Argument in hypertext: Writing strategies and the problem of order in a nonsequential world

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Abstract

The qualities of nonsequentiality that make hypertext so appealing to writers and readers of informative and literary texts are also those that problematize arguments in the same settings. For a hypertextual argument to succeed, it should clearly employ the fundamentals of giving good reasons and ample evidence. But such an essay should also deal with the loss of control over order by making use of recent developments in rhetoric and argument theory. Specifically, I present concepts of informal logic, stasis theory, primacy/recency/repetition effects, spatial metaphors, and textual coherence as a starting point for building a rhetorical understanding of argumentation strategies in hypertext.

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1. Introduction

To echo what John Slatin (1991) observed several years ago, the point I would like to make in this article is embarrassingly simple: People write arguments in hypertext differently than they do in a more traditional format. When faced with the task of constructing single-author, self-contained arguments in a hypertext environment—whether it be in STORYSPACE, MACROMEDIA DIRECTOR, a series of web pages, WINHELP, or something similar—authors must overcome the expectation of order. After all, at first blush, arguments would seem to rely heavily on sequential structures such as if–then sentences, first-came-this presentations of evidence and reasons, and the building of cases in which each new piece of information builds upon previously established reasons. In contrast, the spirit of a hypertextual essay is that it does not privilege a sequential structure. The apparent loss of sequence in hypertext...
gives rise to argumentative strategies that are more flexible because concepts normally taken for granted in sequential discourse take on a new look in a hypertextual environment. For example, it has always been assumed that the job of selecting arguments and putting them into the best sequence is something that the author does, but in a hypertext program, this task (or at least part of it) belongs to the reader. Because questions about the nature, order, and success of arguments belong to the realm of rhetoric, we can apply these rhetorical concepts of structure, order, and sequence to build the basis for understanding and teaching hypertextual arguments.

2. Argumentative hypertexts

Although many people tend to think of hypertext as synonymous with the World Wide Web, I would like to use a broader concept. Theodore Nelson (1987), who coined the term, described hypertext as "nonsequential writing—text that branches and allows choices to the reader, best read at an interactive screen" (p. 2). For readers, this navigation involves such actions as selecting parts of the hypertext, deciding which other parts they want to jump to, and displaying the document in ways that make sense to them. Within hypertext the reader can become something of a co-author because the order of a nonsequential document is determined only at the time of the reading. Despite the widely varied uses of hypertext, as well as the disparate discourse about hypertext, the core concepts that most people can agree on are the node and link. The node is a chunk of something: text, graphic, or sound—the raw information that, when connected to other nodes, constitutes the meat of the hypertext. Nodes are joined by links, electronic connectors that can or cannot have an explicit meaning (depending on which theorist you read). Although all hypertext writers agree on these two terms, they do not agree on their definitions. Nodes can be as general as data or as specific as paragraph. These can be graphic, audio, textual, or any combination of the three. Links are sometimes described as mere connectors; other times they are compared to knots in fabric, holding together concepts and making meaning out of their relationships.

All the nodes and links that comprise hypertext, as well as the action that they enable, occur with the aid of computers—computer screens today and electronic paper tomorrow. This action can take place in web browsers employing a document metaphor interface or in online UNIX help employing a text-only interface. Users can use the mouse to click on a node to read its contents, or they can use only their keyboards to navigate the hyperdocument. Links are signaled through typographic convention (boldface, italics, and so on), through color, or through graphic buttons and other pictures on the screen. Jumps between nodes can involve a movie-like transition or can simply replace the text on the screen. The text on the screen can appear to belong to many "containers" that are distinct from one another, or it can appear as one unified text, even though its parts are stored in different files. Even if every feature and every program were enumerated, you would simply scratch the surface. Hypertext changes on every screen and with every reader. It is not like a static printed book where once we all agree on the definitive edition; we can all progress merrily along with the assurance that we are looking at the same artifact. With hypertext, it is unlikely that different readers ever read the same text.

What is the point of studying and/or writing such essays? First, there are clearly occasions when an author wants to create a hypertextual argument, either for the pages of online academic
journals like *Kairos*, personal web pages, or specialized software packages like *STORYSPACE* or *AUTHORWARE*. Although my primary aim in this article is to explore what happens to arguments when writers employ hypertext, my secondary purpose is to begin exploring the rhetorical principles most applicable and useful in these situations. The questions of when hypertext is appropriate for which kind of argument or which arguments are better suited to hypertext is beyond the scope of this article. Such questions are highly relevant and applicable to anyone producing text for a purpose; they are part of the larger issue of picking the medium that works best for a particular aim.

But even if no one were interested in writing arguments in hypertext, exploring the new intersection of mode and medium is worthwhile, if for no other reason than for testing our theories of discourse, argument, and rhetoric. As James *Kinneavy* (1980) pointed out, all discourse serves one of four basic aims corresponding to where its main emphasis lies. Discourse can focus on the objective world (informative aim), on the speaker (expressive aim), on the audience (persuasive aim), or on the language itself (literary aim). Most of the energy in hypertext studies has been generated about two broad categories of hypertext: informational and literary. Hypertext that serves the informative aim of discourse is seen as a way of making large amounts of information manageable. The majority of scholarship on hypertext deals with this aspect, for hypertext promises its users instant and easy access to volumes of information, easy navigation, easy search capabilities, and easy retrieval of data. Theorists with this aim have worked on the technology and the navigational challenges we face as we put more and more information online. The literary application of hypertext is radically different from its informative aim, often seeking to exploit the ambiguity and inherent nonlinearity of a hyper-narrative. In contrast, literary hypertext emphasizes the inherent playfulness of the nonlinear order and its natural reader-oriented potential.

