

Fixed or Fluid? Document Stability and New Media

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ABSTRACT

One of the crucial properties of documents through the ages has been their fixity. The ability to mark surfaces in relatively stable ways has made it possible for people distributed across space and time to see the same images and thereby to have access to the same meanings or communicative intent. Today, however, with the increasing use of digital technologies, it is often asserted that we are moving from the *fixed* world of paper documents to the *fluid* world of digital documents. In this paper I challenge this assertion, arguing instead that all documents, regardless of medium, are fixed *and* fluid. Thus, although paper documents do fix aspects of communication, they do (and must) also change; and although digital documents are easily changeable, they must also be capable of remaining fixed. I make use of this analysis in two ways: first, to examine the fixity and fluidity of hypertext; and second, to critique Bolter's argument in *Writing Space* concerning the movement from "fixed to fluid."

KEYWORDS: hypertext, documents, fixity, fluidity.

1 INTRODUCTION

One of the crucial properties of documents through the ages has been their fixity. The ability to mark surfaces in relatively stable ways has made it possible for people distributed across space and time to see the same¹ images

¹I have resisted the temptation to write "the same" in quotes throughout this paper. The temptation comes from the desire to flag sameness as an important notion, one closely related to fixity. Further discussion of sameness can be found in [12, 13].

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and thereby to have access to the same meanings or communicative intent. Today, however, new media and document technologies are being introduced which seem to challenge earlier assumptions of fixity. The ease of editing digital documents, for example, means that they can be, and often are, quickly changed. And print-on-demand documents customized for a single reader, interactive documents transformed with each use, and hypertext webs navigated differently by different readers all seem to challenge the assumption that readers will see the same thing.

These observations have led many people to assert that we are moving from the *fixed* world of paper documents to the *fluid* world of digital documents. In his book, *Writing Space* [4], Jay David Bolter has offered one of the most extensive articulations of this position, a position I will challenge in this paper. I will argue instead that all documents, regardless of medium, are fixed *and* fluid. Thus, although paper documents do fix aspects of communication, they do (and must) also change; and although digital documents are easily changeable, they must also be capable of remaining fixed. Indeed, part of the social and technical work in the decades ahead will be to figure out how to provide the appropriate measure of fixity in the digital domain. In making this case, I hope to deepen our understanding of what documents are and how they work, to see more clearly what is changing and what is not as digital technologies are increasingly available, and to clarify how developments in hypertext fit into this pattern.

The paper is organized as follows: In the next section I present a simple framework for talking about documents. In section 3 I examine the argument that we are moving "from fixed to fluid," and in section 4 I lay out an alternative account. In section 5 I briefly apply this analysis to the case of hypertext. I conclude in section 6 by spelling out and critiquing the main argument of Bolter's book, an argument that includes, but is not limited to, his position on fixity and fluidity.

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2 A FRAMEWORK FOR DOCUMENTS

As a broad framework for approaching this subject, it is useful to distinguish three perspectives from which documents can be viewed: as *artifacts*, in relation to *technology*, and as embedded in *work*²:

- *Artifacts*: To approach documents from this perspective is to focus on documents themselves — as physical and social artifacts.
- *Technology*: A second perspective is concerned with the technologies by which documents are created, manipulated, distributed, and so on. Pencil and paper, typewriters, staples, workstations, printers, text editing and graphics software, networks — these are all technologies for creating and working with documents.
- *Work*: The third perspective brings people and the work they are doing into the picture. Because documents are ultimately social artifacts, they must be understood with respect to their use — in relation to the human practices and institutions in which they are embedded.

