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History & New Media: Designing History for the Web

Introduction

In recent months, historians and history departments have begun to appear on the Web. Historians have primarily used the Web as a delivery mechanism. These pages have furnished information about history departments—undergraduate and graduate programs, course listings, faculty pages, and so on—the odd syllabus with links to other Web sites, and archival history materials intended as resources for teaching and research. All of this is to the good. But historians (and a host of others) have forgotten, or perhaps never understood, two important considerations. First, designing for the Web is the process of designing within a technical environment and, second, the Web can also be used as content mechanism with all the interactivity that it implies.

Designing Within a Technical Environment

What does it mean to design within the Web's technical environment? In our Web dealings, we must take into account, both the constraints and the opportunities offered by a digital milieu. Constraints simply suggest the range of things that we cannot do or things that are not worth doing at this juncture. Although there are others, one of the greatest Web constraints is size, particularly when it comes to graphics. The larger the page (all of its constituent elements) the longer the download time and the more irritated the user. To balance the constraints, however, the Web offers opportunities. The Web, for example, permits inexpensive color publishing. Color illustrations that would be prohibitive in the print world are cheap. More important, the Web has the ability to respond to users' actions. While these advantages and disadvantages may appear self-evident, they suggest a host of Web design activities, and historians must be aware of all of these. As my co-author, Ben Dubrovsky, and I point out in *Creating and Designing Multimedia with Director*, multimedia projects are composed of four major areas of design, each requiring different thought processes.

Aesthetic Design Aesthetic design includes all visual and auditory aesthetic elements. Aesthetic designers create the visual look: the different graphical elements, the styles of digital movies, and the typography. They are also responsible for the styles and types of sound reinforcements, background music, and the appearance of any other collateral material associated with the project. For historians aesthetic design is problematic; most of us are not trained as artists or even very visually literate. We are text people. Nonetheless, we should develop an eye for some basic design principles so that, when we contract or "out source" work, we know what we are looking at and can communicate our desires effectively.

Informational Design The content delivered in the production must also be actively designed. Information has an inherent structure, and that structure must be understood and exploited in the design of a Web production. The information designer develops that structure and orders the content so that it will be appropriate for the audience. Historians have real expertise in this area. We have been doing informational design for years in writing papers and monographs and teaching others the skills to do the same. Historians must, however, be careful to differentiate between informational design and content.

Technical Design The technical design must reflect a deep understanding of the way different computing environments operate and inter-operate. The technical designer must construct an overall technical plan that can accomplish the goals of the product. This is a tough one for historians. While historians may have been exposed to various aesthetic skills, chances are that they have little or no opportunity to become wise in the ways of writing code. But again, histo-

rians can understand what is going on or should go on without becoming a computer programmer. There are also software products that reduce the need to know all of this stuff.

Multimedia Design Multimedia Web designers are responsible to the product itself. They must create the overall structure of the project, determine where to begin, where to go, and how to get there. They must be fluent in both the vocabulary and thought process of each of the other designers; develop assignments for them; listen to their feedback; continually reassess the direction of the production process; and communicate new and modified instructions to the other designers. They must be able to visualize the end product and orchestrate the construction process to realize the initial vision. They are, in short, the keepers of the vision. Again, historians possess real strengths in this area. Doing historical research has equipped us with the organizational skills to conceptualize a large project and set assignments for ourselves and others. What it has not done is prepared us well for the collaborative nature of multimedia design. Historians, by and large, work alone..

Each of these design areas must be represented by a "hat" at the production table. Each "hat" must have not only a deep understanding of his or her own area of expertise but also a sensitivity to the needs and strengths of the other areas of design. So, it is the responsibility of each designer to look toward the whole, understand the design process and each of the elements, and grasp how each component fits together as part of the larger project. On the one hand, given the financial and technical state of many university campuses today, many historians must wear most of the hats; on the other hand, historians are clever and managing complex haberdashery has always been our strong suit.

