

Education, Reading, and the Brain:

Reading is writing is reading

Abstract

Reading is active, rather than passive, using and developing the constructive or synthetic functions of the brain. As we read we construct our own model out of data from the text and from our experience of life, and we arrange it by means of inherited and learned structures or systems. Like writing, but to a lesser extent, reading distances us from the information (in the text), and we perceive and can study the gap between self and not-self. Thus we can learn the contingency of information and the parallel contingency of self or, to put it another way, the relatedness or relativity of persons. Texts and persons have to be validated or authenticated; we judge the new by the old, and we learn from the new. In pedagogical terms, we should teach reading by teaching non-reading, i.e., television, film, data-processing, word-processing.

In "Education, Writing, and the Brain" (1982) I argued that writing is a natural talent which uses and develops the constructive or synthetic functions of the brain; in a sense it is the matter of education. The articles by Pool, Booth, Poirier, and Cavell in the Fall 1982 issue of *Daedalus* suggest a way to continue this discussion to include reading. Those writers consider print culture and video culture; reading appears more clearly as we try to come to some understanding of "viewing" television and "word processing" by means of computers.

"Reading," says Poirier, "is writing in that it produces

language; writing is reading in that it interprets the possibilities in what has already been written, for what can be written" (p.62). This seems to complement my prior argument about writing and the brain if we amend it thus: reading is writing in that it produces language (de Saussure's **parole**) in the mind (or brain) in the form of a verbal construction by means of de Saussure's **langue** or of a model consonant with existing models (in the memory), and writing is reading in that it interprets the possibilities, that is, selects from the store of verbalized experiences and verbal messages, which include both experience and literature, taking from what has already been written (said, heard, remembered) for what can be written, constructed, created as one's own version(s) or model(s) (de Saussure, 1959).

In between reading and writing is the program. When we write we construct a program and transmit it to one or more receivers in a form we consider apprehensible. When we read we consider a program that has been presented to us, and we selectively accommodate it to existing programs already stored in our diffused memory system. Reading is writing in that you make a new program or revise an old one in your head (because your brain works by patterns/programs), and writing is reading because you have to read what you are writing as you write, editing fast and furiously even as you form the letters, words, and sets of words. We can hear this editing clearly as we listen to speech, ours and others'.

The four **Daedalus** articles mentioned make particular contributions to this discussion, and I would start with a pmint made by Booth. He is Concerned with the actual process of apprehending art, the here-and-now effect, what goes on in art, which he defines to include "every piece of imitation-life, every experience invented for the sake of supplementing or counteracting or criticizing or evading or enhancing 'life' " (Booth, p.34).

Model construction

As we read, then, we are constructing a model out of experience and literature, and at first we do this for the purposes of clarification to ourselves, for our own benefit in other words. Our early use of language, after primitive signals of hunger and discomfort, is for clarification, first of language itself; the baby practices many sounds and gradually eliminates those irrelevant to the sounds of the language community into which he or she has been born. We do not seriously attempt communication with others until, so to speak, we are ready to join the human community, and it seems to be the consensus that this takes place around the age of seven. Being read to and later reading to ourselves is magic, and this aspect of reading, or art, in Booth's sense, is permanent. Early reading thus does not seem to differ

much from "viewing" in the sense that there is no awareness of the information-processing self, there is no distance between the self and the not-self. In a resounding phrase Henri Frankfort (1967) described early man "entangled in the immediacy of his perceptions" (p.17).

Literacy, the use of writing and reading, is a means of disentanglement, of distancing the self from the not-self. It is, like so many blessings, mixed, with one hand giving us a way to see ourselves perhaps as others see us and with the other taking away our awareness of our interdependence on other people and on our shared environment. The writer is particularly isolated, and the more "creative" he or she is, the more isolated - and frequently, it seems, the more difficult to live with. The reader is also comparatively isolated, as Augustine realized when he saw Ambrose reading silently to himself.