One further crucial notion is that of genre [5, 28], which helps to integrate these three perspectives. The central observation is that documents come to us not as isolated artifacts but as instances of recognizable social types or genres — e.g. as novels, packing receipts, shopping lists, journal articles, and so on. These types, typically arising out of a particular constellation of technologies (e.g. the newspaper from press and paper), classify documents primarily according to their purpose. That is, each genre brings together a particular form with a particular set of functions or roles; indeed it allows us, to a large measure, to recognize the intended purpose and institutional role of a document from the form alone and thereby gives us a context for interpretation. This is a highly efficient way of conveying a great deal of information. Thus, one does not need a user manual to know how to read a newspaper. An understanding of the relationship between size of headline or placement on the page and importance of article, the ability to differentiate the rhetoric of a front page story from that of an op-ed article, an understanding of the relationship(s) between the stories and the various institutions, such as the news gathering agencies, associated with them — all this is part of the tacit background shared by literate members of the culture.

²In developing this framework, I have borrowed heavily from JoAnne Yates' book, *Control Through Communication* [27], in which she shows how the rise of the American corporation involved developments in three interrelated spheres: management practice and organization, communication technology, and document genres.

3 FROM FIXED TO FLUID?

Documents have arisen, in my sense, in response to a basic human need — to create stabilities in the midst of an ever changing world. Their crucial, indeed defining, characteristic is the ability to fix meaningful marks in a stable medium — to fix form as a means of fixing content. This has enabled two very powerful kinds of fixity. One is the ability of a single artifact to remain the same over time (call this invariance), thereby carrying the same message to people distributed in space and time. The other is the ability to create multiple artifacts, copies, all of which are the same at a particular point in time (call this replicability). Together these permit, in principle, the distribution of an unlimited set of identical artifacts, all capable of preserving their form and thereby conveying their content over time.

The claim is now being made, however, that fixity will soon be a thing of the past, a property that will dissolve with the presumed disintegration of our paper archives. The products of digital manipulation, it is said, are fluid rather than fixed.³ Indeed, there are a number of contrastive pairs by which paper and digital artifacts are often characterized:

Paper	Digital
stable	unstable
permanent	impermanent
static	dynamic
inactive	active, interactive
fixed, rigid	fluid, malleable, changeable

If the claim is true, then the new digital products cannot even be considered documents — so long, at least, as we take fixity as a defining characteristic. But the claim arises from a misperception, from a misunderstanding of the nature of documents, both on paper and in digital form.

It is undeniable that paper documents provide a measure of fixity. But what our earlier account failed to acknowledge is that paper documents do, and must, also change; they are fluid as well as fixed. Indeed, looking at documents by genre, we can see that each genre has a characteristic *rhythm of fixity and fluidity* — books, memos, and shopping lists are all subject to change at different rates and in different ways.

³Many statements to this effect can be found in Bolter — for example: “[e]lectronic writing emphasizes the impermanence and changeability of text” (p. 3); “. . . electronic writing is fluid and dynamic to a greater degree than any previous technique” (p. 4); “[t]he vanishing of the fixed text” (p. 8); “[e]lectronic text is the first text in which the elements of meaning, of structure, and of visual display are fundamentally unstable” (p. 31); “[e]lectronic text is, like an oral text, dynamic” (p. 59); “being open and open-ended is precisely the quality that the computer lends to all writing” (p. 121).

Consider what happens with a memo. The author creates a master copy on paper and (let us say) photocopies it for distribution. The copies, initially all the same, travel to their recipients. At the start, then, the fixity of these copies means that all recipients will be receiving the same message — a message that doesn't change as it travels (invariance) and that is the same in all copies (replicability). But it is not uncommon for one of the recipients to further annotate his copy of the memo, to make further copies of his annotated version and then to distribute these. At this point the original memo has been changed, and the new copies are different from the version distributed in the first round. This process of annotation and redistribution can go on indefinitely, with alternating periods of fixity and fluidity.

It is also undeniable that digital documents are easily changed, as the "fixed to fluid" claim asserts. We are all familiar on a daily basis with the ease in modifying digitally represented text. But this fluidity or mutability in no way denies or opposes fixity. The very notion of editing realized by current text and graphics editors is based on fixity, for when one edits a document, one changes only and exactly those portions one wants to change, and the rest remains unchanged (fixed). While fixity is thus already achievable for short periods of time, we do not yet know how to insure the long-term survival of digitally represented documents, given the rate at which storage media and encoding standards have been changing.