Designing the Process

Web production, besides being the science of design within a technical environment, is also the art of communicating within a technical medium. A Web site is but one of several potential delivery vehicles. The goal of each delivery mechanism is the same—meeting the communications needs within specified bounds. The place to start designing is at the end of the user experience. A user, the person with whom the historian wishes to communicate, comes to the Web with a certain amount of knowledge. He or she then spends time at the site and walks away with more knowledge. That difference—the amount of knowledge the user takes away—is the end product of the communication. If that Web site matches the initial communications goal, then the design was a success. If user walks away with something different than originally planned, the design did not succeed. The following are the initial steps necessary to undertaking a successful design process.

Define Goals The first step of any Web design process is to discover the communications goals of the production. What does the historian want the student, colleague, or casual surfer to know after participating in the communication that he or she didn't know before. Most historians will swear that they have already created their goals. But, chances are, the goals they outlined are not the communications goals. To discover the communications goals, we must finish the sentence, "After using the product, the user should..." Goals like, "We want to make a CD of Homer's Iliad," are not appropriate because they don't take into account the what's and why's of the user's experience. A more appropriate goal is: "After using our product, the audience will have a deeper understanding of Greek archaeology and the social structure reflected in the Iliad."

Discover Constraints The starting point for design is as blank as the writer's page. No real project, however, is without bounds. The good designer views constraints as positive, proactive design elements rather than as hindrances. Bounds not only define where we can't go but also delineate what paths we can take. Each of the major design areas (technical, aesthetic, and informational) will have their own constraints. The most important constraints to discover for all parties are those of audience, venue, and delivery vehicle. Who is being addressed, in what space are they being addressed, and on what platform? Other imperative constraints are budget and time frame. Explore too, however, ideas of tone, graphical requirements, cultural or language requirements, computer literacy of audience, any future plans for the product, and the amount of "seat" time available.

Prioritize the Constraints The next step is to prioritize the constraints. Determine which constraints will be most difficult to meet and which will be easiest. By addressing the constraints in order, from most to least difficult, we have the best chance at dealing with all the constraints. Imagine we are building a house in the Arctic. We wouldn't want to address a constraint of "maintaining constant temperature" without first addressing the constraint of "building a house in the Arctic." Oddly enough, Web design solutions often present themselves. Good designers construct tighter and tighter bounds around a problem and watch as the solution emerges. The most important bit of advice: Do not presuppose design solutions and never create answers. Seize on answers that reveal themselves through the design process.

"In the Valley of the Shadow: A Critique"

How does all this work? Let's take a look at a Web page, the "[Charles White: Eyewitness Account](#)" of John Brown's raid on Harpers Ferry from "In the Valley of the Shadow." "Valley of the Shadow" is a good candidate for a multimedia critique. It is extensive enough to warrant our study, has earned the attention of the profession, possesses enough content to be worth consideration, and has received funding. In short, "Valley of the Shadow" is fair game.

Let's take a first look. The page contains text and four illustrations: a picture of Charles White, a manuscript page of White's letter, including map of Harper's Ferry, a picture of White's church, a second, more detailed map of Harper's Ferry, and another graphic of the Harper's Ferry cityscape. Looks pretty straightforward, but let's take a closer look through the multiple lenses of Web design.

Aesthetic Design What's wrong here? First, the Web is a visual medium. There should be some design of some kind, something of visual interest. At his juncture, the page is monochrome, dense, and flat. Second, the graphics are too large, bereft of captions, and exhibit sloppy image editing. White's image takes up almost the entire space when the page first appears and seems disconnected from anything else on the page. Note the thin white line on the White portrait. This is a result of careless cropping. The manuscript pages are obviously scanned from a photocopy taken from a book. We can see the shading toward the spine. Tacky, tacky. The second map has a legend that refers to various locations on the map, but the user is simply invited to determine sites on the map from left to right. Since the map is not exactly clear, this is time-consuming and not altogether fulfilling task. The designer should have lettered the map for us. Something can be done about all of these. (see fig. 1)

In light of the Web's constraints on type, we can't expect too much in that department, but italics should be used sparingly because they are hard to read. Pixels on a computer monitor are square, and square pixels do not lend themselves to displaying diagonals; italic typefaces are mostly composed of diagonals. Sometimes there simply isn't any way around something like italics on the Web, but it might alert us to the fact that, perhaps, something like Adobe Acrobat might be a better authoring medium to preserve the nuances of the text and improve its clarity.