Almost all discourse has a persuasive component. Indeed, with electronic commerce expanding, and with the Internet bursting with commercial sites, it is difficult not to find persuasion—advertising—in hypertext. In this article, however, I am using the much narrower term *argumentation* for two simple reasons. Argumentation aims at a higher level of commitment from the audience: It not only seeks to persuade, but also to convince, or to bring about a change in the audience. Further, rhetoricians have always acknowledged that persuasion contains nondiscursive elements, such as personal charisma and the character of the speaker. Theoretically, at least, argumentation generally focuses on the intellect. Chaim *Perelman* (1982) saw argumentation as the discursive techniques aimed at winning the audience’s assent for one’s ideas. The difference in convincing and persuading, he noted, is not as clear as we might hope: “To the person concerned with results, persuading surpasses convincing, because conviction is merely the first stage in progression towards action… . On the other hand, to someone concerned with the rational character of adherence to an argument, convincing is more crucial than persuading” (p. 27). Perelman applied “the term *persuasive* to argumentation that only claims validity for a particular audience, and the term *convincing* to argumentation that presumes to gain the adherence of every rational being” (p. 28). In hypertext studies, the work on argumentation (*Conklin & Begeman*, 1987; *Marshall*, 1987; *Trigg*, 1983; and others) has tended to focus on describing, capturing, and enabling argument structures. David *Kolb* (1994, 1997) explored the sophisticated requirements of scholarly discourse and its use of argument, as well.
3. Argumentation theory

Argumentative hypertexts are ultimately worth writing and studying because argumentation has received a lot of attention over the past ten years, with a new focus on argumentative writing in both the workforce and academia. Beginning in the 60s, the old concepts of formal logic and debate came under fire, and argument theory acquired new energy, accompanied by a new set of grounds. The New Rhetoric of Kenneth Burke and Chaim Perelman helped theorize the audience back into the argumentation process. Philosophical inquiries into argument’s role in human activity, like Jürgen Habermas’s (1984) Theory of Communicative Action, placed argumentation in the center of society. And Informal Logic emerged in the 60s, led by Stephen Toulmin (1958), Johnson and Blain (1978), as a focus on the structures and procedures that real-world language and actions engaged in. The still emerging field of modern argumentation recognizes three aspects to argument. The products of argument—reasons, claims, premises—belong to the realm of logic; the procedures for conducting arguments belong to the realm of dialectic; and the processes of argumentation belong to the realm of rhetoric.

In this article, I emphasize products and processes because I am primarily focused on single-author hypertexts that link to themselves, or what Roy Rada (1991) called microtexts. Much can be gained in understanding how the medium affects structure, even by focusing on argument-as-product. Before we can address questions of hypertextual, collaborative arguments, however, we first must examine the dynamics of these microtext arguments. With such grounding, we can look at arguments as social events and procedures such as those we might see in a linked email discussion list.

Before the recent rise in argument theory, standard presentational order prescribed by Cicero was the norm; it is still omnipresent, probably because it applies to most kinds of spoken and written argumentation. But alternative approaches to order are available. Today, argument theory is less obsessed with the right order of arguments and more focused on the constructing, choosing, and using of arguments. For example, instead of focusing on debate, with its goal of winning, argument theory follows Perelman’s (1969) more rhetorical goal of “securing the adherence of the audience.” And instead of studying logical structures of proofs, it listens to the way people actually argue. The field of informal logic certainly strives to observe language as it is used, not to prescribe a correct use. Toulmin (1958), Perelman and Lucy Olbrechts-Tyteca (1969), Charles Hamblin (1970), and others who espoused informal logic did so because it described how reasons are given in real, everyday language. Syllogisms and analytic rules might be well-suited for certain sciences and pure math, but common sense will show even the most brazen skeptic that the vast majority of arguments are conducted successfully day to day based on something else. Everyday argument must be based not on the rules of formal logic, but on a kind of informal logic. This reasoning is always dependent on the audience to whom arguments are addressed.

4. Order

As we try to grasp arguments in hypertext, part of our difficulty lies in trying to map our existing expectations of argumentation and reason onto this new medium. Indeed, Jay David
Bolter (1991a) suggested that argumentation without linearity is contradiction and that hypertext reveals what Sontag called the “impossibility or irrelevance of producing a continuous, systematic argument” (quoted in Bolter, 1991a, p. 117). In this new age of hypertext, Bolter said:

> the new works do not have a single linear order, corresponding to the pages of the book or the columns of the papyrus roll, and so there is no order to violate. It is precisely the lack of a fixed order and commitment to a linear argument that will frustrate those used to working with and writing for the medium of dialog. For writers of the new dialog, the task will be to build, in place of a single argument, a structure of possibilities. (p. 119)

George Landow (1992) also had problems with what hypertext does to argumentation: “Hypertextual linking, reader control, and variation not only mitigate against the modes of argumentation to which we have become accustomed but have other, far more general effects” such as randomness of the text, the writer’s loss of control, and the inevitable fragmentation and tightening of increasingly self-contained nodes (p. 52). Unlike textual units—paragraphs and chapters—that depend on neighbor text units to create coherence, these self-contained nodes are like islands of meaning, no longer relying on other nodes for context. This fragmentation and self-contained tightening is what makes argumentation much more difficult.