This becomes clearer when we read in the article of Pool the following description of "processing" a text by means of a computer terminal:

Think about a teacher in the future using computer-aided instruction. Like every teacher today, he would like to make modifications in the text. On the computer he can do so and does. What is in memory becomes his own version, changing with the years. (Pool, p.27)

Pool is using "text" in the sense of textbook, and with reference to textbooks what he says is unexceptionable. But "text" also designates the words as set down by a particular writer or author; to use the somewhat misleading label of the printer Stephanus, the Textus Receptus (like "the faith once delivered to (some of) the saints," his text was accepted by some, not all). Pool considers this kind of text:

Think about a literature or drama course. What better exercise is there than to take a text and try to improve it. (sic) Reading can become more active and interactive. The penciled scribbles in the margin can become part of the text and perhaps part of a growing dialogue, as others agree or disagree. (p.27)

Pool notes that this raises some question:

There are problems in that kind of fluid dialogue. One often needs to identify the original, or official version. Conventions will undoubtedly be developed for labelling variant versions, but there is no way of preventing their proliferation. If one can read a text (from wherever it originates) on one's own terminal, it means that that text has somehow been transmitted to one's

own computer memory. Once there it can be copied, modified, and transmitted at will. (p.27)

These possible modifications have consequences for the concept of copyright, and the implications are, as he says, "horrendous." But Pool continues:

The proliferation of texts available in multiple forms, with no clear line between early drafts and final printed versions, will overwhelm any identification of "the world's literature". (p.27)

While Pool raises the prospect of not only the possibility but the likelihood of destroying literature, it will be worth trying to figure out an appropriate response to it; and this will be considered at a later stage of this discussion. Pool's concession does not seem adequate, as stated: "For many purposes, canonical versions, catalogues, and also compensation practices are essential" (p.29).

Implications of text destruction

What will be destroyed if text, in the traditional sense, is lost, is precisely the line between the self and the not-self. The line is shifting and often faint, and it is to be noted that there are good reasons for erasing it. To separate ourselves too strictly from our social and natural environment is not just passively to isolate ourselves; it is actively to incline us to use and abuse other persons and things. One of the truly essential modes of thought is to live and work with the knowledge that we are part of the world and the world is part of us. Gregory Bateson's (1972) image of the blind man is cogent: Where does the system man-arm-hand-cane-sidewalk-ground-earth . . .end? There is also the new view of life as actually a function of the world, organized as a huge set of interacting systems of atmosphere, surface, core, each with its own role, each with its own set of physical and chemical processes. Closer to our theme in this essay, Booth (1982) points out that one "loses" oneself less in a book than in a film; screened events are "there" and we have to get into them. Even more, he adds, the television is always "on," continuing indifferent to us. We do not "run" or "play" it, we do not take it up as we do a book. Cavell (1982) adds that since it is always on, always going, always there, we are never alone. Television is "company," which is why it is a real gift to the shut-in.

If there are grounds for erasing the thin line between self and not-self, there are also grounds for preserving and using it, and this is what the literate mode is for. If I am to be enlightened and enriched - educated - by the life work of the poet Yeats, for example, I must understand the differences

between his early and later drafts, between his first and final versions, between his version and the editor's, and between theirs and the printer's, between the printed version and the critics', between the critics' and the teachers', and at last between theirs and mine; in a word, between those selves and myself, existentially between them and my idea(s) of them, between the reality and my image or idol.

Yeats is a particularly good example, although it is true of all artists and their work, because his poetry is the result of literally a life-long, self-conscious construction. In his poetry we can see and study the making of a self, of whatever it is that expresses or gives form and function to whatever he is. And we can see further that there is a difference between the self he is responsible for, which he can only construct as mask (or model), and the self that impinges on or encounters the reader's self. Yeats' poetry is a model of human relationships; we relate to ourselves and to each other by means of masks or images or concepts, as we relate to the world by means of models. Only angels have direct, intuitive apprehension.

To lose the text is to lose any chance of criticizing or evaluating the versions. We can rely on what we know of the past, of what people have thought and felt and set out for us, only to the extent that we can evaluate the fidelity of the actual texts. Granted that the texts we have represent only a small part of what people have felt and thought, and that they come from a small set of people living at any given time, they are **all** we have, except the testimony of our contemporaries, which is generally so similar to our own notions that it is virtually impossible to be deeply critical.

