Process-Product Ambiguity: Theorizing a Perspective on World Wide Web Argumentation

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Let rhetoric be defined as an ability, in each particular case, to see the available means of persuasion.

—Aristotle

It may be that we cannot see the truly new forms of rhetoric and theory that are emerging. What we see as senseless beauty may be the emergence of as yet unrecognizable new ways of making sense.

—Michael Joyce

One can only properly embark upon improving the production, analysis and evaluation of argumentative discourse if one has first made it clear what practice one desires to bring about, and how this accords with actual practice.

—Franz H. van Eemeren et al.

Webtexts privilege the exploration of problems; they also privilege the interactivity that occurs in a distinct moment of time when a user's navigational choices combine with an author's structure to create a unique text—in that moment. So what, then, are the available means of persuasion on the World Wide Web? Michael Joyce's quotation above suggests that presently we cannot articulate the nature of these means of persuasion for hypertext, that we can only see them as "senseless beauty." But as Franz van Eemeren and his coauthors argue, before we can begin a fruitful discussion of argumentative discourse, we must first define that senseless beauty, determine how to practice persuasion in the new ways made available by the World Wide Web, because, as Davida Charney points out, ideas of what counts as "persuasive" evolve in conjunction with a particular type of textuality and the categories of thought that it privileges (250).

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I'd like to begin, then, by offering a perspective on World Wide Web argumentation based on the particular type of textuality privileged by the Web: *In Web-based argumentation, interaction, made possible through an ambiguous interplay of the author's atemporal product and the user's temporal process of construction, forms the basis of persuasion.* This concept, called "process-product ambiguity" after Stephen Toulmin's view of argumentation, suggests that the author's product determines the user's process, but that the user's process determines the temporal product. This means that in order for authors to persuade using the World Wide Web, to change the attitudes of users, authors have to provide enough multiplicity or perspective for users ostensibly to create their own products. However, users' products are only partially their own because the temporal products they create are actually a subset of possibilities that authors enable through the control of structure (see Brooke 263). Paradoxically, authors enable and constrain user autonomy through links: authors enable user autonomy by building multiple potential paths for users to follow, but the links that authors use to connect one page to the next circumscribes user autonomy because the act of linking one page to the next is an authorial decision that circumscribes the possible interpretations a user can have about the jump from one page to the next.

It is the purpose of this article to examine this paradox, to theorize what might characterize World Wide Web argumentation, and specifically to give an account of the "process-product ambiguity" that enables Web-based argument. In what follows, I ground the notion of process-product ambiguity in a combination of Toulmin's model of argumentation and webtextuality because both rely on motion (process) and reasoning within constrained contexts (product). I conclude with a summary that draws together the discussions of process-product ambiguity, proposing a new perspective on argumentation specifically suited for the Web.

**Process-Product Ambiguity**

Whether it occurs in print, in visuals, or on the Web, "argumentation" is a slippery term. Is argumentation the domain of rhetoric, of persuasive communication designed to influence the responses and actions of another, or does it belong to the philosophers who attempt to discover truth through logic? The debate has raged in the West at least since Plato chided Gorgias for suggesting that argumentation is a practical art (rhetoric) used to govern human affairs and not, as Plato argued, an art used to discover the good and the true.
One thing, however, characterizes most definitions of "argumentation": they retain process-product ambiguity through an emphasis on the human interaction that occurs by causing competing lines of reasoning to intersect (Toulmin, Rieke, and Janik 14). Van Eemeren and his coauthors, for example, suggest the following definition of argumentation: "Argumentation is a verbal and social activity of reason aimed at increasing (or decreasing) the acceptability of a controversial standpoint for the listener or reader, by putting forward a constellation of propositions intended to justify (or refute) the standpoint before a rational judge" (5). Argumentation is, according to this definition, first of all a social activity that brings individuals into conversation: argumentation is directed toward other people who hold diverging viewpoints about a specific issue. The arguer’s goal is to propose lines of reasoning that the other will recognize as rational, to ground the controversial position in a set of propositions that demonstrate the arguer’s position is more valid—more rational—than the opponent’s. This definition suggests that in order for argumentation to exist at all, both human interaction—a process—and at least two lines of reasoning need to be present in order to create an argument—a product.