The speech writer and paper writer are responsible for arranging their points to achieve the best effect, and that order can reasonably be expected to be adhered to. But the writer’s job of carefully arranging arguments shifts radically in a hypertext setting. For with the exception of the initial conditions (that is, the recommended starting point and the recommended path(s) through the argument), the author has no idea of how the reader will arrange the text. In other words, virtually the entire job of arrangement (dispositio, in classical rhetoric) now lies with the reader, not with the writer. The writer is now somewhat like the person who sets up the pieces in the proper order, then sits back and watches the chess players move pieces around until there is a draw or a victory.

So how does a hypertextual writer take responsibility for order? Hypertext arguments resemble “natural arguments,” which Ralph Johnson and Anthony Blair (1978) described as “digressive, rhetorical, repetitive, ill-organized, incomplete, and multi-functional” (p. 20). In such arguments, persuasion does not depend on a particular formula or order, as the work of Carl Hovland (1957), Perelman and Olbrechts-Tyteca (1969), Perelman (1982), and Toulmin (1958) illustrated. Furthermore, in such arguments, it is reasonable to expect that the auditor (or reader) will allow inconsistencies to pass, rather than dispute them point by point. The good faith we hold in writing is that the reader will finish, or at least skim, the argument. In hypertext, faith involves both parties. The readers assume the author will eventually reveal important parts of an argument and not waste their time; the author expects the readers to explore the entire hypertext, or at least those nodes that are easy to access. But the speaker or writer must make choices, said Perelman (1982), for “whatever be the benefit of an accumulation of arguments, there are psychological, social, and economic limits that prevent a thoughtless amplification of the discourse,” including cost of printing, attention span of listeners, and time available for debate. “Since the number of arguments is a priori indefinite, a choice must inevitably be made, guided by the idea one has of the respective arguments” (pp. 139–140). Arguments in hypertext raise these same issues of choice, for although a computer could store massive numbers of reasons, rebuttals, and claims in a hypertextual argument, both the attention span
of readers and the time they are willing to devote to reading an online argument are clearly limited.

The following sections attempt to specify some types of tactical choices that writers of hypertextual argument could make in dealing with such limitations. Although the purpose of this article is primarily to explore and describe a model of complementary argumentative and hypertextual structures and techniques, no doubt the seeds of a rhetoric for writers of hypertext arguments is found in these choices. The following observations come from my 1997 study of hypertext writers, from watching students in my classes struggle with online writing, and from personal frustration and experience in attempting to craft nonlinear arguments. I have classified these tactics broadly as (1) reducing the number of nodes, (2) making use of one or more well-known effects involving the placement of ideas such as primacy, recency and repetition, (3) employing an existing argument structure or genre such as a Toulmin model or a recognizable stasis, (4) using the reader’s sense of space, both cognitive and visual, and (5) writing prose with an eye to fundamentals of textual coherence.

4.1. Use fewer chunks

One choice that a writer might make is to avoid using too much fragmentation of the argument’s main parts, saving large-scale chunking and linking for ancillary materials such as context, warrants, and so on. Kolb (1994) (online) took this approach in *Socrates in the Labyrinth*, favoring a hybrid of traditional argument structures and speech acts. This hybrid structure would be relatively linear, at least at the gross level of the logic of the argument; an argument based on, say, a Toulmin model would not split up the claims, grounds, warrants, and data, but would keep these critical elements together. The all-inclusive nature of hypertext would come in at the level of what Kolb calls the “surrounding material” of arguments, namely all the discussion, facts, opinions, and dead-ends that accompany a real-world argument. The strength of such an approach would be core arguments insulated from the indeterminacy inherent in hypertext, but the argument essay would benefit from that same quality: “By not using hypertext to model every move, we would assist perception rather than burdening it” (p. XX).

After a writer has taken these steps, we can no longer speak of a proper order of reasons, but rather an order visually or textually suggested to the reader. This suggested order could employ labels to guide the reader. More likely, the writer could use spatial metaphors like a Western top-down, left-to-right, flowchart, hub-and-spoke, inside-and-out, or mandala structure. Mark Bernstein (1998) catalogued nine complex hypertext structures in an attempt to provide a common vocabulary for “large linked structures” (online).

4.2. Exploit primacy, recency, and repetition effects

Establishing a suggested order is one technique the writer can use to deal with the loss of control over their readers reading order. Even if we do not know the specifics of a given reading, we can describe specific visits to chunks of information in a hypertext with specialized terms. The primacy effect refers to the first thing the audience encounters and the recency effect to the last. Studying the effects of presentation on the audience, Hovland (1957) reported that, within certain constraints, primacy and recency are real, observable effects that should be taken
Richard Rieke and Randall Stutman (1990) also discovered that, up to a point, a larger number of arguments is more persuasive than a smaller number. This repetition effect “generally refers to the propensity of receivers to regard repeated statements as more true than new statements” (p. 205). But this effect seems only to be true up to a point, for “excessive repetition (more than three times) can be viewed as irritating or even offensive to an audience” (p. XX).

