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**Data Revisualization as Critical Humanities Practice: Reinterpreting 19th-Century Data with Modern Tools**

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Data visualization is a rhetorical form of increasing importance, both inside the digital humanities and in arenas of public discourse from journalism to advertising. This paper will argue that the act of revisualizing and representing information whose historical importance was consolidated through visualization offers a useful opportunity for humanists. It lets them fruitfully contribute to and intervene in the professional practice of data visualization, while building new methods of visualization that are specifically grounded in historical reflection on the self-presentation and failures of visualization in a wider historical context. It will do so by constructing *revisualizations* of influential historical data from the US Bureau of the Census. This data was first visualized in atlases published between 1870 and 1920 that remain some of the most widely influential works in the history and present practice of data visualization and thematic mapping. Revisualization reveals the elisions, illusions, and labor at the heart of these canonical works.

In the world of data analysis and visualization itself, a recent process of canon formation has made historical visualization a fundamental part of the field’s self-conception and acts as an inspiration (Tufte, 1983).

Inside the digital humanities, the grounding of data visualization as a historically situated practice is somewhat muted. Martin Jessop (2008) and John Theibault (2012) have called for better situating practices of data visualization as historical practices themselves. On the one hand, there is deep interest in data visualization as a deliverable for digital humanities projects in which humanists implement out-of-the-box practices of visualization (‘Palladio Project’, 2014) and take the representation and augmentation of historical visualizations for digital modes of presentation as an end goal (Fletcher, 2014).

On the other hand, scholars such as Lauren Klein have called for situating these advances in the history of data visualization; still others, such as Johanna Drucker (2011), call for an authentically humanistic form of data visualization that will register uncertainty among the power relations involved in categorical enforcement.

The practice of data revisualization bridges the divide between enthusiastic application of other tools and critical reflection on the elisions inherent in visualization. This talk will investigate a self-consciously critical practice of data visualization through the re-analysis and re-visualization of two deeply influential cartographic data visualizations produced by the US Bureau of the Census between 1870 and 1920. One shows shifting population densities in recent decades of US history. It was widely discussed across American society, including providing the impetus for the single most influential article in the historiography of the United States, Frederick Jackson Turner’s frontier thesis (Turner, 1894). The other shows the ‘center of population’ for the population as a whole and for the white and Negro subsets of it. These maps, and the census atlases they come from, are well known both among practitioners of data visualization and scholars of the 19th-century American state (Dandison, 2012; Kinnahan, 2008; Hannah, 2000).

This paper will investigate and deconstruct these maps in two ways:

1. Through the use of archival sources from the National Archives, the paper will better contextualize the maps as products of state construction. The center-of-population maps, for example, are described internally by the Census Bureau in terms that highlight the extreme difficulty of calculating the mean rather than the median of population. Employment records and extraordinary quantities of saved paperwork at the Census Bureau bear this out. These files can help explain the rhetorical origins of data visualization in practices of the state that emphasize the extraordinary labor invested in created data visualization as a way of constituting authority. Archival records also help to clarify the way that these records were used in the early 20th century by other members of the national polity, from advertisers interested in demonstrating the centrality of their state to newspaper editors fearfully tracking the Negro population’s move north after the Great War.

2. Through revisualization of the historical data using the D3 framework for JavaScript, the paper will investigate the elisions in the original data as well as the ways that different choices can open up different perspectives on the data. For example, while Turner treated the closing of the frontier as an objective fact, this analysis will show how it was only possible through an aggressively imposed set of assumptions about population distributions that even the Census Bureau itself abandoned 10 years later, leading a (mostly ignored) restoration of the frontier on official documents.

The challenges this poses for data visualization make possible useful interventions in the wider community of data visualization. For example, to adequately represent the shifting frontier line, in all its incarnations, requires extending default svg path behavior to enable smooth transitions in ways that are broadly useful for digital humanities mapping projects mapping with D3.

The strictly national character of this history will usefully intersect with the global themes of the conference, because they highlight the fundamental but frequently repressed connection between data visualization and explicitly state-centered ways of seeing. The census data is doubly so; it both relies on state-focused data and historically served to consolidate a nation-centered identity. Yet recent scholarship has tended to focus on the *scientific* provenance of data visualization, despite the earlier emergence of both specific forms like the choropleth and the widespread dominance of what Lorraine Daston and Peter Galison called ‘trained judgment’ as a way of seeing data in state circles decades before their hegemony in scientific circles (2007).

In contrast to these state-oriented, bureaucratic forms of organization, this paper will propose a model of humanities visualization as an interpretive, authorial practice that aims to open questions of data integrity and visual design rather than mask them through interactivity. As a single-author visualization project, it will address the ways that claims for the inevitability of collaboration in digital humanities can serve as a backdoor for the introduction of statist forms of argumentation.

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