The original idea for an electronic article seemed simple enough. Using digital media, we wanted to give readers full access to a scholarly argument, the historiography about it, and the evidence for it. Our early models of the article contained neat squares and lines and carefully arranged explanations of the links from one part to another. We admired the recently published New York Review of Books article by Robert Darnton on the possibilities of digital scholarship, and after years of building the Valley of the Shadow Project digital archive, we welcomed the opportunity to offer an interpretive analysis based on its sources. Through two sets of readings by peer reviewers and presentations to a range of audiences, we have revised our presentation and our argument while maintaining the original purpose of the article. This essay introduces the electronic article and explains its development, as well as our intentions for it. The full electronic version of this article can be found at www.historycooperative.org/ahr/.
Frontispiece: Two hundred miles and several borders separated Franklin and Augusta, but both were part of the same topographic region, the Great Valley in the border region of the eastern United States. The two counties shared similar soils, climates, ethnic and religious background of their white residents, and access to national and regional markets. Despite such similarities, however, slavery caused these communities to differ in a wide range of ways.

Our principal goal was to fuse the electronic article's form with its argument, to use the medium as effectively as possible to make the presentation of our work and its navigation express and fulfill our argument. As a result, this piece of electronic scholarship operates on several levels to connect form and analysis. First, it allows one to reconstruct the process by which our argument was developed, to follow the logic of our thinking, in effect to reconstruct the kind of "trails" that Vannevar Bush expected the technology to allow historians when he envisioned the future of computing in his seminal 1945 essay "As We May Think." This electronic scholarship also uses spatial analysis and spatial presentation to locate its subjects and its readers within the context of the historical evidence and interpretation. The methodology of the emerging field of historical GIS (Geographic Information Systems) informed our analysis and led to the creation of a comparative spatial database of our communities. In addition, we sought to express the spatial analysis of the argument in the article's structure. Third, the electronic article presents itself in a form to allow for unforeseen connections with future scholarship. We consider this last goal critically important for scholars working in the digital medium because the rate of technological change will certainly offer new opportunities even as it displaces current practices. Publishers, scholars, technologists, and librarians have hammered out international standards that govern the basic structures and forms of digital work to take advantage of technological development. Our article seeks to work within these standards in expectation of change.

Our analysis focuses on slavery and its relationship to modernity. Historians have long studied—and argued over—slavery's association with New World capitalism. Studies of the transatlantic slave trade, of the relationship between the modern world and slavery, and of the connections between spatial and temporal portrayals of slavery suggest that it might be time to reexamine the connections between slavery and modernity in the United States. In the case of the United States, the political, economic, and ideological issues in the crisis of 1860–1861 turned around issues related to emergent forms of modernity: the integrity of the nation-state, the course of economic development, the meaning of participatory democracy, and the nature of individual autonomy. This conflict over modernity has long received attention from historians. Many influential studies have relied on a vision of divergent societies, a modernizing North and a South resisting modernity. Recent scholarship, however, has indicated that we might need to revisit that equation. The institution of slavery may have struck its own bargain with modernity in the nineteenth-century American South.

The test-bed for our article comes from the Valley of the Shadow Project. That digital archive allows readers to examine two communities, one in the North (Franklin County, Pennsylvania) and one in the South (Augusta County, Virginia), during the coming, fighting, and aftermath of the American Civil War. The two communities were chosen to provide something like a controlled experiment. They shared similar geographic locations, soil, climate, crops, white ethnicity, and religious denominations. Only one major difference separated them: the Virginia community was built around slavery and the Pennsylvania community was not. Yet that one difference extended its defining influence into all the social arrangements of the Southern community, in ways obvious and otherwise, and pulled its white people into the Confederacy and a war that destroyed what they fought to protect.
By choosing communities close to the Mason-Dixon Line, we offer a rigorous test for slavery's influence: if slavery pulled everything into its orbit only two hundred miles from freedom, we could assume that its force was even greater farther south. If the community without slavery found its institutions and social life undiluted despite living on the border with bondage, we could assume that the patterns would be even stronger farther north.

We investigate the problem of modernity and its relationship to slavery in these communities by joining the tools of geography and cartography to those of social-science history. We created a detailed GIS to compare these places and their social, economic, and political structures. Our goal is to reconstruct the social, economic, and political geography of slave and free communities, to compare them, and to analyze the spatial relationships embedded within them. 

Our argument is that slavery was more central to the Civil War than we have thought because it exerted a determining influence even where slavery did not take the form of cotton plantations and African-American majorities. Slavery adopted the forms of modern life available in the mid-nineteenth-century United States—capitalist forms of investment and economic motivation, advanced transportation and communication, politics of broad participation by white men, and general white prosperity. The differences slavery made for white people were pervasive and structural but not intrinsically opposed to modernity.