If hypertext puts sequence into question, is it even possible to speak of primacy and recency? In a word, yes. The reader does experience parts of electronic argumentation in a certain order, just not necessarily in the author’s intended order. Hovland’s and Rieke’s findings suggest that hypertext authors must at least be aware of these effects, especially if they want to argue convincingly. In most hypertexts, the author establishes a starting point. Whether in a program like STORYSPACE or in a document destined for the Web, this known starting point will act as the user’s first contact with the hypertext. In these situations, the primacy effect can be used to the author’s advantage. As Figure 1 illustrates, the reader can traverse the various parts of a hypertext in any order, but before the author can have an advantage in laying out the argument if the starting point is known.

The author also chooses to link other parts of the hypertext together any way she pleases, perhaps encouraging a suggested path, or building ease or difficulty of navigation into the inherent cross-linking of the hypertext. In other words, the author can make it relatively difficult to encounter less favorable information by linking it to the main body of the argument with a single link. More favorable arguments/points can be linked to the main corpus by redundant links, increasing the likelihood that the reader will encounter these ideas. Figure 2 illustrates this design approach.

I use the term encounter deliberately, for before readers can read and understand an idea they must find it. As haphazard as this process of discovery can seem, the author can have a degree
of control over it. In a complicated hypertext, it is possible that certain places or ideas will not be read or encountered by the reader. The larger and more richly linked the document is, the less likely the reader’s discovery of every single nook and cranny. Through rich cross-linking, the author can skew the number of times a reader comes across a certain idea; encounter takes on a frequency connotation, invoking the repetition effect. Another sense of encounter involves the primacy issue: Without guaranteeing that part of a hypertext will function as a reader’s first encounter—or a later one—an author can strategically place a node where it would fall earlier—or later—in the reader’s path. Finally, the author controls language within a node; after all, nodes are not usually single words, but coherent points or illustrations. The author can dampen primacy or recency effects through internal wording (transitions, summaries, and the like), so that regardless of the path taken to a node, ideas contained in it are treated as a mini-argument, with order and effect considered within that node.

4.3. Employ existing structures and genres

Structuring arguments to try to take advantage of primacy, recency, and repetition effects is one answer to the question of order in argumentation. Another involves taking advantage of pre-existing argument structures, which can provide a ready framework for the argument writer. One such structure used in hypertext literature rests on Toulmin’s view of argumentation. Toulmin (1958) identified two kinds of logic, analytic or formal logic, the tool of science and mathematics; and substantive logic, the practical reasoning that informs everyday argumentation. He chose the positive name substantive because informal logic is negative, defining its scope only by what it is not—formal. Each kind of argument employs different terminologies, different approaches, and promotes completely different kinds of argument. Formal logic is concerned with truth and falsity, premise and conclusion, validity and invalidity. Substantive logic deals with the more ambiguous affairs of humans and uses terms like claims and grounds, shaky and sound, presumably and unfounded. Toulmin’s concept of a well-formed argument founded on substantive logic is more like a grid with categories to be completed. As long as all its elements are accounted for, the logic of the argument is sound. This view of argumentation could be seen as a model for answering and anticipating questions from a critical audience. In other words, it is not really important whether one begins with narration or refutation, as long as these elements are fleshed out for use in an actual situation with an actual audience. Frans van Eemeren, Rob Grootendorst, and Tjark Kruiger’s (1987) explanation of Toulmin (Table 1) foregrounded this dialogic nature in making explicit the auditor’s questions, something that Toulmin only suggested.

The model for this six-part argumentation structure might look like Figure 3, with each component of the argument separated in a hypertext, but with relationships among the parts well established.

As a means of evaluating hypertext arguments and as a way of creating complete ones, this grid can suggest that nodes be identified as claim, grounds, rebuttal, and so on, and that these nodes be linked together in the proper way.

In Dialectics and the Macrostructure of Argument, James Freeman (1991) advanced another approach in argument structure geared especially for longer arguments. Freeman used Toulmin’s approach, but omitted warrants and backing, siding with critics who believe these
two elements are nothing more than additional reasons, or data, in the same argument. Freeman did, however, refine the concept of linked arguments by having two or more premises combine before bringing the force of their reason to the claim, as shown in Figure 4. He also improved argument diagramming considerably through adding a modality, which corresponds to Toulmin’s Q(ualifier) so that he can account for the “presumably” or “almost certainly” in an argument.

Freeman (1991) showed how the structures can be combined in different ways to represent a larger argument, an illustration that provides writers of hypertext a possible node and link structure for arguments. In Figure 5, the diagram on the left, for example, illustrates an argument with six reasons, all filtered through the one modality M. Two groups of reasons are linked, P2 and P3, and P5 and P6, while P1 and P4 are independent reasons. The diagram on the right illustrates how the modality M can work elsewhere in an argument, as well as how a linking can be required of all reasons. This diagram might read something like this: Possibly reasons 1 and 2, and certainly reasons 3 and 4, make the claim valid. All the chains of reasoning are linked so that all propositions must join to give sufficient force to the claim.