Below, I extend this analysis of process-product ambiguity and argumentation, weaving together Toulmin’s work on argumentation theory with a discussion of webtextuality to demonstrate that process-product ambiguity forms the foundation of Web argumentation. I examine process and product separately, further dividing the process component into “human interaction,” “multiplicity,” and “evolution,” and dividing the product component into “neighborhoods” and “links.”

Process
By definition, a process involves motion, usually that from a beginning through a middle to an end. Suggesting, then, that Web-based argumentation is a process implies that we can identify starting points, middle points, and ultimate results: WWW arguments are human interactions initiated by the simultaneous presence of multiple perspectives that cause interactors to move through an evolutionary process of justifying a position that results in conceptual changes. I address each of these three constituents—human interaction, multiple perspectives, and evolution—below.

Human Interaction. In The Uses of Argument, Toulmin suggests that "rational procedures and methods do not exist in the air, apart from actual
reasoners: they are things which are learned, employed, sometimes modified... by the people doing the reasoning” (212). We see from this quotation that argumentation begins with people: the starting point for any type of rationality, according to Toulmin, is human interaction because rationality cannot be divorced from human actions. Further, not only do arguments exist solely as a result of human interaction, an argument is sound only if it survives evaluation by those who participate in the construction of the knowledge field in which that argument occurs. (8). In other words, through interaction, people build spaces of shared knowledge against which claims negotiated by the interactors are more or less valid. The process of human interaction causes individuals to negotiate arguments (even if they aren’t very controversial), and from that negotiation develops a shared rationality that serves as the basis for the interactors to evaluate the original propositions. The starting point for argumentation is, therefore, human interaction.

Interactivity likewise defines webtextuality and forms the foundation of Web-based argumentation. Previous hypertext scholars have recognized that interactivity lies at the basis of hypertext (of which the World Wide Web is an instance), yet many have reduced interactivity simply to the user’s ability to manipulate the text. For example, Joyce suggests in “Hypertext and Hypermedia” that users exclusively constitute the form of hypertext (21), echoing his earlier “Siren Shapes: Exploratory and Constructive Hypertexts” in which he lauds the virtues of “constructive hypertext” because it allows users to reorganize a problem space in order to create and test different alternatives (42). Likewise, Jay Bolter’s important book, Writing Space: The Computer, Hypertext, and the History of Writing, suggests that the cultural status of writing is changing because the sacred place of authorship has been challenged by hypertext, in which readers are writers (3). In Bolter’s view, enabling the user’s creative agency comes at the expense of the author’s control over the text because, according to Bolter, empowering readers implies that the author has no influence over the way that a user derives meaning from a hypertext. Similarly, George Landow focuses most of Hypertext 2.0’s central chapter, “Reconfiguring Writing,” on the ways users navigate multiplicity, suggesting that the author’s role is merely to assist the user through devices that help users locate themselves in the information space.

Landow, Bolter, and Joyce are right: users do act to create a meaningful text. However, their discussions fail to notice that interaction, the foundation of both hypertext and Web argumentation, requires at least
two participants. Specifically, authors interact with users by creating the context that gives links meaning, effectively structuring the information that users can access. Landow’s, Bolter’s, and Joyce’s focus on user autonomy, then, breaks down, because digital texts encode an author’s limitations, creating a bounded context in which users can view and examine problems. In other words, persuasion occurs on the Web because interactivity reconstructs authorship. The user reconstitutes the author’s structure into a unique temporal work by selecting from among the choices that the author’s linkages allow, but the user does not alter the author’s spatial—argumentative—structure in any essential way. In Web-based argument, users become authors of a temporal, contingent text but their authorship is enabled—and constrained—by the atemporal linked structure that an author created before a user ever accessed the webtext.

Viewed from this perspective, webtexts demonstrate a particular instance of interactivity that echoes Toulmin’s emphasis on shared rationality. Specifically, in the case of webtexts, users and authors share responsibility for shaping the text, although the author has more influence in that construction than the user. Web authors must meet the need for participation that the Web allows by building sites that allow users at least some control over the outcome. But even with this “authoring” ability, users are not the only axis of organization because users, despite the variety, creativity, or extent of their choices, are still following preformulated paths that authors built. The interactivity that defines the Web exists only because an author created the possibility for it to exist.

