Jay David Bolter

The New Dialogue

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Writing *Space: The Computer, Hypertext, and the History of Writing* (1991), the book from which this excerpt is taken, examines how computers are changing ways of reading and writing. Bolter argues that hypertext creates a new writing space that allows for a more interactive, associative, and non-linear form of writing and, by implication, way of thinking. In this selection, Bolter muses on the role of orality in electronic writing and speculates that hypertext’s multi-vocal, non-linear structure is similar to a Platonic dialogue.

While Bolter wrote *Writing Space* as a printed book, he also wrote an “electronic shadow” or a hypertext version of it using Storyspace, a hypertext writing program he authored along with writer and critic Michael Joyce. In the “electronic shadow” of *Writing Space*, Bolter writes: “[T]he rules of print are ignored. The argument falls into short paragraphs, sometimes single sentences. In place of a single reading order, the reader is given a choice of paths to follow. And I have tried to animate the text with several voices, some of which are skeptical about electronic writing” (*Writing Space*, p. x). As you read, you might consider how the style of the print version of “The New Dialogue” reflects the influence of hypertext.

**THE READING PATH**

A written text is a structure in space that implies a structure in time: writing turns time into space. In this respect a verbal text is like a musical score. The score is a visual pattern of barlines, notes, rests, and dynamic markings, but the pattern only makes sense when read as a sequence of measures. Most of us can read music, if at all, only by playing it on an instrument, but a good musician can read the score directly, activating the musical signs in his or her head. Those who can only read music by playing it are like people who read verbal texts by saying the words aloud: they are almost entirely absorbed by the unfolding temporal structure of the music. The good musician, however, can appreciate the second dimension, the “vertical” structure of the score as well. A thorough reading of text or music requires attention to the space as well as the time of the writing. And once again, the particular relationship between the time and space of the text depends on the writing technology used. In a medieval codex the spatial structure is the pattern of rubrication and various sizes of letters; in a printed book it is the arrangement into paragraphed pages; in the computer it is the pattern of textual windows and images on the screen. The temporal structure of a text is created by the reader’s moment-by-moment encounter with these elements.

If a reader is reading a story or an essay, the words create a rhythm of expectations. One word alludes to something earlier in the text or looks ahead to something to come. Expectations, explicit references, and allusions are also part of the purely oral arts of storytelling and public speaking. But the important difference between listening to a story and reading a book is that, while listeners simply allow the word to come to them, readers must themselves make the words move. What the reader sees on the page is a pattern of signs, and he or she takes in some portion of the pattern in each glance. Practiced readers of printed books take in whole words or phrases at a glance: their eyes make jumping movements that psychologists call “saccadic.” It is in the pauses between such jumps that a span of letters is viewed and recognized. (See, for example, Levin & Addis, 1979.) Beginning readers today (like most readers in the ancient world and early Middle Ages) focus on single letters and clusters and spell their way through each line. But whether the working unit is a single letter or an entire phrase, the reader’s task is to thread these units into a sensible order: to read is to activate verbal elements in time. The English “read” comes from the Anglo-Saxon *raedan*, which also means “to give counsel, to interpret.” This etymology reflects a belief that reading is a derived form of speech, that the reader is an interpreter who can make mute texts speak. The Latin word *lego*, which gives the Romance languages their words for reading (*lecture* in French, *lettura* in Italian), has a more interesting etymology. *Lego* literally means “to gather, to collect,” while one of its figurative meanings is “to make one’s way, to traverse.” By this etymology, reading is the process of gathering up signs while moving over the writing surface. The reader on a journey through a symbolic space—this image, which fits all technologies of writing, is particularly appropriate to electronic writing.