A less rigid approach might be called hyper-enthymemic argument, where one premise overtly identified as a component within a hypertext and other premises either remain unstated or are left to be discovered within the hypertext in the course of exploring the author’s argument. It is worth observing that the enthymeme can mean something different in hypertext. Unstated or implied premises, the hallmark of the enthymeme, might mean that the author has truly
omitted these arguments, or it might also mean that the author truly did include what appears to be missing or assumed, but that the reader never encountered that node. It is becoming evident in the Web that whatever one is looking for is out there somewhere; if this is so, then we are all a single link away from making those formerly implied premises explicit. Conklin and Begeman’s (1987) GIBIS, a hypertext system that helps users structure critical discussion, used the node types of Position, Issue, and Argument. Paul Smolensky et al. (1987) described how EUCLID, another hypertext system designed for organizing discussions, does something similar to GIBIS, namely to “support user–computer interaction that revolves specifically around logical structure,” (p. 216) with node types of Claim, Argument, and Author.

Another approach that can be used in providing structure to nonsequential arguments is stasis theory, a concept of argumentation that does not necessarily involve order, but relies more on
required elements. Recent presentations of stasis theory revisit the classical legalistic notion of stasis or set of conditions that must be present in a well-formed argument. Each category involves a different set of conditions. These conditions do not necessarily have to be presented in any order, but they must be put forward to have a well-formed argument. If these conditions are not met, then no argument has been advanced for that stasis; the arguer, however, can look for another category that might work better. Not surprisingly, this model of argumentation seems to work best with legal examples. Jeanne Fahnestock and Marie Secor (1985) observed that “stasis theory has always been associated with technical rhetoric because of its forensic genesis and because its philosophical significance cannot be easily teased out of its courtroom setting” (p. 217). Richard Fulkerson (1988), attacking what he called “Comp-Logic,” or formal logic forced into composition classrooms, wrote that we should look to stasis theory as the answer to teaching logic in the classroom and used the legal example of a charge of battery and the conditions necessary to make a case for it:

[Prima facie] means that the case (extended argument) made for a claim is structurally and substantively complete so that if no counter-case were presented then the claim would stand. For each type of stasis being argued, certain elements must be present before the case can be regarded as complete and in need of evaluating. As an example, in a court of law, a prima facie case for the charge of battery must normally include four items:

- There must have been a touching by the defendant,
- The touching must have been either offensive or harmful,
- The touching must have been unconsented,
- And it must have been intentional rather than accidental.

If anything is lacking, the prosecution has presented a “bad” argument, and the case will be dismissed without any defense being necessary. Handling all four, however, does not mean that the prosecution will win. It merely means that an argument of sufficient strength has been presented to necessitate some response. The prima facie case is thus a minimum but crucial criterion for a satisfactory argument. (pp. 448–449)

In the introduction to A Rhetoric of Argument, Fahnestock and Secor (1990) described how these categories help students learn to write arguments:

The answers [to questions of how best to support given arguments] grouped themselves into piles and the piles into heaps under four headings, each representing a question that the thesis statement answers: ‘What is it?’ ‘How did it get that way?’ ‘Is it good or bad?’ ‘What should we do about it?’ Students were quick to grasp the simplicity and completeness of this four-part division, and of course, it is not completely new. The classical stases of Cicero, Quintillian, and Hermogenes describe a similar taxonomy of arguments, though the number of basic questions varies slightly from one thinker to another. (p. 2–3)

Susan Kline (1979) took a different approach in modernizing stasis theory in “Toward a Contemporary Linguistic Interpretation of the Concept of Stasis,” arguing that the various stases not only provide us external conditions or demands for structural “properness,” but also operate as internal conditions of felicity in communicative acts. In other words, a given stasis describes well-formed, or felicitous, speech acts between two arguers, a view she says is supported by a growing body of empirical audience (p. 102).
The more general view of stasis theory as a set of conditions that must be met to have a well-formed argument also informs hypertextual writing. Although order is still important to the reception of ideas by the audience, stasis theory holds that the order of an argument is not one of the requirements for a good argument. For this inquiry, this means that a hypertext author can use a given stasis as an invention heuristic to insure that a user, by browsing the argument, and the author, in absentia, can constitute the argument on these common grounds. The effectiveness of this argument will be subject to the actual order in which the nodes are traversed, but mentioned earlier, the hypertext author could mitigate primacy and recency effects through thoughtful linking, naming, and writing techniques.

Because stasis theory views the entire “argument act” as one set of items with little regard to order, hypertext argumentation can profit from adapting the classical stases and developing new ones. A stasis-theory approach to hypertext would mean that writers can fairly present their reasons, chunked in whatever way makes the most sense to them, linked in simple or complex relationships; as long as the reader encounters these reasons, the argument can be assumed to be adequate or well-formed. But this approach can imply that the author needs to make the approach visible, concealing nothing from the reader.

4.4. Make an appeal to space

A completely different approach to the problem of order involves two different kinds of space—cognitive and graphic. Cognitive space is the mental representation of the world where we live, move, and operate. A writer of hypertext arguments can choose spatial metaphors within a hypertext argument to overlay the content and hence to suggest a path through the argument. As George Lakoff and Mark Johnson (1980) told us, “Most of our fundamental concepts are organized in terms of one or more spatialization metaphors” (p. 17). Metaphors of space, of simply being embodied beings moving through that space, are tools that we use to help organize our minds. Unless we concentrate on them, they are probably largely invisible to us. But in places like hypertexts and cyberspace, these unconscious mnemonics become more conscious. The field of cognitive psychology, with its broad brush of theory about learning, memory, metaphors, computing, and language, offers new perspectives on how we could study what hypertext does to our reception of concepts, and conversely, to our production of those concepts.