4 FIXED AND FLUID

The conclusion is that all documents, regardless of technology, are fixed *and* fluid — fixed at certain times and fluid at others. Indeed, they exist in perpetual tension between these two poles — fixing content for periods of time to serve particular human needs, and changing as necessary to remain in synch with the changing circumstances of the world.

Returning to the framework of section 2, we might say that documents are realized through certain *technologies of fixity*. These technologies are applied in the service of work that people are doing, the work determining *what* is to be fixed, and for what purposes. Documents, we might say, provide fixity for a purpose. But fixity is not forever, and the rate at which documents change and the ways in which they change are largely governed by the purposes they serve. Documents provide *variable* fixity for a purpose.

Finally, the genre of artifacts, the type of things they are, acts to mediate between the technology of fixity and the purposes being served. Genre, by providing the characteristic form of the document for a particular kind of setting, clothes or dresses up fixity in a format that suits the kind of work it is being called upon to perform.

In looking at paper documents, it is clear that our culture has developed a huge repertoire of genres, each with its own characteristic rhythm of fixity and fluidity. And we, as

literate members of the culture, understand how to use these — how to fill in a credit card slip, annotate a memo, or put a Post-it note on a colleague's door. The equivalents in the digital domain have only begun to be worked out. There are technical problems associated with achieving fixity/fluidity in the digital domain (e.g. the difficulty in achieving long term fixity mentioned earlier), but beyond this there are the larger cultural issues of determining the new digital genres that will be effective in new environments. For these new genres (including those associated with hypertext, to be discussed further below), we as a culture will need to work out what is to be fixed, for what purposes, for and by whom, and when and how it can be changed.

The insight underlying the claim that we are moving "from fixed to fluid" has more to do with an increase in rate of change than a loss of fixity — a faster rhythm of fixity and fluidity. It does appear that the mutability of digital technologies is making it easier and quicker to change certain genres of documents, but a faster cycle time of fixity and fluidity should not be confused with the claim that fixity is disappearing or that it is no longer a central property of documents, or that it is any less a human concern.

A related confusion is between the duration (or lifetime) of a document and its fixity/fluidity (its rate or rhythm of change). There is a tendency to treat "permanent"⁴ (= of long or indefinite duration) as synonymous with "fixed" (= unchanging). But clearly enough, documents of long duration may change a number of times (the U.S. Constitution, for example), while more transient documents may undergo little change or no change during their short lifetime (Post-it notes).

Some of the confusion between fixity and permanence has to do with issues of identity. Suppose I have been working on a paper, stored in some file x on my Mac. Now suppose I make a series of changes and save them in file y. I might well consider y to contain a new *version* of x, but under certain conditions I might instead consider it to be a *new* document. The latter would be the case if in editing x to produce y I concluded that I had actually started a second paper, possibly on a different subject, or for a different audience. Thus, depending on how I registered x and y, I would either see a single document undergoing a change (being fluid), or two separate, fixed (unchanging) documents.

Whenever change happens, in fact, we can choose to see continuity of identity (in which case "the document" continues to exist but undergoes change), or to see the creation of something new and different. Moreover, depending on our point of view, the granularity of our looking, we may or may not see change at all — or will see certain changes but not others. Thus all attribution of fixity and fluidity is relative to our purposes and practices

⁴For an insightful exploration of the meaning of "permanent" in library settings, see [21].

as these shape perception. In saying that a document is fixed (or fluid), we therefore need to exercise some care to be clear about *what we take the thing to be* and *which properties* of this thing we take to be fixed or fluid.

Joyce's *Ulysses* provides a nice example of the relativity involved in asserting identity. The novel was written over seven years. During that time, Joyce added more than 100,000 words in longhand to the galleys; and it was finally typeset by printers who did not speak English [16]. There have been at least eighteen editions, including the 1988 critical edition which was the subject of some considerable controversy. There is no — and it seems safe to say, there can be no — definitive text. Yet to the naive reader, or perhaps to the culture at large, there is “the novel, *Ulysses*,” a definitive, stable entity, while to the Joyce scholar, looking with different concerns and different eyes, there is a (still ongoing) flow of manuscripts and editions. Fixity and fluidity is, to some extent, in the eyes of the beholder.