Given this formulation, interactivity becomes not only a matter of effective hypermedia design, but, in fact, a basis of persuasion. Interaction is an ethical appeal in the webtext because it allows for the cooperative production of utterances around which consensus can be formed (see Duin and Hansen 92; Smolensky et al. 217). In short, since interaction is the starting point for both webtextuality and argumentation, it must be a fundamental consideration in the construction of a Web-based argument. Interactivity is, finally, a rhetorical feature that authors can manipulate in order to increase the persuasiveness of their documents, since the author controls the degree, the opportunities, and the forms of interactivity.

Multiplicity. Interactivity, the fundamental aspect of the World Wide Web argumentative process, entails multiplicity of perspectives: “The need for argumentation arises when opinions concerning [a] subject differ or are supposed to differ” (van Eemeren et al. 2). People will only
enter into a negotiation of difference if there is a difference to negotiate in the first place. Consequently, in order for the argumentative process to continue, new perspectives must be introduced and examined as the argument continues. In *Human Understanding*, Toulmin makes a similar point, suggesting that conceptual changes in a field of inquiry result from a “forum of competition” in which individuals weigh ideas against each other, revealing weaknesses and strengths exactly because multiplicity exists in a single problem space (140). Without the presence of multiplicity, then, there is no exigency for human interaction, since consensus already exists.

Webtextuality’s multilinear structure favors such treatment of singular problems from multiple perspectives by displacing them in time but not in space. The Web-based argument functions, that is, like a self-guided tour of intersecting paths through a forest. If a person walks through a forest on separate days and takes different but similar paths each day, the trees don’t change position, but that person’s perspective on those trees does change. In fact, trees that were visible on one path might not be visible on another. Yet, that second “text,” or walk through the forest, doesn’t change the trees’ positions; it merely offers a second view of the same trees enabled by exploring a second path. Similarly, Web-based arguments exist only in a moment of time that combines the user’s navigational choices with the options that the author’s link structure—the paths the author cut through the forest—allows. In other words, there is a material entity, the author’s text, that the user cannot affect because users do not constitute this object. This atemporal text—the intersecting paths—combines with the user’s navigational choices to create a temporal text that enables the user to see aspects of the material text in different ways and contexts according to the spatial arrangement that the user’s temporal progression creates (Aarseth 45–46). By analogy, the author chooses where to cut paths and where those paths intersect, but the user decides which paths to explore and which turns to make at each intersection. Web-based arguments, then, are “patterned yet provisional,” as Collin Brooke argues in “Making Room, Writing Hypertext,” because a combination of the author’s guidance and the user’s choices account for the arrangement in time of a particular Web-based argument (265).

Web-based arguments might be called “propositional,” therefore, because the medium allows authors to easily include the multiplicity of positions (different paths through the forest) that characterize most issues. Further, the multiplicity of perspectives enables interaction, since the concurrent presence of competing propositions and points of view
requires users to build connections among the propositions that they themselves encounter during their ostensibly autonomous exploration of the webtext (their walk through the forest). Web arguments, that is, privilege problems since the temporal character of webtextuality allows us to assume an "and/and/and" perspective on any given problem because the webtext is a maze of hierarchies, relations, and paths that can only be examined, tested and reconstructed by a user in a specific moment of time (see Douglas 155; Davis 37). In sum, the Web-based argument must—as Toulmin suggests all arguments must—contain multiple lines of reasoning to enable the interactions among users and authors. The multiplicity forces users to produce tentative conclusions (cognitive maps between patterns through the forest) that are relevant only in the context of a specific user's temporal interaction with a text (a specific walk on a given day), a text that is structured by an author who allows multiplicity (by cutting multiple paths through the forest) but nonetheless orders the user's experience of the multiplicity (by controlling the intersections, duration, and character of each path through the forest). In the case of Web-based argument, then, authors must include opportunities for interactivity by acknowledging the validity of several paths, yet guide users in a particular way.

