

Making Revisions Hyper-Visible

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ABSTRACT

What should a revised edition of a hypertext be? How might revising a hypertext differ from reissuing a printed book? This essay suggests a revision process that is self-reflexive and explicitly made visible, taking advantage of the ability of hypertext to expand the "margins" of a document in new directions. Where the issues are complex enough, the process of revision should be part of what is presented, not just a machine rumbling in the background that issues in a separate product.

Categories and Subject Descriptors

H.5.4 Hypertext/Hypermedia, Architecture, Navigation, Theory, User Issues

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Human Factors, Standardization, Theory

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Hypertext, writing, revising, links, publication

1. INTRODUCTION

The story goes that Plato revised his masterwork, *The Republic*, seventy-seven times. After Immanuel Kant's ten-year effort that led to the publication of the *Critique of Pure Reason* [8] in 1781, Kant published a revised edition six years later that seriously changed some of the core arguments of the book. Poets such as Walt Whitman, W. H. Auden [1], and others, revised their poems when they appeared in subsequent editions.

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A recent dialogue between two contemporary poets discussed the motives for revising poems:

Donald Hall: Some writers hesitate to revise older work. When you revise an old poem, what is the relationship for you between the writer you were, say, twenty years ago, and the writer you are now?

Martin Lammon: I am the irritable elder correcting the young man's mistakes, glad the young man is not around to bite my head off. When I revise an old poem, I'm removing error; I'm substituting not new invention but something that will do: invisible mending. [4]

The philosopher David Kaplan at UCLA once published an article criticizing another article by a philosopher at UCLA named David Kaplan: "Kaplan said XYZ but Kaplan's argument was mistaken . . .". More commonly, revisions are announced in the first person: "In an earlier book or article I claimed that XYZ but I now see that PQR is a better approach." Sometimes such corrections appear in the text with footnotes describing the earlier view, or the earlier text is supplemented with a footnote about "what I would now say".

Revision is a normal part of publication and republication. I might revise my poems because the word choice now seems wrong, or revise my novel to improve the characterization, or revise my argumentative text because, like Kant, I thought I had found a better argument, or because, like Plato, I wanted to improve the style and extend the argument, or because, like Auden with some of his more political poems, external circumstances had changed in ways that led people to misread the meaning of the work [12]. I might want to add new examples and applications, or correct mistakes of fact or logic or style. Perhaps I predicted something that didn't happen when technology, or business, or politics, went in a direction that I had not foreseen.

An artist might want to revise a play to accommodate different actors (Shakespeare's revisions, and those of different directors of his plays), or a piece of music to suit different singers (Mozart's *Don Giovanni*). A film director might want to get the film's original intent better presented (*Blade Runner*). In these cases, typically both the old and the new versions stay available, and film DVDs may present a meta-discussion of the revisions in a special sound track. Some

books do the same in an introduction or appendix or footnotes.

1. REVISING BOOKS

For books, most of the time revisions appear in a second edition that replaces the first in commerce, though the earlier version often remains in libraries. Readers are often better served by keeping both versions accessible.

W. H. Auden revised many of his previously published poems when they appeared in volumes of his *Collected Poems*. But the earlier versions remained available in small magazines and books. So the revision allowed comparisons rather than fully replacing the earlier versions.

When Kant published the second edition of his *Critique*, he intended it to replace the first edition. But given the complexities of Kant's arguments, subsequent philosophers and scholars wanted both available. Now standard editions of Kant show in parallel columns both versions of significant sections that Kant rewrote.

When the philosopher Hegel died unexpectedly at age 61, his students took his lecture notes and student transcripts of his lectures and amalgamated them into texts that presented his ideas systematically [5]. Those lectures have always been more accessible than the austere books Hegel himself published. However, in composing the volumes of lectures, Hegel's students mashed together texts and lines of thought from classes as much as ten years apart. Now, scholars have been seeking out what remains of those original lecture transcripts, trying to understand the development of Hegel's thought.

While it can be important to scholars to study changes in different versions of literary works, it may be even more important to keep available different versions of argumentative texts. Was Kant right to abandon certain concepts and lines of argument in his second edition? Perhaps Hegel in his early years as a lecturer, before he became so established in Berlin, had ideas about politics that would be more helpful to us than his later ideas? Some revisions of exposition and argument result from more mature consideration, or changed context. Some, though, may result from a failure of nerve or a dulling of the sharp edges of an insight. So it is good to have both old and new versions available.

But while printed texts may be abundant, print publication is still ruled by a scarcity economy. The new edition spreads, while the old edition gets harder and harder to find unless special efforts are made. Even if the printed older version is in a library somewhere, it is not here, now, when we want to compare the old and the new.

1. REVISING HYPERTEXTS

1.1 General Considerations

Hypertext publication is at least in principle ruled by an economy of abundance. There is the continual expansion of the Web, and there is Ted Nelson's principle that every version submitted should remain always accessible in the archive at any time.