Lakoff and Johnson (1980), and Mark Turner (1991) explored metaphors that buttress our conscious activities, shedding light on just how much our cognitive processes rely on metaphorical images, thoughts, utterances, and how those poetic devices help us organize our worlds. For them, metaphors are the fundamental cognitive blocks, like phonemes or morphemes are the building blocks of meaning. Metaphor does more than enable poetic language; we use physical metaphors of space to make sense of abstract concepts. For instance, “I was stuck in this mindset and couldn’t get out” illustrates the root metaphor “Mental states are rooms.” “Where are you going in your life?” illustrates the metaphor “Life is a journey.” Our very concepts of argumentation, according to Turner (1991), depend greatly on metaphors of physical action of two forces and of landscape topology. In this view, physical force refers to arguers and the argument they conduct, and the landscape topology refers to the grounds of that argument. Our very notion of the grounds for an argument embodies the metaphor for a location, a surface
upon which one constructs good reasons, much as one would construct a solid house on solid ground. Orientational metaphors are the norm in hypertext literature; among the ubiquity of travel and orientation metaphors, perhaps the most useful is Landow’s (1991): Clicking on a hot text is a departure and Displaying subsequent text is an arrival, as it seems to capture both the physical action of abandoning one bit of text on a computer screen to replace it with newer ones, as well as the psychology of leaving the known page and not knowing exactly what one will find. The view of argumentation as physical forces moving in space provides a useful perspective on hypertext, where metaphors of space abound. Hypertext theorists warn writers to orient the readers so they don’t get lost in hyperspace. Nodes are often called places or spaces, and the term link often consciously evokes physical action so that a reader goes from one node to another through a link, as if it were a tunnel or a highway. Readers of hypertext are conceived as explorers, wanderers, browsers, and so on. These navigational metaphors—rhetorical moves like Landow’s arrival, departure, and orientation—are not just figurative, but literal, at least at a cognitive level.

The second kind of space a reader encounters is the space on the page, and involves areas of study that have received a great deal of attention in recent years: visual rhetoric, layout, and graphic design. These screen (or document or node) components can be considered important argumentative tools through the author’s choices in using space to juxtapose nodes, display links, and lay out text and graphical elements within hypertextual nodes. Clearly, some of these choices cannot be present in all variants of hypertext viewing systems; if they are, however, they provide writers with an additional layer of tools for establishing their arguments. This spatial approach to understanding hypertexts is beginning to receive more attention. For example, Catherine Marshall and Frank Shipman (1993) found that the nature of implicit structures that arise from spatial representations of complicated ideas within hypertexts “can usefully augment the staccato traversal suggested by a node-link model of hypertext [, allowing] readers to interpret intertextual relationships according to perceptual conventions” (p. 227). In an earlier study (Carter, 1997), I found that the spatial layout of writers’ arguments—including node and link names, the layout of graphical representations of spaces in STORYSPACE, and the overall arrangement of arguments—was one of the most carefully wrought aspects of their work, far outweighing the logical force of their arguments.

One of the most important graphic spaces available to a writer is the overview space, a bird’s-eye view of the nodes and links of a hypertext that might function as a starting point for the actual argument. Such a space can use principles of layout to guide the reader towards a preferred path. In web sites, the overview space would be the home page or perhaps the site map. In other words, it suggests possibilities although it still encourages the reader to begin in particular places. Ben Shneiderman and Greg Kearsley (1989) believed that “the first challenge is to structure the knowledge in a way that an overview can be presented to the reader in the root document or introductory article. The overview should identify the key subsidiary ideas and the breadth of coverage” (p. 61). In Figure 6, for example, the argument written in STORYSPACE not only functions as a home page for the essay, but also helps orient the reader as to where main claims and evidence are located.

The overview space is but one aspect of a larger issue, orientation and clarity in navigation. Andrew Dillon, Cliff McKnight, and John Richardson (1993) argued for geographic metaphors of space to orient the reader, schemata (general and instantiated expectations of
Jakob Nielsen (1990b) assumed the tourist metaphor worked within larger hypertexts, and suggested the overview diagram: “In addition to showing users the layout of the information space, overview diagrams can also help users understand their current location and their own movements” (p. 132). Landow (1991), taking a slightly more general approach to the problem, introduced probably the best metaphorical terms to the discussion so far. Focusing on the reader, he drew on a travel analogy to explore actions that take place in hypertext: “The first problem concerns navigation information necessary for making one’s way through the materials. The second concerns exit or departure information and the third arrival or entrance information” (p. 82). From this generalization, he offered 19 rules for writing hypertext organized into three categories: (1) the rhetoric of reader orientation, (2) the rhetoric of departure, and (3) the rhetoric of arrival. The foundation of these rules is a concern for the reader. The rhetorics of departure and arrival can help a reader choose possible movements and the length of time spent within chunks of information, as well as provide users with maps to show where they have been.
Although hypertext is enabled through computer programs, the user sees text that comes into being through writing. Bolter (1991a) used the term topographic writing: “Electronic writing is both a visual and a verbal description. It is not the writing of a place, but rather a writing with places, with spatially realized topics” (p. 112). In other words, once we have broken out texts into small units, arranged them into a meaningful structure, and considered them as textual and visual, wrote Bolter, “we are writing topographically” (p. 112). Such a topographic view of arguing would involve using spaces themselves as a part of the argument, not as simply a medium for that argument. This appeal to space, or what I call argumentum ad locum, would be employed properly if it functioned as an invitation to explore the argument’s claims on its own grounds, with all facets of the argument open to exploration. We should be able to retrace our steps, find more information, test validity claims, and explore contradictory claims in such an argument. Both appeals and fallacies are suggested in such an argument. Just as an appeal to emotion is not necessarily fallacious, so, too, can an appeal that is based on spaces be either felicitous or fallacious. To commit an ad locum fallacy, the writer would construct unfair spaces, metaphorically resembling a house of cards, a house of mirrors, a labyrinth, uneven ground, and so on, where readers have no opportunity to check the grounds, retrace their steps, or make choices. In debate, as in deliberative arguments, the battlefield metaphor dominates, and as Turner (1991) pointed out, the winner becomes king of the hill, winning by repelling challenges to his position. It is possible, however, to construct arguments by convincing someone to come and stand with you; using the metaphorical questions such as “Are you following me?” and “Where do you stand on this one?” reveal such a topology. Successful hypertextual argumentation can employ this cooperative model because