We do not find a different white culture in the South than in the North, a culture built around resistance to or even skepticism of modern life. Instead, we find a politics built around the protection of slavery through whatever means necessary. Many white men preferred to protect slavery with Unionism, recognizing that the United States provided a safe haven for the institution where it existed, including Virginia. But, as the events of 1860 and 1861 unfolded, those white men came to believe that only secession could protect slavery. These men did not act as they did because they fostered a different political culture from the North, notions of race profoundly unlike those of most whites elsewhere, divergent forms of Christianity, or any other characteristic that set them against modernity. Instead, they sought to control the future of the United States by preserving a place for slavery as Americans spread their dominion. White Southerners projected the spread of modern slavery into part of an American empire. When that failed, they sought to create an empire of their own.

The digital article makes this argument in a way that takes advantage of the medium's possibilities for precision and interrelation. In the digital article, we have sought to separate various strands of historical argument and evidence so that we can better understand their relationship to one another. Thus we examine agriculture, demography, transportation, class relations, churches, and so on in individual nodes of analysis, comparing the Northern and Southern counties and placing them in regional perspective. We do the same for political affiliation and behavior, which we then relate to their material bases. By exploring these facets of social life as rigorously as possible, we hope to refine our questions and thus our answers. We recognize, of course, that two counties cannot stand in for the entire United States, much less as proxies for the problem of modernity and slavery. We also recognize that no two counties are typical of places as vast as the American North and South. But we have chosen these counties to offer a rigorous test for our argument, and it seems to us that they serve that purpose well. The experiences of our two counties show that slavery drove all the conflict that brought on the Civil War but not in a simple way based on modernity, not in the way many imply when they speak of "economics" causing the war or of the "industrial" North against the "agricultural" South.
It is not yet clear how digital technology will affect the practice of history or whether historians will heed, for example, Robert Darnton's call to consider the advantages of electronic publication. In a show of leadership, Darnton offered historians an example of what new electronic scholarship might look like, publishing an electronic essay in the *American Historical Review*. In recent years, several historians have been working toward common ends, experimenting with publication in the digital medium, seeking to join their analysis with the form of its presentation in innovative ways. Philip J. Ethington has written an impressive electronic essay and presentation for the World Wide Web on the urban history of Los Angeles. Ethington "explores the hypothesis that the key concept in the search for historical certainty should be 'mapping' in a literal, not a metaphorical sense." His work includes a wide range of media and sources to create, or rather recreate, the "panorama" of the city. Ethington suggests that the web site can be read like a newspaper, inviting readers to wander through it, skipping from section to section, and focusing on what strikes their interest. Motivated "simultaneously by two ongoing debates: one among historians about 'objective knowledge,' and another among urbanists about the depthless postmodern condition," Ethington's electronic scholarship grasps the "archetype of 'hyperspace'" to address these concerns.  

The goal of our article is to open the process of scholarly inquiry, to allow readers not only to confront our argument but also to work with its evidence and its constituent parts. The key to the article—indeed, to our decision to embark on a digital article in the first place—is the recent emergence of Extensible Markup Language (XML). XML separates the structure of a text from its presentation, allowing authors to use the structural definitions of the text for searching, linking, and identifying discrete elements, all the while keeping the style and layout of the text's presentation in a separate set of controls (a style sheet called XSL). XML holds out possibilities for scholarship that take us far beyond HTML, the first language of the web, allowing dynamic and multiple linking among diverse sources. The sources we have included in evidence and historiography, for example, operate in a modular fashion; each node of the article's sections contains source information, citation information, linkages, and analysis of its relationship to the whole. The modular structure and the XML behind it make the article flexible yet rigorous, open to alternative presentations yet fixed within an international standard.  

The first peer reviewers of the piece questioned whether what we were producing could be called an "article" at all. Some argued that in the article form there is an implied contract with the reader. The reader expects to allocate a set amount of time to read it, to find the argument laid out in a familiar fashion, and to recognize the visual cues of footnotes, headings, captions, and other means of corresponding with the reader. Early drafts of our article did not meet this contract but instead asked the reader to participate more in the process of investigation. The boundaries between authors and readers in hypertext have been a subject of sustained discourse among literary critics, and a few of these studies have moved well beyond the postmodern approaches of the initial wave of hypertext literature. This recent literature emphasizes the complex process of negotiation as readers and authors continually encounter familiar subjects in unfamiliar forms.  