Evolution. Web-based arguments, as I've been arguing, evolve through human interactions that negotiate multiplicity in time to construct contingent conclusions. Consequently, the arrangement, the narrative unraveling of the Web argument—like all arguments—is the key to Web-based argumentation (see van Eemeren et al. 22). Likewise, Toulmin's model of argumentation, first proposed in The Uses of Argument, suggests that arguments evolve through the accrual of knowledge that accompanies a temporal journey from grounds, through a warrant, to a claim, with occasional detours through backing, modal qualifiers, and rebuttals (99).

To adopt a metaphor from Foss, Foss, and Trapp's Contemporary Perspectives on Rhetoric (87–88), we can define each of these argumentative components in terms of a trip. The claim, the conclusion of an argument, answers the question, "Where are you going?" The grounds, the information that supports an argument, answers, "What do we have to go on?" The warrant, the authorization of the movement from grounds to claim, answers, "What road do you take to get from that point (the grounds) to that point (the claim)?" The backing offers additional support for the warrant and answers, "Why is that road a safe one?" The modal qualifier indicates the certainty of the step from grounds to claim and
answers, "How certain are we of arriving at that destination?" Finally, the rebuttal highlights circumstances when the movement from grounds to claim is not valid and answers, "Under what circumstances will we not be able to complete this trip?"

Toulmin's famous example of Harry the British citizen (presented in *The Uses of Argument*) demonstrates the importance of an argument's arrangement. A claim "Harry is a British citizen" relies on the warrant, "A man born in Bermuda will generally be a British citizen," and the grounds, "Harry was born in Bermuda." However, the actual textual arrangement would be in the exact opposite order: "Harry was born in Bermuda, and since a man born in Bermuda will generally be a British citizen, Harry is a British citizen."

The existence of rebuttals, backing, and modality in the argument's narrative is also important because they qualify the certainty of the claim. Consider the addition of the rebuttal, "unless both his parents were aliens or he has become a naturalized American," the backing "The following statutes and other legal provisions apply," and the modal "so, presumably" in the temporal progression of the argument. With these additions, the argument would read like this: "Harry was born in Bermuda. The following statutes and other legal provisions apply: A man born in Bermuda will generally be a British citizen, unless both his parents were aliens or he has become a naturalized American. So, presumably Harry is a British citizen."

We see, then, that argumentation is actually justifying a claim retrospectively, where proofs taken from the past justify claims in the present. This is not formal logic because a present claim does not necessarily entail a past proposition. A present claim is only valid if it evolves in a context wherein that claim can be acknowledged as probable. Arguments, therefore, evolve through the accrual of perspectives to create a context in which a specific claim's validity can be confirmed or refuted.

Similarly, in a Web-based argument, the user's choices form the temporal reality of the text: meaningful patterns emerge as the user crisscrosses the hypertext, where meaning is always potential until it is made visible in the present text. The user's successive attendings of a given issue in a webtext create a narrative progression, an argument, that evolves through the motion of exploring the interrelations and possibilities—the paths through the forest (see Joyce, "New Stories" 176–79). Or, in the words of David Kolb, an argumentative hypertext is "an accumulation of words and images and considerations that persuade" (328).
because the argumentative hypertext causes users to relate disparate ideas into knowledge structures and subsequently connect those past architectures of knowledge to build new ones (see Smith 269–73). Users are, in a sense, responsible for their own persuasion because the text evolves according to their choices about how to interact with the possibilities that the author provides.

Users never know, however, what they are missing in the presentational layout of the Web-based argument, what backings and rebuttals exist in the author’s atemporal structure, because unless their evolutionary process made those aspects visible, they don’t exist for that user. Consequently, the validity of the argument depends upon the context that the user’s temporal progression through the Web argument has made available to that point. And, as Toulmin reminds us in Human Understanding, that conclusion is necessarily contingent and temporary because in order to evaluate its validity, users must ask themselves, “Given the current repertory of concepts and available variants, would this particular conceptual variant improve our explanatory power more than its rivals?” (225). In other words, does the conglomerate of perspectives and representations work to explain the problem under investigation given the previous information that the user encountered while exploring the hypertext? The answer will likely be “Yes” in the situation of the Web argument that allows interaction because the users themselves construct the persuasive product. However, that persuasive product is also the result of connections that the author made possible through linking certain pages together. In a sense, then, the author’s role is similar to that of a mentor because the author encourages the user to make certain connections in certain ways without explicitly telling the user what to do. This process of negotiation and interaction between author and user returns us to the perspective offered at the beginning of this article: In Web-based argumentation, interaction, made possible through an ambiguous interplay of the author’s atemporal product and the user’s temporal process of construction, forms the basis of persuasion. What I haven’t treated is the nature of the author’s atemporal product that enables this interaction. I turn to the nature of that product in the next section.