• hypertext does not lend itself to a brute force approach,
• hypertext makes possible constructing multiple arguments within one document so readers can pick the argument that best suits them, and
• the action within a hypertext is ultimately determined by the reader, who must be willing to be convinced, rather than conquered.

This model suggests that the terrain a hypertext argument builds should be equitable, balanced, free of tricks, similar to informal logic’s expectations of charity, or the stasis theory’s legally neutral rules. It also suggests that if nodes are content and links are perceived as moves within that content, then Landow’s advice is well taken. If links have to stand in for leading the arguer through a cooperative space, they must have a clear function, a felicitous reasoning, and a comprehensible meaning. To take advantage of this view, writers must create friendly, memorable spaces and paths. The grounds upon which an argument takes place must be constructed so that readers want to wander around, learn about the topic wherever they go, and are convinced. But it is also important that readers not wander aimlessly. Because hypertext is reader-oriented, readers must be free to convince themselves; a writer’s argument must not ignore counter-points and must not force the reader through one-way doors or labyrinths to the answer. That would be an ad locum fallacy.

An argument I can wish to advance in this article is that hypertext documents, particularly arguments, require readers and writers alike to rely heavily on metaphoric space, perhaps more heavily than they would in a sequential document. The spatial metaphors inherent in hypertexts are central to conducting business within those texts. But metaphoric space is also important in
conducting the argument, as Turner (1991) illustrated. Foregrounding those metaphors enables hypertextual argumentation to advance, rather than to become muddled. Considering the broad metaphor of the entire document is also an important consideration. Authors choose a metaphor that will, in Turner’s terms, provide good grounds on which to convince the reader, or bring him or her along with the author’s line of thinking. Generalizing about which metaphors work best is difficult because the audience determines what does and does not work. We could construct a huge hypertext essay with all possible arguments and then tailor a given reading for each reader. But even taking this approach, the writer would have to provide different metaphorical forms required by certain arguments and certain types of evidence. For example, in the stasis of definition, a hypertextual metaphor of a tree diagram might suggest itself over, say, a mandala.

Note also that readers and writers from different cultures might be familiar with different argumentative, rhetorical, and visual patterns. Although metaphors of movement, life, or Earth have a certain universality about them, not all readers share the same sense of space, print and graphic conventions, or a Western orientation of logic or argument. Indeed, Anne Wysocki (1998) argued that we must not ignore the social or historical nature of visual design in considering visual rhetoric. Recommending specific graphical tactics suitable for writing arguments for other cultures is beyond the scope of this article. However, sound rhetorical practices of analyzing the audience and considering the context and medium of use should guide writers of hypertext argument.

4.5. Write for coherence

Even if the gross metaphorical structure of the hypertextual argument is reader friendly, the actual text—words, sentences, paragraphs—must still do its job for the reader. In hypertext, readers must detect coherence, regardless of the sequence they encounter. After all, any individual reading is sequential, a particular instantiation of many possibilities inherent in a hypertext, and readers will provide whatever is necessary to unify their reading. Slatin (1991) called our attention to the notion of prediction as a key to the user’s experience, prediction at the macroscopic (document) level, the microscopic (sentence or paragraph) level, and the metatextual (the large context) level (p. 155). Although many textual conventions are not suitable for building coherence across nodes (ordered lists, for example), writers can employ other textual techniques to convey coherence, techniques that survive the chunking of concepts into nodes and actively and strategically aim at building predictive possibilities in the reader’s mind. Although repetition is, I think, the predominate strategy, we could presumably employ any other figure of speech or thought to the text to provide the readers with the glue necessary to convince them that it is a single document, rather than a collection of multiple nodes.