5 THE FIXITY AND FLUIDITY OF HYPERTEXT

What then is hypertext, in the light of the foregoing discussion? We should first distinguish between *hypertext* (singular) and *hypertexts* (plural). Hypertext is a communicative technology centrally based around notions of links and nodes. Hypertexts, by contrast, are the documents (or collections of documents) produced with this technology. Hypertext technology is clearly still in its formative stage, yet is more advanced than its associated genres, which are at best immature.⁵ Indeed, at the moment we are witnessing experimentation with a small number of genres, such as experimental novels and technical manuals, modelled on earlier paper-based genres. Much of what Bolter and others now present is premised on the anticipated maturation of hypertext technologies and the development of mature hypertext genres.

But if hypertexts are documents, then where is the fixity? Bolter and others argue that hypertexts are webs of elements with “forking paths,” to borrow Borges’ phrase. No two readers need follow the same path, nor need the same reader follow the same path twice. It is in this sense, he argues, that the reader, by actively choosing the elements out of which to construct his reading, is taking on, or taking back, some amount of authorial privilege. He concludes that this world of multiplicity — multiple paths, multiple possibilities, multiple voices, multiple authors, multiple readings, and multiple readers becoming writers in the very act of reading — signals the death of fixity.

⁵Moulthrop [18] says: “At the first European Conference on Hypertext, the theorist and developer Mark Bernstein asked, *where are the hypertexts?* Then as now, one could point to a number of experimental ventures; but important as they are, these examples do not sufficiently answer Bernstein’s challenge.” (p. 171).

But this simply isn’t true. A better formulation is that the development of hypertext technologies and genres has created the possibility of *renegotiating fixity*, of determining new patterns of fixity and fluidity. Answers to questions of the following sort are now in the process of being worked out: What will be fixed in the future — *which aspects* of documents? *which aspects* of the processes of production and use? For what purposes? For whom? Over what periods of time? Who will have the right to make changes?

In the remainder of this section, I will illustrate the nature of this ongoing process of renegotiation by looking briefly at three issues within the hypertext community: non-linearity, versioning, and dynamic structuring. In looking at these, I am more interested in the struggle to provide fixity and fluidity than in the details of any conclusions the community may have reached.

Much has been written, from the earliest days, about how non-linearity, one of the hallmarks of hypertext, introduces variability into reading order. In a network of elements, there is no single way to linearize the elements, and the reader must choose one or more paths, very likely without help from the author. Indeed, the author has abdicated responsibility for what was previously considered an essential part of his sacred task, to provide a single, or at least a preferred, linearization of his material. Thus hypertext, by definition, has introduced a degree of choice, of fluidity, into the reading process, where previously there was little or none. Counterbalancing this, however, has been the development of methods to allow readers to fix, and retrace, a path through a network, such as notions of guided tours [15, 24] and scripts [29]. The concern is obvious enough: just because readers can in principle follow different pathways each time they enter a hypertext does not mean that they will in practice always want to, or that others will not want to follow where they have gone.

In his reflections on NoteCards [11], Frank Halasz listed versioning as one of seven issues for the next generation of hypertext systems. Since then, a number of models of versioning have been proposed [10, 20] and there has been much discussion about what can be versioned (nodes? collections of nodes? links? etc.) and how this can be accomplished. While the details of these models are intriguing, my point here is simply that the desire for versioning arises from the desire to hold a changing document fixed — for freezing, or taking a snapshot of, aspects of a changing network of nodes and links. In other words, the mere presence of — or even the perceived need for — versioning is sufficient in itself to challenge the claim that fixity has disappeared from, or is irrelevant to, hypertext.