**Product**

I suggested above that the argumentation process begins and ends with human interactions sparked by competing trains of reasoning. What specifically characterizes these chains of reasoning? If we could stop the
evolution of an argument, suspend animation to analyze single lines of reasoning, what could we say about them? We'd see that the persuasive product is, in fact, a series of lines, neighborhoods of links that create clusters of related information. Both of these characteristics of the product, neighborhoods and links, are addressed below.

**Neighborhoods.** Neighborhoods are lines of reason created by placing items into associative relationships with one another where one item is judged according to another and that item according to yet another. Taken together, the linkage of information creates structures that while actually associative are considered to be reasonable. Toulmin writes in *The Uses of Argument*, "Utterances are made at particular times and in particular situations, and they have to be understood and assessed with one eye on this context... The exercise of the rational judgement is itself an activity carried out in a particular context and essentially dependent on it" (182–83). In other words, the rationality of a neighborhood—a collocation of links—is determined by the context of relationships created by linkage. Authors link discursive items—data, claims, and warrants in this case—together and place them in roles where they function as parts of a system or structure from which users construct meanings (see Bergeron and Bailin 126). Neighborhoods, then, are activity spaces, contexts, created by users—but enabled and constrained by authors—that work to order disparate bits of information (see Schuler and Smith 138).

Web-based argumentation draws on this principle of circumscribed choices in order to persuade. The author creates a complex of options for the user by weaving multiple representations together into link structures according to hypothesized ways that users will engage the text. Essentially, authors create a net of small linear texts (paths through a forest) that intersect and expand one another, giving the appearance of a nonlinear text (see Kolb 329). In this carefully designed building of fragments, the author guides the user by making certain representations available at certain places and not at others, allowing user choice and multiple representations of information to coexist within a single persuasive purpose. The result is that the user sees a neighborhood (a set of connected trails through the forest), a network of possibilities that are thematically related but that do not necessarily represent a single "correct" conclusion. The argument, then, is rendered persuasive because it occurs in a context of relationships that users have the appearance of creating (they choose which turns and trails to take), but obscures the fact that users' choices were circumscribed. In short, Web arguments allow for self-regulated
sequences within a finite structure (see Charney 250).

Two recent pieces in hypertext theory will help clarify this point, a paper presented by Mark Bernstein at the Association for Computing Machinery’s “Hypertext ’98” conference titled “Patterns of Hypertext” and Farkas and Farkas’ “Guidelines for Designing Web Navigation.” Bernstein identifies ten of these “finite structures”: cycle, counterpoint, mirrorworld, tangle, sieve, montage, split/join, neighborhood, missing link, and feint (1–8). Farkas and Farkas similarly identify four “major information structures”: linear and multipath, hierarchy, web, and matrix (342). From all the possibilities that Bernstein and Farkas and Farkas identify, the matrix is the fundamental structure of an argumentative webtext. In building a matrix (see Figure 1), authors create the possibility for various representations of the same argument according to associative structures—represented here as horizontal links—or according to hierarchical structures—represented here as vertical links (see Marshall 63; Horn 101). That is, an argumentative webtext, as I suggested earlier, is a net of linear fragments joined together, and those conjunctions can be linear or associative: Web-based argumentation is two-dimensional, like a matrix, because one plane forms hierarchical—traditionally formulated—arguments, and the other plane links parts of arguments into associative neighborhoods (Horn 194).