It is one of the marvels of history that so much has been preserved so conscientiously. Sometimes, as in the Gnostic library discovered in 1952 at Nag Hammadi, we find examples of what has been "lost," and that reassures us of the value of what we have. As Pool (1982) notes, sometimes they had to make use of the idea of sin to improve scribal accuracy, but one has to come to modern times and modern standards of accuracy before finding such reliability. If there are some nitpickers - and one thinks of Edmund Wilson's (1968) strictures on certain works of the Modern Language Association - who want to overdocument trivial data, it is nonetheless essential that we verify our sources and use the best versions we can.

Texts and contingency of all thinking

One value of the texts and, more particularly, the study of texts **per se**, is that they are the best evidence we have of the contingency of all human thinking. We find the errors and ignorance of earlier generations quite incredible, but we in turn

will probably appear as idiots to the people who read our traces in coming ages. But we must also be aware of the contingency of our thinking here and now, as well as the contingency of our contemporaries' thinking. Our best is no more than relative, which many people find simply intolerable. That, however, is enough because it is relative not to some abstraction but, instead, to the thinking and expression of other human beings. Using our best we can negotiate with our world and our society and survive in our own form of that uneasy freedom bequeathed to us by Adam and Eve.

The value of reliable texts is not confined, however, to knowing what was said or written or how it was preserved, for we need examples or models of accountability. To say that it is important to have critical texts is far from saying that we have all the information there is or even that we have the most important information in written form. And it is not to deny the usefulness of the kind of cooperative information sharing described by Pool. The electronic dialogue which computer networks made possible, "conversational interactive computing," can only be seen as a boon to the human community, and we may retain Marshall McLuhan's image of the "global village" even as we appreciate how greatly we must modify it.

For when everyone is responsible, no one is responsible; and when no one is responsible, I am not responsible. And if I am not responsible, I am helpless, and if I am helpless, "the hell with it." I must be responsible for what I say and I must take seriously your responsibility for what you say, otherwise there is no communication and we return to the age of the sacred text and the monopoly of authoritative interpreter. This produces, and evidently has always produced, reactive, if not destructive, responses - at best confusion and at worst rebellion. What the Hebrew Scriptures, with their Jewish and Christian communities, have created through time was not so much conformity as criticism because the text was never binding as such but instead was always the foundation upon which the people constructed their faith. It was not a sacred text imposed by authority so much as an authenticated text forming one member of a continuing dialogue, and the authentication came from the experience of many people, in many circumstances, who found it a valid starting point for their discussion and study of the vicissitudes and exigencies of life. It was authenticated in the community, by the community, for the community.

The contrast between this historic use of text and a message presented without documentation, an apparently self-authenticating text, could have been seen in the early days of general television when Senator McCarthy of the United States, was given something like total coverage, total exposure. He was given every eye as he waved a paper in the air and intoned that it was a list of subversives. It was no list, and he had no list, but many, many

people surely said, "There must be something there because they would not show it on TV if there wasn't. He must have something or they wouldn't give it so much network time. Where there is smoke, there must be fire." The point is not whether or not the Senator's allegations were seriously believed by everyone; the point is that they were taken seriously on no basis at all except that they were there.

Evidence is needed

And being there is not enough. Only evidence is enough. Messages which cannot by their nature include any evidence about themselves, messages without metamesages, to use the terminology of Bateson (1972), cannot function in the system of precedent; they cannot be made part of our common experience. Every decision made without evidence, precedent, or dialectic, appears to be **de novo**, original, pure, even innocent - the fallacy of the new Adam - but of course it is not. It is made on the basis of what the tradition or authority or, in the case of commercial television, the transmitter, has selected to present to us. It can make use only of our prejudices, our pre-judgments, not our considered and tested judgments, our unexamined and unexaminable inclinations. To decide on the basis of uncriticized messages, or non-texts, is not decision; it is **like** decision. Similarly it is simulated decision, as the allegedly free choice between virtually interchangeable products available to consumers on the basis of their marketability is not free choice at all; it is **like** free choice. If simulation is the virtue of electronic information-processing, it is also its vice.

