML workflow, network analysis tools, and linked open data standards to attempt to model relationships between archival documents as well as creative-critical potentials.

The project's pioneering use of textual "paths" and network analysis tools leverage computation to facilitate critical analysis. This digital publication employs an integrative and interdependent approach by featuring new modes of presentation, enriching library catalogs and digital image collections with IIIF (https://iiif.io/) technology, in collaboration with the John Rylands Library and Research Institute, and collaboratively building an edition with network analysis tools. The edition lays the groundwork for a detailed, dynamic, and flexible engagement with the making of a significant anti-slavery publishing event.

Title: "Observing 12th Century Cultic Change through Devotee Movement and Corporeal Experience: a Spatial Investigation of Early Medieval Hampi, Southern India"

Presenter: Candis Haak, Assistant Professor, SUNY Oswego

This paper presents a two-part digital spatial analysis methodology and its application to a 12th-century Virupaksha temple within an early Shaivite pilgrimage center in South India. I developed this methodology to investigate ritual change in the early medieval period of the Hemakuta Hill landscape in Hampi, using a geographic information system (GIS) coupled with the immersive panoramic capabilities of Google Street View. By combining these digital platforms, changes to devotee movement and sensorial experiences over time can be detected. Devotee movement through the pilgrimage space was modeled on time-sensitive maps created using Esri's ArcMap. Pathways of movement across the site that devotees traveled were then subsequently explored in the immersive panoramic imagery captured in Google Street View. The nature of Google's Street View technology and imagery enables a ground-based assessment of visual and physical accessibility, and sensorial engagement with non-ephemeral pilgrimage landscape features to be assessed. By combining these digital tools, a historicized analysis of the character and qualities of place, born from the organization of the site, are identifiable. To illustrate, I will discuss the Mula Virupaksha temple as it captures a moment of innovation and heightened concern for devotee experience management. Google Street View imagery captures the importance of the devotee visual experience in the innovative temple design by limiting and directing devotee sightlines. Such novel architecture and use of space thus naturalized and elevated the Virupaksha cult in an already established sacred pilgrimage landscape.

Title: "Re-animating Objects: Collaborative Visualizations of Lost Landscapes, Lives, and Transcultural Encounters in 20th Century Japan"

Presenter: Joanne Bernardi, University of Rochester

Re-Envisioning Japan: Japan as Destination in 20 Century Visual and Material Culture (REJ) conjoins an original collection of early- to mid-20 th century multimedia ephemera with a collaboratively built open access digital archive that dynamically displays these objects in digital space. By allowing curated access to resources documenting representations of Japan and its place in the world, REJ draws on Carole Palmer's idea of a Thematic Research Collection, a web-based resource in which scholarship is embedded in both the product and its use. The collaborative dimension of envisioning and assembling the collection, designing REJ's parameters, and reiteratively building a digital archive that functions as a versatile tool for re-envisioning Japan's past on a granular level is integral to the project's success. The interdisciplinary backgrounds of REJ's team (faculty and library colleagues, postdoctoral, graduate, and undergraduate students) and students in REJ's dedicated course enhance its value as a tool for interrogating enduring and dominant historical narratives by opening up alternative approaches to understanding how Japan defined itself and was defined by others through the material evidence of personal experience and transcultural change. I focus on the processes behind the schema and curatorial features that such interdisciplinarity engenders: features for collective object analysis, contextual metadata management, and online multimedia exhibition and curation that enable collaborative classroom assignments. These include: "Object Encounters" (visual explorations of objects inspired by Prownian analysis); a customized streaming media window; and a media annotation tool for contextualizing locations and events, and marking formal elements that reveal visual patterns.

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