To help clarify how the matrix structure works in practice, I’d like to describe a hypothetical Web-based argument assignment, demonstrating how the matrix structure enables process-product ambiguity by allowing users to navigate as they choose through a Web-based argument but how
the structure nonetheless circumscribes users' motion and thereby argues for a particular proposition (see Williams 130). Let's assume that our assignment concerns representations of masculinity. Students are to make an argument about masculinity based on representations they uncover in various media including print, online sources, radio, scholarly journals, and so on. The students research the issue by examining digital forms like the World Wide Web, and more traditional forms like magazine images, billboards, and television shows. Students then compile a multimedia database that includes screen captures, photographs, video tape, newspaper clippings, and their own thoughts recorded in a word-processed document. These items are then digitized (if not already digital), and each piece of "evidence" (one image for example) is constructed as a separate Web page that includes both the evidence and some summative commentary on the evidence.

Once students have produced a collection of separate Web pages where each page is dedicated to a particular piece of evidence, they can begin to hypothesize links among the pages, in essence constructing parallel arguments by linking separate pages together that argue, more or less, for the same representation of masculinity. These arrangements are hierarchical, where the first page is an introduction to that representation of masculinity and subsequent pages are evidence of the claim given in the introduction. The links are linear, moving from page one to page two and so on through the evidence (recall that in the matrix structure vertical relationships are hierarchical). Once students have composed multiple hierarchical lines of argument in this way—linking evidence in a purely linear fashion—they begin to crosslink the lines of representation thereby building associative structures, represented in the matrix structure by horizontal links.

If students were able to uncover four representations of masculinity, build four hierarchical evidentiary structures, and then link them at places where one line of reasoning suggests or elicits or refers to another, it might be represented visually, as in Figure 2. In Figure 2, each of the circles represents a single Web page and the lines represent links among Web pages. Each column has a numeral in the top circle that represents a particular position (the "Marlboro Man," the "Gay Professional," the "Suburban Dad," and the "Rap Musician") on masculinity that is supported by the material contained in the Web pages labeled a through c under the numeral, each of which represents a specific piece of evidence. Each of the columns, then, represents a single hierarchical/linear argument about masculinity because the first Web page is an introduction, and
subsequent ones to which users are guided through sequential links make the case for the claim offered in the opening Web page.

But each column is also linked to the other arguments (either through navigation aids or through in-text links) because all of the arguments reflect upon, complicate, or are otherwise link associatively to one another. In other words, the image of the “Marlboro Man” is linked to the image of the “Gay Professional” at several places because at those places one suggests the other by association. The “Marlboro Man” image

potentially complicates the image of the “Gay Professional” and vice versa because users—if they follow the associative links—will be forced to read the first in terms of the second. Users’ temporal progression, the context they build from the paths that an author enables, essentially forces users to assign meaning to links, but the meaning that users assign is in some ways controlled by an author who built a link between two pages in the first place. In other words, if a user comes to see the visual evidence presented in “Web page b” from the “Marlboro Man” column as a counter proof to the verbal text of “Web page c” in the “Gay Professional” column, that’s because the author enabled that associative relationship by supplying users with a link between the two pages. Web-based arguments, therefore, bring competing lines of reasoning into contact as Toulmin suggests arguments should, but authors subtly encode relationships they wish users to recognize by positioning specific pages adjacent to one another through links. As Nicholas Burbules argues, link structures express specific argumentative intentions by guiding users to recognize

Figure 2: Example of a Web-based argument's structure
or intuit the connection between specific pages in a Web site (110).

However, because links "simply carry the reader with them to inferences that could just as well be drawn quite differently, or could be criticized and rejected," users might not be able to articulate exactly how links encourage them to make meaning (Burbules 115). Therefore, the Web-based argument requires two additional Web pages: an introductory page that frames the issue under consideration and expresses the author's argumentative intentions, and a meta-commentary page that discusses the social and ideological implications made visible by linking the different representations and that expresses the author's position (see Kress and van Leeuwen 119–54; Glasgow 499; Forman 141). Figure 3 modifies the structure represented in Figure 2 to demonstrate how adding an introductory page and a meta-commentary page changes the argument's link structure.