The openness that the technology affords and the alternative readings possible within this article raise questions about the role of narrative in electronic scholarship, questions never far from our consideration. Literary critics, such as Espen Aarseth, Janet Murray, Jerome McGann, George Landow, and historians, such as Darnton, Ethington, and Roy Rosenzweig, have speculated on the future of narrative in cyberspace. Yet examples of non-linear narrative or hypertext remain few and far between. Despite all of the new technologies and the excitement of the medium, the web, it turns out, is full of traditional linear narrative in large measure because so much of the material on the web has been migrated from print.
As this article evolved, two tensions came to the fore, an outgrowth of the possibilities that both the digital medium and the reader would allow. The first was that software and hardware configurations vary widely, so much so that decisions about technologies dramatically restrict audience and performance. Some of the most powerful hypertextual technologies, for example, remain proprietary and, therefore, inaccessible to some web users. The second tension developed around the article’s narrative structure and the potential non-linearity of our argument. Readers on the web have grown accustomed to conventions of text placement, symbols for various links, and navigational structures. In the process of the article’s development, we presented our work to numerous audiences and saw a spectrum of readers. Readers split over the purpose and character of narrative structure in the digital medium. Some embraced non-linearity as the natural and most effective means of presenting digital scholarship. Others considered an ordered, linear argument essential to historical scholarship of any form. After several drafts, which favored first one then the other approach, we concluded that a balance must be struck. The digital medium offers—in some respects, demands—a form of hyperlinking. It excels in the presentation of linked information and modules of analysis and explanation. The non-linearity that is necessarily a part of digital scholarship cannot serve to obscure its argument, yet the argument in digital scholarship cannot ignore the non-linearity of the medium.

Sustained argument in the digital medium must extend across and among interrelated parts, each piece of which must be understood as possibly the opening page for any given reader. The greatest challenge for the author of digital scholarship is that every page needs to have the codes, symbols, links, and information to allow readers to access the whole argument. Without the conventions already inherent in the book or article form, such as page numbering, chapter organization, and indexing, the digital scholar must develop the argument with the appreciation that the reader might encounter it at several points along its explication. Several problems confront digital scholarship at this stage. First, digital scholarship must consider how to cite "born digital" information, such as an evidence module or a page from an electronic article. Second, it needs to examine how to give readers a sense of the scale of the article and a means by which to track their reading, and presumably its relationship to the overall work. The first problem stems in part from the nature of XML and dynamic database systems where there is no fixed or "hard" URL or web page address for a particular page because each page is dynamically generated. The second is endemic to the medium; it is difficult to tell how "long" or "big" a web site is from the first page or from any page within it. Only exploration and investigation will reveal the scale and scope of a digital work. Our "Reading Record" and "Citation Lookup" tools were designed to address these fundamental issues for digital publications, and they were the result of much experiment and testing. While we consider them useful innovations, we expect that this area of digital work will develop new visualization technologies to make apparent to readers the reach and placement of digital analysis and argument.
The electronic article's maps and statistical tables derive from a Geographic Information System database in which thousands of households have been identified and linked to agricultural, slaveholding, and population census data. This map, showing the spatial distribution of slaveholders and non-slaveholders in Augusta County, indicates the spread of slavery throughout the county.

As technology matures and readers become further acquainted with digital scholarship, the premium for authors in this medium will be on transparency. Technology, no matter how interesting or innovative, should facilitate an argument and in doing so remain transparent to the reader. The article as it finally appears in electronic form for the American Historical Review has, in some respects, been tamed in the peer review process. It follows a more traditional structure than our earlier drafts. It uses commonplace names for its parts. It does not include fancy diagrams for navigational schemes. Instead, the article places the argument in front of the reader immediately and gives the reader a series of choices of ways to test, elaborate, or challenge that argument. As such, it is an extension, an enhancement, of normal scholarly practice in our discipline.

The process of peer review and revision for this article was unusual because both the argument and the form were under review. As historians design and write pieces in digital format and as their peers consider how to review this electronic scholarship, they will come face-to-face with numerous fundamental questions. First, we need to recognize that these publications are highly collaborative and involve the creative and technical work of other professionals. The scholarship produced in the digital medium will continue to be characterized by intermediation, negotiation, and manipulation by a range of scholars and professionals. Second, digital publications require a host of technical decisions on the part of authors and publishers—software platforms, server requirements, proprietary plug-ins, and, for example, browser specifications. An entire field of computer science, Human and Computing Interface, has developed in the last twenty years, testament to the importance of the selections we make in this new medium.
It seems to us that the range of digital scholarship might be quite broad and that the advantage of the digital medium for publication is the openness it provides to scholarly authors to design and create a presentation uniquely suited to their topic, field, period, or problem. In our case, we hoped to create a flexible framework for digital scholarship for historians. The idea behind our approach was to develop a set of common categories and provide some definition to their relationship. We tried to avoid creating idiosyncratic elements peculiar to our work, and we strove to produce a template other scholars might use for a piece of digital scholarship. The article's form—its modules of refracted analysis, evidence, and historiography—is meant to instruct and carry forward the argument. We propose what we have called a "prismatic" model as an alternative to Robert Darnton's pyramid structure, one that allows readers to explore angles of interpretation on the same evidentiary and historiographical background. The prismatic functionality of the article offers to open the process of historical interpretation to the reader, providing sequential and interrelated nodes of analysis, evidence, and their relationship to previous scholarship.