To read is to choose and follow one path from among those suggested by the layout of the text. In confronting an ancient papyrus roll, the reader had few choices. The earliest ancient writing was strictly linear: it was simply a concatenation of letters that the reader turned back into sound. In fact, some early Greek inscriptions were written in a style called *boustrophedon* (“as the ox turns”), in which the line ran from left to right, bent around, and then continued from right to left with individual letters also drawn backwards. The technique was perfectly linear: the text defined letter by letter a continuous path for the reader to follow. At the other extreme are the numerous paths offered by the modern newspaper, in which several stories are laid out on each page and therefore compete for the reader’s attention. A printed encyclopedia lies between these extremes, since each article is meant to be read linearly, but the alphabetically ordered articles themselves can be read in any order.
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The codex and the printed book both allow the writer to suggest many paths through the same work. But in most paged books as in the papyrus roll, one path dominates all others—the one defined by reading line by line, from first page to last. The paged book has a canonical order. However, once that order is established, the writer may want to suggest alternatives. The writer may incorporate in the text references and allusions that cause the reader to jump back and forth, at least mentally, as he or she reads. The printed book makes these acts of reference easier through the use of footnotes and page references. A writer using a papyrus roll was more likely to repeat himself just because it was hard to refer the reader back to a previous passage. In each writing technology and in each text, the question is: how and to what extent does the writer control the reader's experience of reading? To what extent does the reader actively participate in choosing his or her path through the text?

The question of control can also be posed in the absence of writing—in purely oral forms of storytelling and poetry. The Homeric poems, which we discussed as examples of oral composition... have sophisticated structures of expectation and fulfillment. But, like all oral texts, they have no visible structure: nothing in Homer depends on holding a text in one's hands and moving back and forth through the copy. Homeric poets and modern storytellers do not create books. This means, above all, that there is no canonical order to the story. The storyteller's tale is strictly linear, although it need not be fixed from one telling to another. The teller is free to deviate from the storyline without the fear that a written text will prove him or her wrong. There may be, as in Homeric poetry, a network of established heroes and their adventures, but that network can allow for additions and deviations. In fact, "deviation" is the wrong word: it is impossible for the oral poet to deviate from the path, because the poet makes the path as he or she goes. The story still has a temporal structure, a rhythm of expectations and fulfillments. The poet can digress from the main story and hold the audience in suspense, but the awareness of a tension between the fixed, visible text and the flow of spoken language is not available to oral poets or their audience. For example, there is nothing in storytelling that quite corresponds to the reader's sense that in turning the pages he or she is coming to the end of the book.

The Homeric storyteller chooses what events to tell and the pace of the telling, and the storyteller can adjust the tale in order to suit what he or she conceives to be the wishes of the audience. Since the storyteller and the audience are in immediate contact, the audience too has a measure of control over the telling of the tale. We cannot say how Homer's original audience exercised that control: they may have shouted advice, or they may simply have shown greater or less interest as the performer proceeded. We know how modern children express their approval or disapproval of the way a story is told. In any case, writing changes the intimate relationship between the creator and the audience. It is no use shouting at a novel whose plot is heading in a direction we do not like: the book cannot adjust itself to our wishes as readers. In that sense the reader loses control. In other ways the reader is more powerful than the listener, since each reader determines the pace of his or her own reading and can at least try to change the path through the text by scanning or skipping a paragraph, a page, or a whole chapter. In nonfiction or anthologies of stories, readers can read the chapters or sections in orders other than the one suggested. (However, they do so at their peril; they must always be conscious that the book itself defines the preferred reading order.) In general it is harder to hoodwink a reader than a listener, because the reader can stop at any time, reflect, and refer to a previous section of the text. The difference becomes obvious whenever we have the chance to compare oral and written presentations of the same material. When a politician or a scholar speaks (reads a speech), it is harder to find the flaws. If we later read the text in a newspaper or in a journal, we may see nothing but flaws in the argument. Whenever we do have both the written text and an oral performance, we become aware of a tension between the two.

PLATONIC DIALOGUE

Plato was acutely aware of the tension between oral and written discourse, and he created a genre of writing that both embodies and profits from that tension. Plato's dialogues combine the permanence of writing with the apparent flexibility of conversation. Each is the record of an impossibly artful philosophical discussion, and whatever its proposed subject, each dialogue is also about the difference between philosophy as conversation and philosophy as writing.