An argumentative webtext entails a starting point, an introduction (labeled "I" in Figure 3), that orients users to the problem space they are about to enter. This parallels the idea in argumentation that interactors need to share some bit of common background, a shared rationality, in order for interaction to occur (Foss et al. 91). Consequently, the Web-based argument, particularly because designers can never know for sure the background that their audience brings to an argument, needs to orient users to the argument through a "prerequisite trail" (Horn 129). This "funnel" or "gateway page" introduces users to the problems the webtext will explore and introduces key points that users will encounter later in the argument. This introduction is argumentative because its only link is to the privileged line of reasoning, represented in Figure 3 by a one-headed arrow pointing to the introduction of the privileged position, in this case the "Marlboro Man" image. Although an author does not exactly articulate "this is my privileged position," the act of depositing users at the beginning of the privileged line of reasoning suggests as much and in fact forces users to view every subsequent page in the Web site in terms of the privileged claim because users see it before any other page that presents evidence. Consequently, users relate every subsequent Web page to the claim of the first line of reasoning, and it therefore becomes the basis of the context that users build in their temporal text.

However, users can choose not to follow the privileged line (line one in this case) once they leave the opening of that privileged line of argument, and so authors must compose a "meta-commentary" that reflects on the Web-based argument as a whole in order to allow users access to their intentions as authors. The meta-commentary is a synthetic
composition, one that parallels print forms of compare and contrast arguments because it juxtaposes the sequences—how are the positions different, how are they similar, what do the differences and similarities suggest about the topic—in order to demonstrate why the author privileges a particular perspective. Although the meta-commentary draws on the evidence presented in the separate lines of reasoning to make its case for a particular position, it nonetheless stands apart from the rest of the Web-based argument with access points only where an author chooses to place them. In other words, an explicit articulation of the author’s intentions is always potentially available in the meta-commentary, but, depending upon the links that a user follows, the user might not see the author’s intentions.

This recalls the discussion concerning the importance of the arrangement of the argument because the narrative progression of the argument in time—recalling Toulmin’s argumentative theory—determines what context and consequently what meanings users will be able to construct. Therefore, this idealized argumentative link neighborhood persuades by
ordering users’ reception of material in ways that an author determines while ostensibly allowing users the freedom to explore the space (see Selber 61–63).

**Links.** Individual links are a closely related structural cousin to neighborhoods because authors use individual links to build associative neighborhoods that shape the meaning users construct during their temporal progression. That is, as Peter Andersen argues, the paths that the author provides through linking are largely responsible for representing the purpose of the text (227).

The first article, to my knowledge, to explicitly address links’ argumentative function is Nicholas Burbules’ “Rhetorics of the Web: Hyperreading and Critical Literacy.” He writes, “The use and placement of links is one of the vital ways in which the tacit assumptions and values of the designer/author are manifested in a hypertext—yet they are rarely considered as such” (105). Burbules’ menagerie of link types (as he calls it), which derive from classical figures of speech (111–17), are summarized in Table 1. Individual links, as we see in Burbules’ taxonomy, express specific argumentative intentions by subtly guiding users to recognize or intuit the connection between specific pages in a Web argument. Users must ask themselves, for example, “What is the implied meaning that the juxtaposition of two pages connected through a link suggests?” (metaphor). Or “What does an icon of a flashlight have to do with a link to a search engine? (metonymy). Or “Why did my keyword search for Doris Day land me in a nude celebrity site?” (antistasis). Users may not be so articulate in expressing how they make meaning as these tropes suggest they could be, but as Burbules suggests, links imply

> beliefs about the world outside the Web. But because they do not specify or explain such connections, but simply manifest them, they are more difficult to recognize and question; often they simply carry the reader with them to inferences that could just as well be drawn quite differently, or could be criticized and rejected. (115)

Individual links, then, suggest connections and patterns of thinking by defining a fixed set of relations in a circumscribed order, and the ordered connection implicitly argues for a particular interpretation of a problem or issue.