Technical Design The Charles White page is 1,057K or roughly 1MB and takes on average about five to seven minutes to download with a 28.8 modem on remote access. In short, the page size is six to ten times larger than it should be. Furthermore, the designers have not fully capitalized on HTML's capabilities. For example, text can be "run around" pictures to produce a more visually appealing and familiar appearance. Something must be done about this state of affairs, particularly the download time.

Informational Design The historical material is interesting and pertinent, and the introductory text places the primary documents in context. The material is also grouped together in a logical manner. People are interested in other people, so the White portrait adds to the page. The manuscript/map and map graphics' function is less apparent. Do we want students to experience reading a nineteenth manuscript? Do we want them to do something with the maps? These graphics are large and "expensive" in terms of download time, so there must be some reason for their inclusion. The photograph of White's church connects White with Harper's

Ferry, has human interest, and bears a relationship to the reference in the letter. Finally, the cityscape picture seems to bear no relationship to anything on the page. It's attractive, but what does it add? All of these questions need answers.

Multimedia Design The project seems to have ignored the idea of conceptualizing the project as whole and neglected the user. This is most evident in the navigational structure of the project. Where are we in the larger scheme of the project when we get to the Charles White page? We might have arrived at the "Charles White: Eyewitness Account" page from anywhere on the Web, or we may be forgotten in the hurley-burley of exploration where we are in the project itself. Are there more eyewitness accounts? How do we get there easily and quickly? Alas, the project seems to have forgotten the user. What is the user supposed to do with the material? Read it on a computer monitor? Print out the material for use in class discussion or paper? Take notes?

Can This Page Be Saved?

While this makeover, "[Charles White: Eyewitness Account 2](#)" makes no claims for sophistication, it does attempt to address the problems outlined previously and show how cognizance of design issues can make a significant difference in how history is presented on the Web. I have attempted to retain the "look and feel" of the page as it exists presently and refrained from any radical revisions or technical frippery. Addressing some of the larger issues—the overarching goal of the project, for example—are beyond the scope of this paper. As a result, some of the issues are addressed fully, others in part, and still others not at all.

The first step involved addressing the problems associated with the most difficult constraint: reducing the large size of the page and its concomitant long download time while, at the same time, maintaining the both the graphical and textual content. The second step involved doing something about the informational structure and navigation. The third problem had to do with tidying up the images and integrating them more fully into the text. While these appear to be discrete problems, they are interrelated; solving a problem in technical design, for example, often suggests a solution to an aesthetic design problem.

Designing for the Next Level

There are, I imagine, some in the audience who thinking at this moment, "All right, smarty-pants, now that you've so roundly criticized "In the Valley of Shadow," what do you have to show for yourself." What I want to show is an example of how the Web might be used as content system as opposed to a delivery mechanism.