Plato's Socrates prefers conversation to writing. In the Phaedrus, he tells a story that seems to condemn writing as a vehicle for any true philosophy. Socrates and Phaedrus have been examining the nature of rhetoric and public speaking. Toward the end of the discussion, Socrates tells the story of the Egyptian god Thoet, a great benefactor of the human race. Thoet was an avid inventor, who gave us arithmetic, geometry, astronomy, draughts and dice, and the alphabet. The king of Egypt was another god named Thamus, and so Thoet took his inventions to the king and explained the purpose and value of each. Of the alphabet, Thoet said, "this invention... will make the Egyptians wiser and will improve their memories, for it is an elixir of memory and wisdom that I have discovered" (See Phaedrus, 274E in Plato, 1919, p. 563) But the king replied that writing would have just the opposite effect: "... this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practise their memory. Their trust in writing, produced by external characters which are no part of themselves, will discourage the use of their own memory within them. You have invented not an elixir of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom" (275A, p. 563). Socrates goes on to explain that written words on a page are dead things. They cannot, as he puts it, answer questions we pose of them; they cannot explain themselves or adjust themselves to various readers. The process of adjustment and explanation is possible in philosophical conversation, the kind of questioning and answering that Socrates himself practices. The best writing, Socrates tells Phaedrus, is that of the living word, written in the mind of the student by a wise teacher, for this word is active: "it knows to whom it should speak and before whom to be silent" (276A, p. 567).
The ultimate failure of writing did not prevent Plato himself from becoming one of the most influential authors in the ancient world. However, it is true that Plato's dialogue was a nostalgic form looking back to a time when Greek culture could do without writing. Plato lived in a period of transition in the history of literacy. Alphabetic writing was not new, but literacy had taken centuries to work its way into the fabric of Greek culture. By Plato's time, children were going to school principally to learn to read and write, and the lawcourts were beginning to rely on written documents rather than hearsay. Plato understood that a whole way of life was finally passing, a way of life based on the spoken rather than the written word. (See Eric Havelock, 1982.) Nostalgia, however, is not the key for Plato: the key is rather the question of control in the new space that writing creates.

Platonic dialogue is a consciously literary attempt to imitate philosophical conversation. As the *Phaedrus* points out, such conversation is spontaneous, capable of going in any direction in order to pursue a problem. And the dialogue itself seems to share that spontaneity: Plato appears to abdicate control of his text by reporting conversations between Socrates and his followers. Yet this apparent abdication gives Plato a subtler control over his reader. Plato leads and instructs his readers in the same devious way that Socrates leads and instructs his partners in the discussion—by getting them to acquiesce until they are too deeply involved in the argument to reject it. Still Plato the writer seems to envy Socrates the oral philosopher, because Socrates can adjust his questioning to his audience. He can guide his interlocutor along the proper path, securing agreement at each step. Plato as writer sets up his path, but he cannot be sure that the reader is following. The reader is free to make all sorts of misunderstandings that the text separated from its author cannot correct. The text cannot ensure that it will be read properly (in accordance with the author's wishes), because the text no longer belongs to its author. For Plato, then, writing is both too rigid and too free. Readers too may feel the limitation of the dialogue: they cannot truly enter into the staged conversation. They may be exasperated as Socrates brings his audience to some particularly outrageous conclusion. Readers may want to break in and change the course of the discussion, but they would only be shouting at a text. What is true of all writing is painfully obvious in a dialogue: the form invites the reader to participate in a conversation and then denies him or her full participation.