The Web, in its present form does not live up to many of Nelson's ideals, as he will repeatedly tell you, but it does

manage to make its contents widely accessible. On the other hand, those who manage web sites do not try to keep older versions around. Third parties such as the Wayback machine and to some extent Google caches may do so, but there is no systematic way to be sure that earlier versions persist.

It would be good if a revised hypertext contained not just references and links to an earlier version, but meta-discussion about the process of revision itself, and how and why the text had been changed. This kind of discussion would be out of place in literary works, but for expository/argumentative works it would be taking advantage of the ability of hypertext to change the dimensionality of a discussion and add self-reflection.

For the most part, literary hypertexts (novels, poems, multi-media works, and works in new genres) would not benefit from explicit internal links to older versions, nor would they be helped by having their new portions specially highlighted. Michael Joyce's novella *afternoon* [7] was the first literary hypertext to achieve wide notice. Stuart Moulthrop's novel *Victory Garden* [11] followed soon after, along with Shelley Jackson's *Patchwork Girl* [6]. John Cayley has composed exciting intricately structured multi-media poems and literary works using Hypercard and later Flash, as in *riverisland* [3]. All these texts contain complex link structures that create strong literary effects. *afternoon* provides no visual map of the structure; the reader must seek out individual words that will yield new pieces of the story. A revision of *afternoon* would be essentially invisible; the work's structure is sufficiently labyrinthine that readers would see any added section or path as just something they had missed before. If the new parts were highlighted by typography or special links, the continuity of the reader's experience would be disrupted. This is also the case with *Victory Garden* and *Patchwork Girl*, though they have maps where additions could be indicated. Cayley's works are already complex visually and textually; it would not help the literary effects to interrupt their experience by calling attention to revisions. Those who wanted to trace the development of the work would likely be scholars who could compare versions actively, and for that it would be good to have an external listing of the versions rather than internal links to earlier texts.

On the other hand, argumentative and expository works would benefit from visible revision. Suppose such a work has been in circulation, and people have been convinced by its arguments, or disagreed with them, or at least have reacted to and referred to them. If then a revision appeared, it would be helpful for its reception and understanding to see where and why the author had altered the text or changed its meaning or the conclusions or applications it draws. In what follows I discuss some techniques for making the process of revision visible in hypertexts on and off the Web.

For example, another Eastgate text, David Kolb's *Socrates in the Labyrinth* [9], is all exposition and argument and makes claims about whether argumentative hypertext is useful and how it might be written. The text has been quoted and cited. If Kolb wanted to produce a second edition in which he changed his opinions and arguments, or expanded and applied them in new ways, it would be helpful for readers familiar with the first edition to know where the changes were located. If Kolb had come to doubt that some of his arguments were conclusive, or had come to feel that changed circumstances invalidated earlier analyses, it would be good if that rationale were

signaled to the readers, whether or not they had seen the earlier edition. So it would help if the revisions and their rationale were made visible as such.

1.1 Strategies for Visible Revisions

So the question arises whether there might be hypertextual ways of assuring that the old is accessible along with the new. The obvious answer is to link them. But this answer is vague. How could such links be implemented?

The simplest procedure would be to maintain both versions and put a link in each that leads to the other. In Ted Nelson's ideal hypertext scheme, both versions would be available and could be actively compared. Nelson has developed tools for parallel presentation of related texts. This is less likely on the Web, where comparing two versions would be confusing in a browser window, and a parallel presentation would be difficult though not impossible.

Keeping the two versions intact but connected by a link in each version resembles the way two separate volumes in a library might be linked by a footnote in the later edition and a reference in the library catalog. For a complex web site, maintaining two separate versions with links between them would confuse readers arriving (or trying to arrive) from search engine lists. Also, simply providing access to both versions leaves comparison up to the reader, and gives no insight into what the author thinks are significant changes in the argument, and why they were made.

Rather than just link two separate versions, it would be better to have the new replace the old but also include enough of the old to clarify changes and allow meta-discussion about the rationale for the revisions. Hypertexts are not so separate as volumes in a library. An old version can be brought "inside" a new one once there are enough links that readers can move back and forth from one to the other. But what kind of links?

More capable hypertext systems allow more kinds of links. For example, off the Web, Eastgate Systems publishes hypertexts on disk containing Storyspace files presented by reader software included on the disk. These allow two-way links, conditional links, and other facilities that would make it easier to create a complex new version that self-consciously related to the old. For instance, conditional links could route readers from the old to the new, or make sure that the revision was seen before (or after) the earlier text, or that the meta-discussion stayed visible. Links from one anchor could montage multiple windows showing old, new, and meta-discussion of the changes. Spatial maps could be embellished with graphical distinctions among old, new, and meta-discussions.

On the other hand, republishing such works on disk would not make them available on the Web or to search engines. If the Eastgate hypertexts were to be taken from disks and put on the web, either the web version would be flatter and less complex, or it would have to be designed using Flash or Director, or perhaps EMCAScript or a server-side Rails process.

Whatever presentation mode is chosen, how are the versions to relate?

