Introduction

Overview [Citation: Key = TI1]

This article is an applied experiment in digital scholarship. Over the last decade networked information resources have come to play a large role in the work of historians; most of us have become accustomed to augmenting our library research and professional discussion through digital means. Despite these changes, scholars have only begun to craft scholarship designed specifically for the electronic environment. In this article, we attempt to translate the fundamental components of professional scholarship-evidence, engagement with prior scholarship, and a scholarly argument-into forms that take advantage of the possibilities of electronic media.

We apply these methods to a long-standing issue in American history: how slavery divided American society and culture in the years before the Civil War. Our close study of two communities near the Mason-Dixon Line, a comparison designed to isolate the role of slavery in shaping societies of similar location and histories, shows significant differences in demography, agricultural strategies, and industrial development but broad commonalities in economic outlook, political structures, and cultural orientation.

This comparison builds on a long tradition of historiography. Generations of historians have debated the differences slavery made, particularly in the Atlantic world in which slavery played such a central role. These differences assumed profound importance in the case of the United States, where the Civil War became the largest war waged over the future of slavery.

People have debated for decades the precise role of slavery in precipitating that war. Some emphasize fundamental, irreconcilable conflict between societies based on forced labor and contract labor. Others emphasize instead contingent events in the political realm. Those who stress intrinsic conflict have often built their arguments around the general concept of modernization, with the North embodying the characteristics of modern society-democracy, economic innovation, and social mobility--and the South explicitly resisting those characteristics. Those who isolate political conflict, by contrast, tend to emphasize the fundamental similarities in ideology and culture of white Northerners and Southerners.

We approach this long-running debate by comparing the specific manifestations of slavery and contract

labor in detail and in relationship to one another. We use the capabilities of new information technologies both for analysis and for presentation of the argument. For analysis, we turn in particular to Geographic Information Systems (GIS) to understand the way social structures were arranged spatially. For presentation, we rely on Extensible Markup Language (XML) to connect large amounts of evidence with detailed discussions of the historiography on slavery in the United States on the eve of the American Civil War.

We find that slavery did not bear a simple relationship to emergent forms of modernity in the economic, cultural, or political realm. The very pervasiveness of slavery throughout the South meant that it exerted complex effects on every aspect of society. Slavery was adapted by whites to technology, communication, industry, and agriculture in ways that permitted white Southerners to consider themselves participants in the most advanced developments in Anglo-American culture and society. On the other hand, slavery led white Southerners to organize their societies in ways different from nearby wage-labor societies, ways that precluded certain kinds of social development and that in turn encouraged the South to understand itself as a perhaps superior variant of that Anglo-American culture and society.

This article concentrates in particular on untangling the relationships between political structures and social structures. Historians have tended to conflate social interest and political identity, assuming that votes for slavery were votes for secession. But the pervasiveness of slavery across the diverse South meant that those who defended slavery voted across the entire range of strategies from fervent Unionism to fervent secessionism. Accordingly, our detailed research shows little connection between slaveholding and political alignment in our Southern county. And it shows no clear connection between social identity and votes for the Republicans or Democrats in the Northern county.

That does not mean that we discount the role of slavery in precipitating the American Civil War. To the contrary, we believe the North and South fought tenaciously in the political realm precisely because they were fighting over the spread of slavery's power-an immediate, tangible, and momentous stake--rather than over differences in social outlook based in a conflict over modernity. The war was the result of two highly mobilized and highly confident regions, each modern in its own way, fighting over the future of slavery in a rapidly expanding United States.

Presentation [Citation: Key = TI3]

Hypertext may be especially well-suited for history. The person generally credited with envisioning hypertext certainly thought so. Vannevar Bush, Director of the Office of Scientific Research and Development during World War II, wrote in 1945, with some frustration, that "our methods of transmitting and reviewing the results of research are generations old and by now are totally inadequate for their purpose." In a remarkable essay entitled "As We May Think," Bush used the writing of history to suggest the possibilities of the future. He imagined a machine he called the "memex," a complex device of glass, steel, and microfilm, levers, screens, and reels. Bush turned to history to suggest why we needed such a thing, using as his example the question of "why the short Turkish bow was apparently superior to the English long bow in the skirmishes of the Crusades." The answer to such a question inevitably embraced material as well as cultural aspects of society and demanded the employment of

several different kinds of information. (See Vannevar Bush, "As We May Think")

Bush saw great promise in photography and microfilm, in the copying machine, fax, and numerical computing--all technologies that have in fact played a large role in professional history over the last half century. But he reserved his greatest excitement for something broader, a machine that would mimic the way we think. The human mind, Bush observed, "operates by association. With one item in its grasp, it snaps instantly to the next that is suggested by the association of thoughts, in accordance with some intricate web of trails carried by the cells of the brain." Bush marveled that "the speed of action, the intricacy of trails, the detail of mental pictures, is awe inspiring beyond all else in nature." He wondered whether we could make a machine that worked that way, that could remember the fading trails and weave them into lasting patterns. That is what this article attempts: a language of exposition that works by branching and layers and connections rather than operating on one plane of exposition.