**FROM DIALOGUE TO ESSAY**

A Platonic dialogue is a hybrid, a compromise between oral and written controlling structures. Such hybrids were common in ancient writing, where many genres were intended for oral performance—including speeches, dramatic and lyric poetry, and perhaps highly rhetorical history. Writers in these genres used structures that could be appreciated in reading aloud or in reading to others who do not have their own texts. So, for example, such early prose authors as Herodotus made use of a technique called "ring composition." Herodotus would proceed to tell a story, then digress on an interesting detail, and then notify the reader/listener that he was resuming the original storyline. The narrative proceeded as a straight line with occasional digressive loops. In early ancient works of fiction and nonfiction, the dominant structure was usually the line. Plays took the reader step by step through events; history was written chronologically (with digressions). Early writing was paratactic; later, rhetorical writing became periodic, favoring elaborate sentences with many subordinate clauses. But both the paratactic and periodic styles were oral, not visual: they depended for their effect on hearing rather than seeing the text. Gradually in the ancient world, forms developed that were remote from the oral performance: the treatise, the encyclopedia, the handbook. Poets began to offer books of short poems that could be sampled; historians and academics began to write essays on scholarly subjects. But, except perhaps in some branches of philosophy, ancient texts continued to be strongly linear. And the papyrus roll with its simple visual layout suited this linear structure.

After the invention of the paged book, linear structure of course survived. People still wrote narratives to be read straight through. The oral character of the text waxed and waned throughout the Middle Ages depending upon the genre. Heroic and lyric poetry was destined for performance; medieval encyclopedias, like their ancient counterparts, were designed to be consulted by single readers. In general, however, the new form of the book placed greater emphasis on the second visual dimension. It became more common to make hierarchical structures visible on the page by using different letter sizes and forms as well as different colors of ink. The invention of printing reinforced this trend. Printing standardized the table of contents, which is a hierarchical description of the contents of the book. Hierarchy can be expressed in a tree diagram, and such diagrams appeared frequently in printed books from the 16th century on. (See Ong, 1958, pp. 74–83, 199–202, 314–318.) In the centuries following the invention of printing, the paragraph assumed its modern form both typographically and conceptually. And today all our major forms of nonfiction—the essay, the treatise, the report—are expected to be hierarchical in organization as they are linear in presentation. This is the paradigm for scholarly and scientific as well as business and technical writing. A scholarly essay should lead the reader step by step through its argument, making clear how each piece of evidence is relevant. The backbone of a technical report should be a careful outline of topics. Such an outline not only shows how each piece fits, but also directs the reader's movement through its parts. Whether we are told to write deductively or inductively, the result is still supposed to be a hierarchy of ideas and a carefully controlled reading.

This need to establish a hierarchy and to direct the reader is more than a matter of style; it now defines the professional activity of all academic writers. All scholarly research is expected to culminate in writing. The historian or scholar does research not for its own sake, but in order to have something to write. The same can be said of many of the social and even the hard sciences. And in order to be taken seriously, both scholarly and scientific writing must be nonfiction in a linear-hierarchical form. The historian's task, for example, is to establish causes and effects: to provide the reader with a consistent, analytical
path through some aspect of history. The historian would not be allowed to offer two or more explanations that bore no relation to one another. An historian might argue, say, that the Roman Empire fell as the result of a combination of factors (economic stagnation, barbarian invasion, Christianity), but he or she would have to offer a plausible story, showing how each factor lent impetus to the others. Social or physical scientists set up controlled experiments in order to exclude all but one or a few factors. When they write up their results, the goal is to tell a simple story of cause and effect, although in today's complex sciences this ideal is seldom achieved. The point deserves emphasis: only the linear-hierarchical style of argument is permitted in orthodox writing today. And this orthodoxy is approved by and built into our institutions of learning and research.

If linear and hierarchical structures dominate current writing, the computer now adds a third, the network as a visible and operative structure. The network as an organizing principle has been latent in all written texts, and Homeric oral poetry shows that the network is older than writing itself. Established by repetition in the minds of both the poet and the audience, the Homeric network contained all the mythological characters and their stories. The poet drew upon that network to tell each tale. After the invention of writing in the ancient world, it became the writer's task to establish his or her own network comprised of references and allusions within the text and connected to the larger network formed by other texts in the culture. From that time until the advent of electronic writing, the referential network has existed “between the lines” of the text—that is, in the minds of readers and writers. Now the computer brings the network to the surface of the text. The computer can not only represent associations on the screen; it can also grant these associations the same status as the linear-hierarchical order. It is as easy for the reader to follow an electronic footnote as it is to scroll to the next screen. The invisible network of associations becomes visible and explicit to an extent never before possible. (The network can never be fully explicit, however, because the verbal ideas of the text will always reach out beyond any given electronic text to other texts that the writer and reader know.) The electronic writer still has available all the techniques of hierarchical organization from the technology of print. He or she may still establish subordination and may still seek to define cause and effect. The electronic writer may embed hierarchical structures inside of larger networks, or networks inside of hierarchies. The line, the tree, and the network all become visible structures at the writer's and reader's disposal.