Of all the rhetorical strategies Burbules identifies, metonymy is most important because it replicates the information-to-knowledge jump—users’ ordering of that small net of linear texts into a meaningful whole—
discussed above. To use one of Burbules’ examples, a jump from a page on teenage drug-use statistics to a page on rock music certainly implies something about both topics, but the relationship created through the link is not one that is specifically logical or abstract (105). These topics are related because an author linked them, not because of any immediately obvious logical connection. In linking the two pages together, the author is perhaps implying a cause/effect relationship that a user would identify and either assent to or contest. Either way, individual links are argumentative because they suggest to users ways to contextualize past informa-

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tion in terms of new information and thereby guide the users' construction of a temporal text. Links, then, are far more than referential points between bits of information; they are, recalling my discussion of Toulmin's point about presentational layout, persuasive devices because through links authors construct a narrative, a story in a specific moment of time that changes, defines, restricts, or enhances access to specific pieces of information according to an authorial purpose (see Burbules 103).

In short, individual links, like neighborhoods, are both product and process in that the author's product determines the user's process but paradoxically maintains the user's ability to ascribe meaning to a particular set of linked pages, which in turn creates, for that user, a specific product that doesn't necessarily include all the information available. The product determines the process, but the product visible to users only results from their reconstitution of the author's link structure in a specific series of moments in time. Web-based arguments, like all arguments, are linear because they occur in time, and so it's up to the author to control what users see at what point in time in order to present users with a solid case for a privileged perspective while simultaneously allowing the user to make choices among links. This restates the core notion of process-product ambiguity and demonstrates how neighborhoods and individual links participate in persuasion by asking users to choose their motions from among those the structure allows. Neighborhoods and individual links encourage users to recognize an order among the fragmentation, to assent to a knowledge structure even though it appears that users themselves are solely responsible for making navigational choices. This is as it should be in a World Wide Web argument; users must be encouraged to view themselves as the locus of control because the medium demands that they be. However, argument demands that authors control the flow of information in order to persuade, and authors do this by building neighborhoods of links and linking individual pages together. Web-based arguments, then, allow for both user autonomy and author control because the line between the author's product and the user's process is always blurred: process-product ambiguity.

Implications of Process-Product Ambiguity
I began this article by suggesting that webtexts privilege the interactivity of users and authors that occurs in a specific moment of time. Interaction, it turns out, plays the most important role in Web-based argumentation because a webtext only maintains process-product ambiguity as a function of the user's ability to create a temporal, contingent product.
Neighborhoods and individual links must allow users to control their own motion as they attempt to build coherent, temporal texts by navigating—paradoxically—paths and links that authors create to circumscribe users' choices and therefore guide users' constructions of meaning: Interaction, then, made possible through an ambiguous interplay of the author's product and the user's temporal process of construction, forms the basis of persuasion in Web-based arguments.

The context in which propositions occur depends largely upon the path users choose to follow through an argumentative webtext, and I argue, therefore, that authors need to regulate users' ability to interact while paradoxically enabling it. Process-product ambiguity attempts to represent how authors allow user choice but circumscribe that autonomy according to a persuasive purpose. Neighborhoods and individual links present authors with strategies to build an interactive webtext that allows users to formulate their own text as they seek to order the dissonance of competing representations but that nonetheless allows authors to guide the users' constructive process by encoding meanings in structural elements.

In this form of argumentation, users build arguments from fragments that authors present, and the validity of those arguments is determined by the context in which they occur, a context largely influenced by the neighborhoods and link structures authors build. So, only users, finally, can judge the validity of arguments because it is the users' temporal texts that reveal the grounds for establishing the probability of a conceptual change. An argument is reasonable only if a user has been allowed to traverse enough links to build the rationality behind a privileged position for themselves. Ultimately, then, interaction accounts for the persuasiveness of a Web argument because it asks the user to choose; it asks the user to define the context, to establish the grounds against which their own evolving conceptual understandings are tested. Users, however, only appear to build a meaning that is their own because, in fact, they are reconstructing a set of limited possibilities that an author presented by selecting from all available possibilities. The user's text is really a subset of a subset of possibilities enabled and controlled by the ways an author arranged the webtext.

Together, Toulmin's argumentative theory and process-product ambiguity name the senseless beauty of World Wide Web arguments. Together, they help us discover what are the available means of persuasion in the particular case of the Web. Together they help make clear what practice we desire to bring about. What remains is to determine how these
idealized forms, the vocabulary they give us, and their hypothetical outcomes accord with the actual practice of Web-based argumentation, a task that can only be accomplished by bringing these idealized forms to bear on the roiling arena of webtexts themselves.

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