Vannevar Bush's expectations raised the possibility that what we consider narrative might also shift, that the machinery would change the ways historians conduct and present their work. The possibilities for Bush's "trails" or what we call hyperlinking have only recently been explored. Janet Murray has written the most useful study of narrative in digital media. (See Murray, *Hamlet on the Holodeck*) She points out that computers emphasize four aspects of information, its qualities that are:
- spatial
- participatory
- procedural
- encyclopedic

This digital work embodies all four of those characteristics.

The historiography and evidence occupy separate spatial locations. They stand beside the analysis, independent of it, tied to one another as well as to the comparative analysis, available for exploration on their own terms.

The work is participatory, requiring a physical engagement that traditional reading does not. Readers decide which way to pursue the argument; they may go forward in the analysis or into the material to a depth and with a range a print journal does not permit.

The work is procedural, requiring of the reader a series of steps to reveal its several layers and many components. One must follow those procedures to follow the intricacy below the level of the analysis.

The work is encyclopedic in that it is more fully documented than a journal in print could afford to be. That volume of material offers a deeper connection among documentation, evidence, and analysis than a single plane of fixed text can offer.

The digital scholarship thus engages us in a different kind of reading, a more active kind of reading. Such a reading has some advantages and some disadvantages, especially in the context of current technologies. It appears here as an experiment to help see how its advantages might be emphasized and its disadvantages minimized.

We have taken as our inspiration for this work the bold and suggestive pieces of several colleagues and the enthusiastic leadership of the American Historial Review. Phil Ethington's excellent work on Los

Angeles stands as a remarkable model for the integration of media with narrative. Robert Darnton, past president of the American Historical Association, has provided not only a widely admired review of what digital scholarship might accomplish but also a demonstrated model in his recent American Historical Review article. Darnton's call for a "pyramid" of layers from narrative at the top to evidence and commentary at the bottom has attracted attention to the potential benefits of digital work in the humanities, and many scholars have pointed to Darnton's pyramid as the model to explore. (See Darnton, "New Age of the Book")

We share Darnton's objectives and admire the clarity of his approach, but the model we took for this digital scholarship is not the pyramid. Instead, the work of scholarship presented here is itself a tool, what we might call a "prism." We expect readers to turn its refracting light into new arrays of knowledge and material. In fashioning this digital presentation, in putting together components of argument, evidence, and historiography in sequences that are both modular and connected, we hope to have created a useful interpretive model.

In addition, the prismatic model for this work's presentation and interpretation may advance our view of the central historical issue we are addressing--slavery. Slavery presented, it seemed to us, such a difficult problem in American society because of its ability to refract nearly everything that passed through or by it. Nothing that came into either close contact or proximity to slavery was constant, nothing linear, nothing singular, nothing transparent. The form of our work and the model in which we presented it, we hoped, might most usefully approximate the historical reality we were seeking to describe.

We proceeded from the assumption that our digital work needed to take full advantage of the current technologies and at the same time meet widely shared international standards, as well as meet our expectations for a suitable model. We eschewed proprietary software plug-ins, despite their attractive temptations, and we tried to meet the requirements of all browsers and types of clients. We chose to produce the piece in XML with the expectation that this standard would control digital library and authoring systems for the foreseeable future. XML, or extensible mark-up language, permits several new practices that people have longed for in HMTL, the limited original language of the World Wide Web. While HTML merely described the appearance of text on the screen, XML describes structures. It allows searches to focus on the role information plays in complex arguments rather than merely on strings of characters. XML enables multiple linking, offering a kind of hypertext truer to the name and spirit of that word: branching, dynamic, multiple connection. Our article in XML is a single file of nearly 24,000 lines of text, not dozens of individual web pages with embedded links to each other. A stylesheet (XSL) governs the presentation and arrangement of the document on the web. The article, then, like a traditional article, is a single structured document and comprises our narrative in toto.

Robert Townsend, in a recent article in AHA Perspectives, described tentative efforts to develop an electronic scholarly article. "There are very few cases where the technology has been used to transcend the traditional forms of the journal article," he noted. "Most online publications involve only a few small audiovisual enhancements or hotlinks, where availability seems to be the criteria for inclusion rather than substantive contribution to the argument or the scholarship." Townsend suggested that creating a new form for scholarship tailored to the digital medium would require "an enormous amount of thought and effort beyond the basic work of research and writing." Such scholarship would need, he argued, to be built expressly for the digital medium from the ground up. That is what we are trying to do here. (See Townsend, "Lessons Learned")

Despite our ambitions, this article does not confront some of the very real challenges that lie ahead for digital scholarship in history. The process of producing and designing this electronic article has uncovered fertile areas for future development. We see that subsequent efforts might concentrate on:

- how to present narrative more effectively
- how to represent event and change
- how to analyze language more precisely
- how to create visualizations as compelling and complete as narrative

Our article is offered to the scholarly community as a first step in hopes that we might begin envisioning new forms of scholarship.

About the Authors [Citation: Key = TI4]

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Acknowledgments [Citation: Key = TI5]