In the same article, Halasz noted that hypertext systems “tend to have difficulty with rapidly changing information” (p. 845). He gave the example of “the problem of premature organization” in NoteCards whereby users were forced to commit early on to an organization for their network which

was then difficult to change as their ideas evolved. Observing that hypertexts are, for certain purposes, too static or fixed, he went on to propose “virtual structures” — dynamically constructed nodes and links — to address the problem. Others have since gone on to propose, and implement, notions such as virtual composites [8] and dynamic links [22, 23].⁶ In a sense, such mechanisms represent the flip side of versioning. Versioning is meant to counter the fluidity of hypertext networks by providing mechanisms of fixity; dynamic links, and other such mechanisms, counter the overly fixed nature of networks by providing mechanisms of greater fluidity.

These three examples illustrate the opposing tendencies in hypertext development — to provide more fixity where there is fluidity and more fluidity where there is fixity; it is a struggle to determine where variability will reside. We see this opposition in dealing with non-linearity, where the desire to provide variable reading order is balanced by the desire to fix it. We see this too in versioning and dynamic structuring, which provide mechanisms to fix and to change hypertext networks. These explorations might be summarized by the word “choice”: hypertext developers are busy creating new representational choices and making them available to authors, authors are working to figure out what choices they want to make available to readers, and readers are trying to decide which of the choices available to them they wish to exercise. None of this spells the death of fixity.⁷

6 BOLTER'S BROADER ARGUMENT

Having examined the fixity and fluidity of documents in some detail, I turn now to Bolter's broader argument, which includes, but isn't limited to, his position on fixity and fluidity. My aim is to spell out and critique the additional claims he makes. In so doing, I of course run the risk of distorting, or inadequately representing, his ideas. I am bound to do this to some extent, all the more so because Bolter is multi-vocal (much as he suggests hypertexts will or should be); there is a fair amount of play in his articulation, bordering at times on contradiction. Bolter himself acknowledges this:

The printed book also requires a printed persona, a consistent voice to lead the reader on a journey through the text. It has been hard for me to establish and

⁶Guinan and Smeaton [9] have brought together the notions of dynamic links and guided tours to produce “dynamically planned guided tours.” This represents one more swing of the pendulum between fixity and fluidity: from multiple paths to fixed paths (guided tours) to dynamically determined paths.

⁷Bolter and others have imagined hypertexts that actively deconstruct and destabilize themselves, which can no longer be said to be fixed, stable, repeatable, whatever. But to admit such possibilities in no way undercuts my larger claim. Cases where fixity is absent, should we construct them, would be fascinating, all the more so because they would stand out as exceptions.

maintain such a voice in this essay. For us in this period of transition, the idea of electronic writing is highly ambiguous. I found myself wanting to be true to this ambiguity by playing the advocate of the new technology in one paragraph and the devil's advocate in the next.⁸ (p. ix)

I have therefore chosen to articulate a *version* of Bolter's central argument, one I believe to be representative of a certain line of thinking that is prevalent in our culture in general and in writings on hypertext in particular (see for example [2, 17, 18]).

Bolter's argument goes something like this: In each age, the forms of writing⁹ and their attendant institutions (what he calls a “writing space”) are largely determined by the nature of the available writing technologies. For many centuries, the dominant forms and technologies in Western culture were those of handwriting and print; because these produced fixed products (e.g. static, bound books), they engendered a fixed canon of monumental works produced by a small class of privileged authors separate from a larger mass of readers. Now, by contrast, we are moving into a world of computer-mediated writing tools and new electronic forms. The fluid, dynamic nature of these new technologies is leading to new fluid forms, such as hypertext, to the death of the fixed canon, and to the dissolution of the distinction between author and reader.

This argument is comprised of four points:

- (1) *Technological determinism*: The genres, practices, and institutions of writing are derived from the technologies that enable them.
- (2) *Media transition*: We are moving from one technology base (paper) to another (digital).