In "The Three-Ring Circuit: Technologies, Resources, Transformations," Randy Bass writes:

New technologies are powerful tools for pursuing a distribution of responsibility for making knowledge because they are interactive media. And interactive media are distributive media. That is, unlike broadcast media (television, radio) where one point of transmission sends a signal to multiple points of reception (and those points passively receive it), interactive media, such as the Internet and the Web, E-mail, and electronic discussion lists are distributive media. In interactive media, every point of reception is a potential point of transmission. Therefore, the ability to contribute to and transform the message is shared, or distributed along the network.¹

In this statement, Bass has deftly articulated the idea of the Web as a content medium, a medium in which people, in our case, students respond, make some kind of contribution to, or are actively engaged in the material. But how do we make the new technologies work for us and how do we implement this idea of interactivity? I would like to take the remainder of the paper

¹ <http://www.georgetown.edu/crossroads/guide/3ring.html>

(and my time) to suggest how this might be realized via the Web. Be forewarned: this discussion leaves the realm of simple Web pages and moves frankly to the bleeding edge. I make no apologies for the inclusion of what some historians are fond of calling "glitz" or technical terminology. It is this "glitz" that furnishes the interactive apparatus critical to student engagement.

The Problem Bass rightly perceives, just as multimedia practitioners do, that the technology is not important. It is far more crucial to think first. In using the Web as a delivery conduit, we think about what—what materials to present; in using Web as an interactive content medium, we think about how—how will I get students to engage the material. Bass sums this up in a series of questions that are analogous to the multimedia design process outlined earlier and asks:

- What am I doing now that I'd like to do better?
- What pedagogical problems would I like to solve?
- What do I wish students did more of or differently?²

I will add the following to the list:

- How can my job be made easier?

I tackled a problem familiar to most historians. My students come to class having read the material but not really. This is especially true when they confront a primary source document. They usually fail to have a decent idea of something as elementary as the basic narrative, a sense of the evidence, an appreciation of the significant detail, and an idea what the document contributes to discussion of a larger historical question. So, class becomes a matter of leading the students through the basics. Not all of this bad; this process is at the heart of education. What if, I wondered, students could get a leg up on this process? I have often imagined being by their sides, saying, "Look, did you see this? What do think is important about this?" or giving them hints, "You might not be aware of this, but such-and-such was the case. How do think this affected what was going on in the document?" The result of trying to answer these questions is a Web site, "Murder on Smutty Nose Island." Let's take a look at the prototype in terms of multimedia design, beginning with informational design.

Informational Design "Murder on Smutty Nose Island" is based on a core document, the 1873 trial transcript involving a double ax murder. I elected to divide the transcript by witness and further by legal examination process. Because the document is fairly long, I wanted to have students be able to move easily among the testimonies. This decision influenced the technical design of the project and its use of frames. (Some Web designers have a marked aversion to frames, viewing them as ugly and limiting. Nonetheless, I wanted the table of contents to be handy.) Because spatial arrangements are important, the project includes both geographical and building maps to facilitate understanding these relationships. In short, the information dictated the structure of the site.

The document also dictated the interactive elements of the project. First, I wanted the students to have thought about the material. How can I guarantee that they do? Having them write goes some distance toward priming the pump, so I included a question after each testimony to be answered in advance of class and e-mailed to me. In doing so, I will have an idea of who is thinking what, the quality of the thought, and a means to begin the discussion by referring to the responses. Second, as the instructor, I wanted to be in a position where I could impart hints or add to the material, so I needed to be "present" either as text, a visual, or a voice. Last but not least, I wanted to include some sort of assessment—not so much of students' performance but of their response to the project. This last task involved setting up both a quantitative and qualitative instrument that would fit on a single, short page at intervals throughout the project.

² *ibid.*

Aesthetic Design I wanted a nineteenth century look, so I used graphics from contemporary accounts in the banner, a textured background, and edited the images to conform to this style. At this juncture, I may well make some changes in the banner font. It is interesting and consistent with the content, but it is a bit difficult to read at its present size.