We plan to make something like this article's technologies broadly available, using its structures for different objectives, historical questions, periods, and concerns. As an extension of our work on this article, we have begun to create an application called CHART, for Comprehensive History Analysis and Research Tool, which could work in a college classroom as well as in a professional journal. CHART permits the use of XML and its advantages without requiring the large scale, daunting complexity, and considerable cost our prototype article has demanded. It seems possible that digital scholarship is particularly well suited for some forms of historical analysis, and we put our attempt forward as an early experiment to see if that might be so.

Our close analysis of two American communities explores the relationship between modernity and slavery. The argument we offer seeks to overturn a longstanding argument about the coming of the American Civil War, one that has taken form in the traditional medium of book and film and dominated our understanding of the character of slavery and freedom in the modern world. Slavery, in our view, must be understood as having no single determinative value, no one experience or effect that can be either pointed to or dismissed; instead, its refractive powers touched every aspect of society. Slavery and freedom each developed a spatial character in addition to, indeed in relationship to, a political, social, and economic structure. Both societies had established a particular footprint in the landscape. Our article seeks in its form to capture that spatiality and to represent its complexity and interrelatedness. If we are to show slavery's relationship to modernity and argue that it was pervasive, systemic, and spatially arranged, then the digital medium provides an essential means to make the argument. Digital publication, in our argument, is not merely convenient or innovative but intrinsic.

The electronic article has been intensely collaborative from the outset, both between the authors and among professional staff and research assistants at the University of Virginia and the Virginia Center for Digital History. Kimberly A. Tryka, Associate Director of the Center, applied her valuable expertise in XSL style sheets and transformations, creating the innovative Reading Record tool as well as helping develop the fundamental structure of the article. Her work on this article has been instrumental and critical to our effort. Benjamin Knowles of Octagon Multimedia Productions gladly gave us his time and graphic design talent and web expertise, working with us to design the interface for this work. Aaron Sheehan-Dean, now at the University of North Florida, worked on the GIS and SPSS data and offered his considerable expertise in Civil War history. Watson Jennison, now at the University of North Carolina, Greensboro, energetically investigated the newspapers and compiled content analysis of them. Steve Thompson, now at the University of Texas at Austin, helped develop the original GIS for Augusta County. We also especially thank our colleagues at the Corcoran Department of History at the University of Virginia for their helpful criticism of both our form and analysis in a draft version of this article at a department workshop. Lloyd Benson, John Unsworth, and Michael Holt carefully read several drafts of this article and offered written comments. We appreciate especially the thoughtful readers of the AHR for their wise and judicious reading of this piece in draft form. Finally, we would like to express our gratitude for Michael Grossberg's careful suggestions and patient support of our work and his leadership in bringing it to publication. We thank all these friends and colleagues for their invaluable help.
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Notes


4. The URL is [http://valley.vcdh.virginia.edu](http://valley.vcdh.virginia.edu). The Valley Project includes thousands of letters, tens of thousands of census entries, soldiers' service records, and newspaper articles. One of the purposes of the archive is to encourage students and other non-historians to write history for themselves with a capacious archive that permits people to make their own connections, to follow their own insights. But another is to permit professional historians to ask questions of greater specificity and precision than would be possible without having historical materials available in electronic form. That is what we attempt in our digital article. On the project, see William G. Thomas III, "In the Valley of the Shadow: Communities and History in the American Civil War," *Virginia Magazine of History and Biography* (September 1998), [http://jefferson.village.virginia.edu/vcdh/thomas.vmbh.html](http://jefferson.village.virginia.edu/vcdh/thomas.vmbh.html). For reviews and other analysis of the Valley Project, see Andrew McMichael, "The Historian, The Internet, and the Web: A Reassessment," *AHA Perspectives* (February 1998): 29–32; O'Malley and Rosenzweig, "Brave New World or Blind Alley?" 132–55; Rosenzweig, "Road to Xanadu," 78 pars., [journals/jah/88.2/rosenzweig.html](http://www.historycooperative.org/journals/ahr/108.5/thomas.html); Gary J. Kornblith, "Venturing into the Civil War, Virtually: A Review," *Journal of American History* 88 (June 2001): 145–51.

5. For recent interpretations using GIS, see Anne Kelly Knowles, ed., *Past Time, Past Place: GIS for History* (Redlands, Calif., 2002); and Knowles, ed., the special issue of *Social Science History* 24, no. 3 (Fall 2000).
http://muse.jhu.edu/journals/social_science_history/toc/ssh24.3.html.


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