Maybe we do not have to reform the world. Maybe we do not have to condemn and reject the whole system of electronic communication and try to lead the world back to an imagined medieval state in which a handful of revered texts existed in the safekeeping of official interpreters (who dictated their lectures to note-taking students) and who could tell the uninformed what to think. Maybe we can safely and constructively use many forms of data storage and retrieval in making our increasingly complicated and delicate decisions.

If we defenders of literacy tend to undervalue viewing and monitoring and to overvalue writing and reading, it may be that adversary procedure is inevitable, given the binary nature both of information-processors, i.e. brains, and of information processing, i.e. dialectic. At least, straw men feel no pain. The only kind of choice we can perceive is between A and Not-A, and so that is the only kind of choice we can make. It is followed by the necessity of choosing between B and Not-B, but it is accompanied by the necessity of choosing between C and Not-C and D and Not-D at the same time. We function simultaneously, rather than sequentially, and so we perform on the basis of probability, rather

than of linear logic or causality. But statistical probability is something we construct, laboriously and clumsily, and what we perceive and believe we act on is succeeding sets of alternatives.

In discussion, then, we attack the position of the advocates of video culture, but we are obliged to move on to construction. We do move on from attack to construction, because we have to, and the discussion will prove valuable if we move to something new. And it may be new to suggest that both media have a function, and that the function of each is distinct. To do so we pick up an idea that is suggested in the articles of Booth and Poirier (1982) and stated in the article of Cavell (1982). It is that the power of television lies in its presentation of an event. This is the power of theatre and of the circus and of going to games instead of hearing or viewing them from a distance. Playing games, incidentally, is more like writing, and watching is like reading. In a word, in Ed Murrow's word, we are **there**.

We may grant that much of what goes on in the theater is not interesting, not surprising, conventional, even banal; it is the purpose of rehearsal, after all, to reduce the chances of the unforeseen. Adventure, said Stefansson, is the result of bad planning. We treasure the moments of surprise almost in proportion to the comfortably unsurprising nature of the great majority of events. This is an expression of the idea that information comes from the novel; the familiar, as Edward Young pointed out in 1759, provides more of what we already know. Certainly most of what appears on the television screen is repetitive, and most of the value of television is, as Booth and Poirier (1982) indicate, just this uneventfulness. It communicates to the relatively isolated the sense that even if they are on the bench, temporarily or permanently, the game is going on; this is its value to people who are shut in, whether by age, illness, or prison.

But amid all the repetition, through the comforting dullness and sameness of it all, occasionally bursts a flash of the light of reality. If television shows us anything, it shows us, rarely and unintentionally, the quality of life. Since the camera operator cannot edit in the way that a film maker, collectively, can, what television shows is very much like what our eye sees; it is true *cinema vérité*.

Differences between television and books

We may be distracted by the limits of the medium in its commercial form, and Cavell (1982) notes that broadcasting may not be its most important use. To pay for itself it has to sell stimulation; it is so artificial it must pose as, if not real life, at least **like** real life. Since, as noted, reality flashes through from time to time, this pose has some basis in truth. Commercially it

shows us endless varieties of peak performance, whether in the advertisements or in the athletic contests, and this seems to be an acceptable diet for many people, although it is the nature of television that people will look at and keep looking at almost anything. It may be that some of the television-inspired violence is caused by a desperate attempt to reach some kind of peak performance in imitation of the ones so consistently shown on the tube. What television cannot show is the training that lies back of those performances.

For, as Cavell (1982) shows, using his studies of film to suggest a way of seeing the differences between books and television, books show growth and development and working things out, a dimension or aspect of life that is impossible to treat on television or, for that matter, as Booth (1982) shows, by pictures or images. Books tell how things get complicated and show the possibilities of finding relative simplifications by which we can survive in complication. Books show us how much we can do. Television, by contrast, presents the engulfing uneventfulness of life punctuated as it is by unique accidents, unexpected and unexpected; they come and go so fast that they cannot be glimpsed, much less captured, by print. A third mode is film or poetry which does not so much show us things, though that is where they start, as make us look, by editing or selecting.