**THE END OF THE LINE**

I generally approach a question not like this: x —— but like this x → y. I shoot again and again past it, but always from a closer position. (Wittgenstein in Baker & Hacker, 1980, p. 23)

Plato was unwilling to set out his philosophy as a treatise, as a linear progression in which the writer assumes overt control of the argument. Today, and for the last 200 years in the mature age of print, academic writers have been reluctant to accept any form other than the treatise. But if the printing press reinforced that attitude, the computer calls it into question. Why should a writer be forced to produce a single, linear argument or an exclusive analysis of cause and effect, when the writing space allows a writer to entertain and present several lines of thought at once? This question was posed before the invention of the computer by writers, who felt constrained by conventional structures in both fiction and nonfiction. Susan Sontag has observed:

... a distinctive modern stylistics has evolved, the prototypes of which go back at least to Sterne and the German Romantics—the invention of anti-linear forms of narration: in fiction, the destruction of the "story"; in nonfiction, the abandonment of linear argument. The presumed impossibility (or irrelevance) of producing a continuous systematic argument has led to a remodeling of the standard long forms—the treatise, the long book—and a recasting of the genres of fiction, autobiography, and essay. Of this stylistics, Barthes is a particularly inventive practitioner. (Sontag, *A Barthes Reader*, 1982, pp. xiv–xv)

The French essayist Roland Barthes was indeed inventive in breaking down linear form. At every level, from sentence to a whole book, his texts were characterized by fragmentation and interruption. His classic *S/Z*, for example, is a commentary on a short story by Balzac. A commentary is by nature a series of interruptions, and in this case Barthes' comments overwhelm the story and pry it apart, both typographically and conceptually. Barthes' writing is decadent in the sense that it is a decline or falling away from an ideal form of writing for the age of print. The great monographs of the 19th-century essayists and historians (Carlyle, Ruskin, Burckhardt) showed what printing could achieve; by comparison, Barthes is intentionally playful and perversive. These traits he shares with such writers as Kierkegaard, Nietzsche, and Wittgenstein, each of whom in his own way attacked the development of systematic, linear argument.

Wittgenstein is a fascinating case. He was an influential teacher, who through his students defined the next generation of English linguistic philosophy. Like Socrates, he was a kind of anti-author. Unlike Socrates, Wittgenstein did write, although he published little in his lifetime. At least in his later years, he agonized over the task of writing. He would fill notebooks with short, unconnected paragraphs, but when he sought to put these paragraphs together for what would become his *Philosophical Investigations*, he was stymied. Wittgenstein wanted to produce a conventional treatise. He tells us in his *Preface* that he had considered it essential to set his ideas "in natural order and without breaks" (Wittgenstein, 1953, p. ix). But he found that...
Wittgenstein could not cast his philosophy in linear-hierarchical form; it had to remain a journey through a network of interrelated topics. This realization caused Wittgenstein more anguish than his Preface admits, and he often despised of ever finishing his book (Baker & Hacker, 1980, p. 23). At one point he wrote: “The only presentation of which I am still capable is to connect [my] remarks by a network of numbers which will make evident their extremely complicated connections” (p. 24). Baker and Hacker believe that he actually intended to publish his Philosophical Investigations as an interconnected network of entries. That is, he intended to number each entry and to indicate after each entry the numbers of other entries to which it was related (pp. 25–26). When the book was finally published, the entries were numbered, but Wittgenstein had abandoned the scheme of adding what we would call the links. (In writing their commentary on the Philosophical Investigations, however, Baker and Hacker have constructed diagrams to mark connections that they find.) At least for a time, then, Wittgenstein had conceived of the Philosophical Investigations as a true hypertext. But, unlike Barthes, Wittgenstein was a prose innovator in spite of himself. His notion of a book was still determined by the old model, and he wanted very much to find a perfect order for his ideas.