A successful hypertextual argument gives good reasons and ample evidence, but it is also creative in drawing conclusions from that evidence because the reader might or might not stumble across those conclusions. An example of this kind of creativity is to encapsulate the full argument within each reason so that the entire argument is composed of many sub- (but complete) arguments. Thus, the writer might exploit the recency effect, anticipating that any node may become a conclusion for users who decide to call it quits at that spot. Stylistically, each node must sound like a conclusion, a technique described in my 1997 study of hypertext essay writers. In that study, I reported about how one of the writers in my class repeated key
claims in every node of his argument so that no matter which path readers took, they would see the claims repeated in various forms. Furthermore, he crafted the final sentence of each node to function as an ending by summarizing the main argument and using a stylistic flair characteristic of conclusions. In the following passage from an argument about the visibility of homosexuals in society, “finally” functions as the conclusion to the node and to the entire essay:

Finally, I would note that it is important politically that these issues be raised, but it is even more important that they are being raised where they are—in the living rooms and around the dining tables of the nation. I as a gay man and we as a nation are, at last, learning to speak, and we have been silent for so long. (p. 125)

A different approach is to offer, but not to force, a suggested argument so that this preferred path contains the best arguments, but the weaker arguments, rebuttals, and problems are still available to the exploring reader. Such an approach (if it is explicit) not only asks readers to create the path of the reading, but also asks them to choose the kind of appeals that they want to read, casting the readers as co-authors of both the argument and the document.

In “Comprehension, Coherence, and Strategies in Hypertext and Linear Text,” Peter Foltz (1996) examined coherence strategies in hypertext, particularly text and comprehension within hypertext. It is clear, he said, that coherence is a problem in hypertext by its very nature, and comprehension depends greatly on it. Text strategies that Foltz observed include titles, frequency of mention, enumeration, and initial sentences. These items “not only affect comprehension, but they also determine what a reader looks for in text and what the reader ignores” (p. 119). Comparing coherence between a text and a hypertext containing identical information, Foltz found no real difference in comprehension and reading strategies because the text in both cases used the same textual coherence, the same sentences, the same markers. Foltz also looked at considering the additional overhead of coherence within the nodes in a hypertext, noting that “the coherence between linked nodes is not often considered” (p. 128). Although hypertext authors are supposed to link nodes,

Foltz’s study showed that “subjects avoided the cases of ‘loosely’ linked information (cross hierarchical links), and instead, primarily made transition to highly related nodes” (p. 128).

Nielsen (1990a) observed that just as there are large overviews, which are like maps, to guide users, small-scale overviews, also help users keep track of their location within a small, bounded spaces. The small-scale overview functions much like narrative or argumentative coherence. Nielsen used the term context-in-the-large to describe the global, graphic, or overview level, and context-in-the-small to describe the immediate vicinity, even the text within any node that the user is currently reading. A loss of small context “could well damage overall usability more than the added context-in-the-large improves it.” He warned that “we should remember that users need context not just in-the-large but also in-the-small when reading hypertexts, and that different mechanisms are usually required to provide the two kinds of context” (p. 196). At
the level of the computer, mechanisms that help the small-context can be simple as having a clear screen that is large enough to hold an entire node’s text, for if the screen prevents the user from recognizing the author’s textual techniques, then small-context becomes more difficult. At the level of the text itself, using simple writing techniques can strengthen a hypertext’s context or coherence. Conklin and Begeman (1987) warned that the loss of context is one of the great unsolved issues in hypertext theory. When linear or a traditional sequence is disrupted, the reader has to rejoin these pieces of the puzzle to make them whole again. The text has its own context, maintained in traditional ways, and the hypertext has its own context, maintained through graphic conventions, consistent names, and so on. Stated another way, the entire context for an original text document is split into two parts—text and hypertext—each carrying a portion of the burden of coherence.

At the hypertextual level, coherence is also achieved through the repetition of link names and link names. Using nomenclature to parallel node names and link names can tie parts of the document to each other. We can also use nontextual means to create coherence. If we take *cohere* to mean *stick together*, then we can use linking conventions and visual juxtaposition of nodes as nontextual strategies for coherence. The visual arrangement of an overview place suggests certain genres or stases, with their own internally required coherency rules, so a definition essay, for example, derives some generic meaning from the appearance of definition in the map view. Even without suggesting stasis or genre, the visual relationship among nodes establishes a necessary coherence. If we find three nodes together, unlinked, we can assume a kind of parallelism among them. Perelman (1969, 1982) spoke of association of concepts, as a technique by which the speaker or writer constructs connections among terms that cannot have been linked previously. We cannot be able to speak of order, but we *can* speak of simultaneity, and when several nodes are together, they are associated, to use Perelman’s term. Clustered items are always associated because of this gestalt. Conversely similar ideas that are never seen together are disassociated.

Links can also add coherence in a hypertext document, providing direct connections from one node to the next, somewhat like a footnote marker or a “see above” note in the text. The common practice of creating ways for a web page reader to return to the overview space is a good example. Navigation, then, is an aspect of coherence so that hypertextual structure contributes to the overall coherence of the essay. Structure becomes a substitute for text, specifically text that is usually devoted to transition and orientation in a traditional essay. In other words, in the conversion from traditional text to hypertext, conventions of coherence are replaced by links, nodes, clusters of nodes, and so on. It is not possible, in hypertext, to distinguish form from content because the form is the content, or at least part of it.

5. Conclusion

When we look at how hypertext arguments are constructed by real writers who are grappling with the difficulty of order, rhetoric provides us with the best analytical tools for describing both the process and the products. We can employ concepts of textual and graphical coherence. We can use the broadened conceptions of spatial representations and metaphors to help describe a writer’s techniques of orienting the reader and suggesting paths through the argument. We
can use classical stasis theory as one strategy for getting around the issue of order. These traditional strategies, along with new cognitive rhetorics and new approaches to argumentation, form the rhetorical foundation for describing and prescribing arguments written in a variety of hypertextual environments.

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