I am not speaking about merely indicating changes to the wording, as can be done with Word's "track changes" mode. A step in the right direction is found in Wiki lists of edits. These are not presented in the text but are accessible to readers, who

can also compare early and late versions. Some of the edits are accompanied by brief comments about why they were made. However, I am suggesting that the entire process of revision be made visible in the text, including the changes as well as meta-discussion on why they were made, plus links to parallel changes elsewhere in the text. How might this be done?

If the goal is to make the revisions effective but also visible as revisions, a simple scheme would be to make minimal changes to the hypertext structure. Keep the original text and links of the old version, and make changes only by graphically distinctive additions to the text of individual nodes. This would have the benefit of tying changes directly to older text.

For example, some bloggers discourage changing blog posts once they have been published. People may have added comments, or linked to the post, and readers should be able to see the original version that caused the reactions. So these bloggers do revisions either as separate new posts with links back to the old version, or as "Updates" added at the end of older posts. So we might imagine an expository/argumentative hypertext like *Socrates* reissued with its original text and link structure intact, but with important nodes containing "updates" added at the end of the node's text.

This would not be a particularly good solution, since if new arguments and points of view were being presented, the updates added to the original nodes would beg to have links among themselves. Also, the author would likely want to add new nodes presenting the new views more fully than cutting them up as a series of additions to previous nodes. This would introduce new links. Even if the new links might start out from old nodes, there would soon be a larger and more complex structure than the old version.

It seems inevitable, then, that a revision would add new textual dimensions, nodes and links. It might be good to distinguish old from new, and perhaps both from meta-discussions, by typographical style, link types, colors, or other means depending on the presentation system. It would also be useful to create one or more index nodes listing and linking to significant changes in the text. Web hypertexts with navigation bars provide an easy opportunity to add such references.

A related strategy might be to have software that possessed a textual history function after the fashion of VKB's spatial history, or some version of stretchtext. After reading a node the reader could regress the text to earlier version(s). While helpful, such a facility would not provide direct visual comparison nor highlight meta-discussions of the reasons for or the import of the revisions.

1.1 Author(s) and Editor(s)

Introducing meta-discussions about the revision raises the issue of authorship. Are revisions by a single author an undue assertion of authorial power that is out of place in the age of Wikis and linked blogs? Ongoing multiple authorship is not practical in printed texts that do not change, but it is possible on the Web. Hypertext was supposed to empower the reader. Then maybe instead of a single-author revision, the process of revising a text like *Socrates* should be opened up to other writers?

The quick answer to this question would be that "the wisdom of the crowd" works best to collect information or to

amalgamate preferences. But for an argumentative text, even with seventy-seven revisions no crowd has produced a *Republic*. Nor is one likely to produce a work like Kant's *Critique* that undermines so many accepted methods and proposes a radical new approach to core problems it redefines in unexpected ways. (See [10] for a discussion of the frequent leveling effects of group authorship.)

It would be a bad idea to let unlimited crowds attempt to revise a long complex hypertext that was trying to make arguments for its conclusions. On the other had, it might be good to let a limited panel of commentators or colleagues be involved in a major revision, putting their comments and author's reactions into the text. Some web journals work towards this. But even in such a case the original author would retain a privilege because the discussion would much of the time center around that author's ideas and intentions. In addition, there are the practical difficulties highlighted by Mark Bernstein's objections to allowing comments on blogs and web sites [2].

If multiple authors were involved in a revision process, the result might borrow from structures and mechanisms found in the scholarly cross-reference schemes developed by Simon Buckingham Shum and others in the UK. However, the hypertext presentation of the underlying relations would be a separate issue. (See [13] for examples.)

A related question might be whether making revision visible implies that hypertexts should also make their initial editing visible, as Word documents can do. But even Ted Nelson never said that every one of the dozens of versions of this essay before it was submitted should be preserved. Initial editing is not a process that needs to be visible, since it comes before there is any argument presented for people to react and look back to. Of course the distinction between initial editing and revision gets blurred, especially on a Web site that is under constant revision. But we can make a rough distinction between before and after the first public presentation of an argument or exposition.

The question of single versus multiple authorship is not the main issue. Having multiple voices could be useful to introduce comment and response and show revision in process. But the process still needs to have good hypertextual form, and that is the issue here.

1.2 Why Bother?

Why bother with such a complexity of revision and meta-discussion? What good can it do? In argumentative texts it can do a great deal. The availability of Kant's two versions and their visual comparison in two columns on a printed page has made an enormous difference both to scholarship and as a stimulus to thought. If we could compare some of Plato's earlier versions we might understand his enigmatic texts better. Making the process of revision visible in an argumentative hypertext allows more precise argumentation. It also functions as a form of persuasion: "You see, I'm being responsible and self-critical." On the other hand it also

increases the vulnerability of the author and the product. The little man behind the curtain is revealed. As an author I could be making bad changes, or good changes for bad reasons. Or the process could lead both author and the reader to new thoughts. There is more chance to find insight, and more opportunity for criticism. The shared project of thinking things out then has more to work with.

2. ACKNOWLEDGMENTS

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