Wittgenstein and Barthes rejected linear argument, but not the physical form, the “look and feel,” of the printed book. The reader picks up their books, opens to the first page, and reads in the conventional way. Some writers have extended their attack to the typography of the book itself, creating antibooks that disrupt our notion of how a book should look and behave before our eyes. Glas (1974, 1976a) by Jacques Derrida is such an antibook. Each page of Glas is divided into two columns: the left offers passages from Hegel with comments, while the right is a commentary on the French novelist Genet. Paragraphs set in and around other paragraphs and variable sizes and styles of type give the page an almost medieval appearance. There is no linear argument that spans the columns, yet the reader’s eye is drawn across, down, and around the page looking for visual and verbal connections. And the connections seem to be there, as words and sentence fragments refer the reader back and forth between Hegel and Genet. Thus, an isolated passage in the right column of the first page seems to be referring both to the text and to the reader’s response: “Two unequal columns, they say, each of which—envelops or encloses, incalculably reverses, returns, replaces, marks again, cross-links the other” (Derrida, 1974, p. 7; see also Derrida, 1976a). In Glas Derrida lays down a textual space and challenges his reader to find a path through it. Whatever else he is doing, Derrida is certainly writing topographically, as if for a medium as fluid as the electronic.

Seven years earlier, in Of Grammatology (1976b), Derrida was already drawing a contrast between linear and nonlinear writing. He argued that linear writing was “rooted in a past of nonlinear writing, . . . a writing that spells its symbols pluridimensionally; there the meaning is not subjected to successivity, to the order of a logical time, or to the irreversible temporality of sound” (Derrida, 1976b, p. 85; see also Jasper Neel, 1988, pp. 105–107). Nonlinear writing had been suppressed, though never eradicated, by linear writing. But nonlinear writing resurfaced in the literature of the 20th century, when it seemed that the modern experience could not be recorded in the linear way. Derrida concluded that a new form of nonlinear writing was possible, and this new writing would entail a new reading of earlier texts: “. . . beginning to write without the line, one begins also to reread past writing according to a different organization of space. If today the problem of reading occupies the forefront of science, it is because of this suspense between two ages of writing. Because we are beginning to write, to write differently, we must reread differently” (Derrida, 1976b, pp. 86–87). In all this, Derrida was prescient, but he could not know that electronic writing would be the new writing to which he alluded. Derrida suggested that “[t]he end of linear writing is indeed the end of the book” (p. 86). But instead the new electronic medium redefines the book in a way that can incorporate both linear and nonlinear form.

**The New Dialogue**

A work like Glas provokes traditional readers, to whom it seems wrong or simply pointless to distort the printed page. In Glas, the network of relationships that normally remains hidden beneath the printed page has emerged and overwhelmed the orderly presentation we expect of a printed book. Glas belongs in the electronic medium, where such relationships are perfectly at home. In computer writing any relationships between textual elements can float to the surface; the computer invites the writer to reveal the inner structure in the appearance and the behavior of the text. An antibook like Glas would no longer be an antibook in an electronic edition, because it would work with rather than against the grain of its medium. Glas requires the reader to take an active, even aggressive role in constructing the text, and in this way too it anticipates electronic writing. The computer medium encourages a writer to open a new kind of dialogue with the reader. This dialogue replaces the monologue that is the conventional printed essay or monograph. Like the interlocutor in a Socratic dialogue, the electronic reader assumes at least partial control of the argument. In an electronic encyclopedia, for example, the reader’s queries determine what text will be retrieved and displayed; the queries cut a particular path through the network of encyclopedic material. The encyclopedia has always tried to allow for this kind of interaction, but now the electronic medium allows essays and monographs to be structured as dialogues in this same way.