Technical Design In addition to the perennial hardship of download time, "Murder on Smutty Nose Island" presented several technical problems: making the maps legible within the space constraints of the page, getting the instructor into the page, and setting up the scripts for the student responses. Setting up the scripts for the e-mail questions is probably the easiest and must be done in consultation with the university Web mistress in any case, so that job (thankfully) can be postponed. The first task, and the next in difficulty, involved some effort. Maps must have sufficient detail to be worthwhile, be large enough to be legible, and be integrated into the rest of the material on the page. Web pages are usually do not have space enough for an integrated map. To solve this problem, I created maps with Macromedia Freehand so that I could utilize its zoom feature. The last problem, putting the instructor on the page, proved to be most intractable. Text seemed to be a rather traditional and uninteresting way of accomplishing this legerdemain, and I wanted to move beyond text in any case. Using digital video seemed to offer a possibility but, at the moment, even streaming digital video is slow. In the end, I decided on using a Macromedia Director Shockwave movie and audio to do voice-over. A voice-over seemed sufficient to achieve the sense of personality, surprise, and interactivity that I wanted.

Final Words

So what's the point of all this? Although my bias may be apparent, historians not only have the best content but they also have mastery of it. Sex, violence, tears, laughter, politics—we have it all, and we know what to do with it. We know where the most interesting documents and pictures are, and we know how to make them interesting and explanatory. Except for a few notable exceptions, however, we are not doing much of anything with it in the digital world. Historians' efforts, for the most part, have been directed toward "putting stuff on the Web" or, more accurately, using the Web as means of delivering materials. Employing the Web in this way isn't all bad, it does pose a danger. Merely providing historical materials in this way lends itself to very traditional teaching strategies. The digital syllabus replaces the paper syllabus, the digital lecture replaces the traditional lecture, and so on. We merely exchange atoms for bits by thinking of the Web as fancy distribution service.

There are probably some of you who are thinking: "I don't have time to learn all this stuff. Besides, my university doesn't provide the equipment, the training, or rewards for this stuff. Why should I bother?" With the possible exception of people who bring carry-on bags the size of small ponies onto planes, I am most tired of whining historians—those who complain about time and lack of institutional support. The facts of the matter are, first, historians must make time to become conversant and skilled in the digital world or leave history to the Discovery Channel folks and, second, historians, in most instances, cannot wait for their administrations to rush from their offices like the modern equivalents of ladies-bountiful with baskets of hardware and software. Historians will have to invest their personal capital and time to get on with the program. Happily enough, neither the financial investment nor the time commitment are not nearly so great today as they were in the past.

The revision of the "Valley of the Shadow," for example, used two software programs exclusively—Adobe PageMill and Adobe Photoshop and a handy Photoshop plug-in, PhotoGif—for a total software cost of around \$350 (educational discount) and was developed entirely on a venerable Macintosh Quadra 840AV—street value \$800. Any historian worth his or her salt can winkle \$1,100 out of a university administration or manage the sum from personal resources. The same arguments can be made for time. Learning to use PageMill takes a weekend. Learning Photoshop is a different story but, since very few can master Photoshop entirely, the best strategy is learning only what's necessary in a weekend. Learning to obtain decent scans takes an afternoon. Taken together, a historian should be able to create a clean, crisp Web site in a week. The bottom line is: if you can read, you can build credible, fairly sophisticated Web stuff.

So, let's stop the kvetching and get on with it. As for the lack of rewards, I can make no good argument except to lay claim to the moral high ground and reiterate that the idea of the university is as the place where we create new knowledge and explore innovative ways of integrating our discoveries into our teaching. This is what universities are for and explains why I am there. Although some boast about the fact that their students know more than they do about the Web and so on, I plan on staying a good distance ahead of them in digital matters. It is, after all, my job—this business of creating new knowledge.