⁸The very next sentence reads: “In the end I had to remain the advocate, to argue cheerfully that the computer is a revolution in writing.” While I would agree that Bolter chose the strong and cheerful path of advocacy, I suggest that the early sentences of this quote more accurately characterize a certain ambiguity maintained throughout the book.

⁹It is worth noting that while Bolter's is focussed on *writing*, as the title of his book suggests, mine is on *documents*. This gives us closely related, but not identical concerns. For Bolter, as a professor of English, the term “writing” evidently refers primarily to literary, textual works — to works of fiction, such as the novel, and to extensions of the novel in the domain of hypertext (although he does at times take “writing” broadly to mean symbol-making). My use of the term “documents,” by contrast, starts with the broadest notion of “writing” (or perhaps “documenting” would be the better verb) and therefore includes non-textual artifacts (photographs) and scientific (journal articles) and commercial materials (spreadsheets, memos).

- (3) *Fixed to fluid documents:* Paper-based technologies and their associated documents are fixed, while digital technologies and documents are fluid. Combined with the previous point, this argues that we are moving from a world of fixed documents to a world of fluid documents.
- (4) *Fixed to fluid institutions:* The fixity of paper produced a fixed canon and a sharp distinction between author and reader; the fluidity of digital technologies and documents will dissolve the fixed canon and the distinction between author and reader.

In the remainder of this section I will examine the first two points and aspects of the fourth. (I have already dealt with the third at length.)

Technological determinism is a widely held belief that cultural change follows directly and inexorably from the development of certain "critical technologies," such as the printing press or the computer. Here is how Raymond Williams [25] explains it:

[Technological determinism] is an immensely powerful and now largely orthodox view of the nature of social change. New technologies are discovered, by an essentially internal process of research and development, which then sets the conditions for social change and progress. Progress, in particular, is the history of these inventions, which 'created the modern world.' The effects of the technologies, whether direct or indirect, foreseen or unforeseen, are as it were the rest of history. The steam engine, the automobile, television, the atomic bomb, have *made* modern man and the modern condition.¹⁰ (p. 13)

There is a growing body of research which contests this view (see, for example, [3, 6]), arguing instead that the relationship between technological development and social change is much more complex and non-linear, the result of the interaction of many social, political and technological forces. Francesco Antinucci [1], for example, describes how a written language was introduced into Somalia in 1971, but failed to take hold for a number of reasons, including the availability of audio cassette recorders, which enabled people to create oral records more consonant with their culture than printed books. In contrast to so many accounts of the effects of printing (e.g. [7]), literacy and printing in this case did not *automatically* lead to certain culture conditions; in fact, it did not lead to those conditions at all.

¹⁰Although this view is expressed in many ways, I come across it most frequently in what might be called the "myth of PARC" — the view that a small group of brave and brilliant researchers singlehandedly invented the future.

In suggesting that we must understand documents (or writing) as a complex interplay among technologies, artifacts, and social practices, I am of course aligning myself against the powerful and compelling orthodoxy of technological determinism. While Bolter's advocacy of this position varies to some extent throughout the book (an example of his multi-vocalism), he does by and large argue that certain properties of the technology caused certain cultural changes.¹¹

Bolter's technological determinism is apparent when he argues that the fixed canon arose from the fixity afforded by writing.¹² There is a weak sense in which this statement is true and a stronger sense in which it is false. Clearly, one cannot have a fixed canon without mechanisms for maintaining fixity. Clearly, writing provided such a mechanism — but only in part. For while writing made it possible, in principle, to fix marks on an individual document for years, or even centuries, most texts written centuries ago would long since have disappeared without the additional *social* mechanism of textual scholarship [26]. For it is textual scholars who, over more than two millenia, have copied and policed manuscripts, attempting to eliminate the inevitable errors that arise from copying and recopying. It is through this social process of copying and correcting (and of course deciding which manuscripts to copy and how to correct them), combined with the technical ability to fix marks for periods of time, that a fixed canon has been achieved. None of this in itself suggests that Bolter is wrong in predicting the end of the fixed canon; but if the canon does dissolve, it will have at least as much to do with social and political issues as with technological ones.