In a traditional essay, destined for publication, the writer speaks apparently in his or her own voice and is expected to take responsibility for a text that will go out to hundreds or thousands of readers under his or her name. Publishing is fundamentally serious and permanent, and it is for this reason that plagiarism in science or scholarship is taken so seriously. A scholar or scientist cannot even retract his or her own previously published argument without embarrassment. By contrast, a dialogue speaks with more than one voice and therefore shares or postpones responsibility. It proceeds by apparent indirection and may gradually zero in on its target. A hypertextual essay in the computer is always a dialogue between the writer and his or her readers, and the
reader has to share the responsibility for the outcome. Instead of one linear argument, the hypertext can present many, possibly conflicting arguments. A hypertext on the fall of the Roman empire might include several explanations without seeking either to combine or to reconcile them. Instead of confronting a single narrative, the reader would then move back and forth among several narratives, each embodying one of the explanations. An academic historian would deny that such a hypertext is historical writing at all. But it is important to realize that the historian is judging by the standards of the conventional technologies of manuscript and print. Electronic writing threatens to redefine historiography in a way that reveals what Sontag has called the “impossibility or irrelevance of producing a continuous, systematic argument.”

The same redefinition applies to all academic disciplines, in which scholarship is now understood as the producing of systematic argument for publication. There will no doubt be great resistance to such a redefinition, since there is already resistance even to the idea of publishing conventional scholarly journals electronically. In this new form of publication, journals would be offered as diskettes rather than printed volumes. The diskettes would be kept in the library, and printed copies of individual articles would be made locally on demand. No doubt some articles in specialized journals would never be printed at all. Electronic publication would allow the same access to information, but it would destroy the cache of appearing in print. And traditional scholars rightly sense that the monumental, fixed quality of print is necessary to legitimize their arguments. For popular writing, the change should be less traumatic. Newspapers, magazines, and guide-to-books are all less wedded to the permanence of printing. The idea of an interactive newspaper or video-magazine no longer seems radical at all. Computer communications services already allow the reader to dial in from a home computer and read articles from various published newspapers.

Eventually, the new dialectic structure of hypertext will compel us, as Derrida put it, to “reread past writing according to a different organization of space.” Texts that were originally written for print or manuscript can not only be transferred to machine-readable form, but also translated into hypertextual structures. In some cases the translation would restore to these texts their original, conversational tone. Many of the texts of Aristotle, for example, are notes and excerpts from lectures that the philosopher delivered over many years; they were put together either by Aristotle himself or by ancient editors. For decades modern scholars have been trying to sort out the pieces. Printed editions make each text into a single, monumental treatise, but an electronic edition of Aristotle could record and present all the various chronological and thematic orders that scholars have found. This might be the best way for readers to approach the carefully interwoven philosophy of Aristotle; following the electronic links would allow readers to sample from various texts and move progressively deeper into the problems that each text poses. This moving back and forth is the way that scholars reread and study Aristotle even now. The computer simply makes explicit the implicit act of deeply informed reading, which unlike casual reading is truly a dialogue with the text.

Rather than eliminating works of the past or making them irrelevant, the electronic writing space gives them a new “typography.” For hypertext is the typography of the electronic medium. A text always undergoes typographical changes as it moves from one writing space to another. The Greek classics, for example, have moved from the papyrus roll, to codex, and finally the printed book. When we read a paperback edition in English of Plato's dialogues or Greek tragedy, we are aware of the translation from ancient Greek to a modern language. But we should also remember that the original text was without book or scene divisions, paragraphing, indices, punctuation, or even word division. All these conventions of modern printing are significant organizational intrusions into the original work. They make it easier to read Sophocles, but they change the Sophocles that we read. We would find it very difficult to read an English manuscript of the 14th century, or even an early printed book, because of the visual conventions. So it is not as if an electronic version will violate the sanctity of old texts for the first time: these texts have always been subject to typographic change.

When it comes to texts written in and for the electronic medium—and a few such texts have already been written—no translation is needed. 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 print, just as it will liberate those willing to experiment with a new form of dialogue. For writers of the new dialogue, the task will be to build, in place of a single argument, a structure of possibilities. The new dialogue will be, as Plato demanded, interactive: it will provide different answers to each reader and may also in Plato’s words know “before whom to be silent.”

Works Cited