Bibliography

Web Design There are a host of Web design books on the market, some better than others. These appear to be the most informative and effective for both the novice and experienced Web worker. Designing for the Web involves dealing with a number of complex issues, but Lynda Weinman's <*designing web graphics*> (Indianapolis, IN: New Riders Publishing, 1996) covers all the bases. While the book's focus is on graphic design for the Web, it discusses several topics that are pertinent to the technical side of Web production, especially cross-platform issues and palettes. The CD also contains excellent utilities for converting colors and making a cross-platform palette. Weinman also has two newer volumes, <*deconstructing web graphics*> and, with Bruce Heavin, <*coloring web graphics*> (Indianapolis, IN: New Riders Publishing, 1996). The first volume provides an in-depth analysis of several, successful commercial sites in a variety of genres with an eye to discussing related Web issues. The second focuses on dealing with the perennial and vexing problem of color and image formats for the Web and includes an accompanying CD stocked with color palettes and swatches. Crystal Waters' *Web Concept & Design: A Comprehensive Guide for Creating Effective Web Sites* (Indianapolis, IN: New Riders Publishing, 1996) is also excellent, providing an array of useful advice in addition to warnings about potentially troublesome Web strategies. One of the best techniques for learning more about Web design is exploring the Web itself. Pay attention to the commercial sites rather than the academic sites. The former, designed by professionals, exhibit more finesse and demonstrate the application of browser add-ons more effectively than academic venues.

Multimedia Many of the books written about multimedia revolve around learning to use a particular software tool. Many fewer talk about the design and practice of multimedia. Although this is not an exhaustive list, these books offer the most informative discussions. For those who do not come from a design background, Robin Williams' *The Non-Designer's Design Book* (Berkeley, CA: Peachpit Press, Inc., 1994) provides a good grounding in the basics. Although the text focuses on print design, its advice is generally (keeping in mind some caveats discussed elsewhere) applicable to multimedia design. More firmly aimed at multimedia people is Ray Kristof's and Amy Satran's *Interactivity by Design* (Mountain View, CA: Adobe Press, 1995). The authors take the reader through the phases of multimedia production and its topical areas. Especially helpful are the comparative illustrations, showing how designs evolve or how particular design issues might be resolved. Lisa Lopuck's *Designing Multimedia* (Berkeley, CA: Peachpit Press, 1996) takes a slightly different tack. Although she looks at the process of multimedia design process, her text is most helpful in providing solutions for common technical problems. Also notable is the book's lavish color illustration that provide examples from commercial products to demonstrate her arguments. Finally, Clement Mok's *Designing Business* (San Jose, CA: Adobe Press, 1996) tackles an array of design issues. Grounded in communications theory, the book is strongest when it discusses information and interactivity design. Accompanied by an elegant CD illustrating various projects—including Web sites, the book demonstrates how a thoroughgoing philosophy can inform, strengthen, and make a success of multimedia. Last but not least, the book's solid bibliography includes the essential reading for the digital age.

Imaging Images are important elements in Web design, and know how to edit and manipulate images can add much to a Web site or page. Although there are fewer books devoted to Xres and other image editing programs than to Photoshop, many of the techniques outlined in Photoshop books can be implemented in other image editors with similar results. Although it is not limited to Photoshop, *Design Essentials*, 2nd edition (Mountain View, CA: Adobe Press, 1995)

provides the best coverage of basic imaging techniques and the means to make the visual aspect of your multimedia project dazzling. The cookbook format and step-by-step instructions lead the reader through successful completion of the exercises. *Imaging Essentials* (Mountain View, CA: Adobe Press, 1993) casts its net a bit wider still and includes techniques for several of the Adobe products in addition to Photoshop. Like its companion volume, the textbook's instructions are clear and unambiguous. Richer in the number of techniques covered but less clear in its steps and explanations is the *The Photoshop 5 Wow Book* (Berkeley, CA, Peachpit Press, 1999) by Linnea Dayton and Jack Davis. More advanced than the Adobe volumes, the *Wow* book explores sophisticated imaging techniques that can be adapted to multimedia. Heavily illustrated, the book includes a useful CD of freebies and testdrives. Type is important in Web page construction, and Photoshop and its filters can produce a number of interesting and effective text treatments. *Photoshop Type Magic* by David Lai and Greg Simsic (Indianapolis, IN: Hayden Books, 1995) furnishes a good foundation in various type techniques. *Type Magic's* succeeding volumes are also useful.