If technological determinism is a wrong-headed, if popularly held, view, the same may be said about Bolter's second point, "media transition." Despite the failure of the paperless office to materialize and the continuing increase in paper use, it is widely believed that we are headed for an all-digital world — eventually if not immediately. (Currently, one sees this assumption in much of the discussion around digital libraries in the context of the "information superhighway" [14, 19]). I am partial to a view that says paper use will indeed decrease with time, but that, based on genre and practice, we will gradually arrive at a balanced use of paper and digital formats, perhaps including hybrid forms uniting digital with paper. Whether or not I am right, the

¹¹One hears the less technologically deterministic voice in statements such as, "the computer can either reinforce this stability or sweep away the whole tradition of typography" (p. 65), where he suggests that technology provides *options* rather than making determinations.

¹²"Clearly, these traditional views of the canon and of reading were born of the technology of handwriting and matured in the technology of printing. If handwriting already suggested the goal of fixing the text, printing achieved a true cultural fixity, allowing texts to survive unchanged for centuries. The idea of declaring authors canonical is much older than print." (p. 151)

obviousness of the assumption that digital forms will replace paper deserves to be challenged.

7 CONCLUSION

In this paper I have suggested that arguments, such as Bolter's, about where we are headed are based in part on mistaken ideas of where we have come from and what it will take for us to get there. I am less concerned about whether Bolter's conclusions are correct — e.g. that the fixed Western canon will disappear or that new notions of authoring and reading will evolve — than with certain assumptions, prevalent in the culture, about how documents work or the role that technology plays in determining social practice.

My primary aim has been to challenge the assumption that digital technologies are bringing an end to fixity, and to this end I have argued: (1) that technologies, in and of themselves, do not bring about cultural change; (2) that the need for fixity is a basic human concern, which is in no danger of disappearing; and, most particularly, (3) that digital technologies can already be seen to support fixity, and will no doubt continue to do so. I illustrated this third point by showing that hypertext, taken to be one of the more fluid document technologies, is participating in the renegotiation of fixity rather than its elimination. I also suggested that the rhetoric concerning a movement from "fixed to fluid" is more properly a response to the increased rate of change of certain genres, a speedup which also should not be construed as a loss of fixity.

But there may be yet another way to understand what the "fixed to fluid" rhetoric is trying to get at, which may actually help to make sense of, and lend support to, what Bolter is saying. This is hinted at in several of Bolter's remarks (*italics are mine*):

It is still popular in this late age of print *to believe* in the enduring, 'timeless' quality of great works of literature . . . (p. 150)

But this *traditional belief* in the fixity of the text cannot survive the shift to the electronic writing space. (p. 155)

Electronic writing does not permit a return to *traditional assumptions* of stable and monumental texts. (p. 166)

Rather than taking "fixed to fluid" as a statement of fact (and arguing, as I have done, that it is false), we might instead see it as expressing a change in certain widely held *beliefs* and in the *rhetoric* associated with them. Thus, it does seem true that for many centuries the rhetoric surrounding writing and books was centered on fixity, permanence, immortality, monumentality, and so on. The reality, by contrast, was that books — and other kinds of documents even more so — were actually much more fluid and ephemeral than this rhetoric acknowledged.

Perhaps what is happening now is that a too limited view of fixity can no longer be sustained in the face of various changes, including the proliferation of digital technologies. The pendulum is now swinging the other way, producing a rhetoric of fluidity that is equally limited. Viewed this way, Bolter's book accurately documents a cultural shift from a *rhetoric of fixity* to a *rhetoric of change*. Documenting this shift constitutes a real contribution — and I add this qualifier at the risk of appearing to make an overly simplistic distinction between language and the world — so long as we do not confuse rhetoric with reality.

ACKNOWLEDGEMENTS

Special thanks to those who have read and critiqued versions of this paper: Debra Cash, Cathy Marshall, Susan Newman, Darrell Raymond, Brian Smith, Randy Trigg, and JoAnne Yates.

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