In retrospect, some conclusions

In the scope of this essay I have simplified a great deal, and as we find ourselves still in the early stages of the use of new media, we have some obligation as educators to study and figure out more of their implications. But as my concern was previously to find some relation between what we do as teachers with writing in the light of our preliminary understanding of brain function, so what I am aiming at is reading. It was in order to get to reading that it seemed useful to examine non-reading, to give it a label for the purposes of debate. It now appears that it will require further argument to deal with reading as it is beginning to appear, and it may not be amiss to say that "Education, Poetry, and the Brain" is slowly gathering itself.

But as a preliminary to further discussion I would offer the proposition that reading is for school. People do not read much after school or college, and maybe they don't have to, any more than they have to do algebra. Some of them will, of course, and we need not confine ourselves to the preparation of graduate students in literature any more than our colleagues in mathematics should confine themselves to the preparation of professional mathematicians. It may, in other words, be a delusion to think that we teach writing and reading so that people can do it in the "real" world. Maybe we should deal with reading as we should deal with television and computers.

In outline, then, reserving a fuller discussion for later development, we should put students to work on producing some television programming so they can find out at first hand the possibilities and the inadequacies of the medium. A semester course is sufficient to demonstrate its strengths and weaknesses, and it is worth noting, although we can do no more here, that a semester course can barely introduce the art and craft of film making. The power of television is impressive, but its limitations are equally impressive.

We should put students to work on computers. This is obvious enough, but it is not generally true that computers have yet taken their place in education to the extent that they deserve. To put it summarily, students should be familiar with computers so they can work them, so they can understand how information is processed by them, and so they can see what kinds of information which may well be relevant cannot be processed by them. Instruction in the use of computers means writing, not just using, programs, and the most exciting aspect of this medium is that we cannot draw any line between the technical-vocational kind of program writing and the scientific-experimental. From the point of view of education computers have broken down the line between intellectual work and the "real" world.

But, to come to reading, we perhaps should teach reading not so much with the idea of deriving practical information from printed texts, which ranks with writing a job application as a criterion of writing skill, or with the idea of becoming acquainted with the great ideas, principles, and values of Western Civilization, as with the idea that the study of literature is the study of the principal metaphors used in the real world. As the program, in the present argument, is between writing and reading, so the poem, the "made thing," the literary work, is between the mind and the world. To study poetry, the fifth essence of writing, is to learn that the data in our minds are not "raw" but are already sorted and arranged. Information is data that have been arranged, and that have presumably been somewhat altered in being arranged. Human communication is between more or less muddled minds, and the study of literature is perhaps the best way to discount this slightly dismaying and certainly humbling fact.

REFERENCES

- Augustine. Conf. VI, iii, 3.
- Bateson, Gregory. (1972). *Steps to an ecology of mind*. New York: Ballentine Books.
- Booth, Wayne. (1982, Fall). The Company We Keep: Self-Making in Imaginative Art, Old and New. *Daedalus*, III, 33-61.
- Bronson, David B. (1982, Spring). Education, Writing, and the Brain. *The Educational Forum*, XLVI(3), 327-335.
- Cavell, Stanley. (1982, Fall). The Fact of Television. *Daedalus*, III, 75-96
- de Saussure, Ferdinand. (1959). *Course in General Linguistics*. New York: Philosophical Library. (Original work published in 1915)
- Frankfort, Henri, et al. (1967). *Before Philosophy*. Baltimore: Pelican Books. (Original work published 1946, *The Intellectual Adventure of Ancient Man*, The University of Chicago Press)
- Poirier, Richard. (1982, Fall). Literature, Technology, People. *Daedalus*, III, 61-74.
- Pool, Ithiel De Sola. (1982, Fall). The Culture of Electronic Print. *Daedalus*, III, 17-32.
- Stefansson. A quote recalled from reminiscences of author's father. Source unknown.
- Wilson, E. (1968, June). *New York Review of Books*, 15, 12-19.
- Young, Edward. (1759). *Conjectures on Original Composition*. (in Noyes, R. ed. 1956. *English Romantic Poetry and Prose*, p.21. New York: Oxford University Press).