Iliad provides him with examples of bicamerality in its unselfconscious characters. Jaynes dates the *Odyssey* a hundred years later than the *Iliad* and believes that wily Odysseus marks a breakthrough into the modern self-conscious mind, no longer under the rule of the 'voices'. Whatever one makes of Jaynes's theories, one cannot but be struck by the resemblance between the characteristics of the early or 'bicameral' psyche as Jaynes describes it – lack of introspectivity, of analytic prowess, of concern with the will as such, of a sense of difference between past and future – and the characteristics of the psyche in oral cultures not only in the past but even today. The effects of oral states of consciousness are bizarre to the literate mind, and they can invite elaborate explanations which may turn out to be needless. Bicamerality may mean simply orality. The question of orality and bicamerality perhaps needs further investigation.

3

SOME PSYCHODYNAMICS OF ORALITY

SOUNDED WORD AS POWER AND ACTION

As a result of the work just reviewed, and of other work which will be cited, it is possible to generalize somewhat about the psychodynamics of primary oral cultures, that is, of oral cultures untouched by writing. For brevity, when the context keeps the meaning clear, I shall refer to primary oral cultures simply as oral cultures.

Fully literate persons can only with great difficulty imagine what a primary oral culture is like, that is, a culture with no knowledge whatsoever of writing or even of the possibility of writing. Try to imagine a culture where no one has ever 'looked up' anything. In a primary oral culture, the expression 'to look up something' is an empty phrase: it would have no conceivable meaning. Without writing, words as such have no visual presence, even when the objects they represent are visual. They are sounds. You might 'call' them back – 'recall' them. But there is nowhere to 'look' for them. They have no focus and no trace (a visual metaphor, showing dependency on writing), not even a trajectory. They are occurrences, events.

To learn what a primary oral culture is and what the nature of our problem is regarding such a culture, it helps first to reflect on the

nature of sound itself as sound (Ong 1967b, pp. 111–38). All sensation takes place in time, but sound has a special relationship to time unlike that of the other fields that register in human sensation. Sound exists only when it is going out of existence. It is not simply perishable but essentially evanescent, and it is sensed as evanescent. When I pronounce the word 'permanence', by the time I get to the '-pence', the 'perma-' is gone, and has to be gone.

There is no way to stop sound and have sound. I can stop a moving picture camera and hold one frame fixed on the screen. If I stop the movement of sound, I have nothing – only silence, no sound at all. All sensation takes place in time, but no other sensory field totally resists a holding action, stabilization, in quite this way. Vision can register motion, but it can also register immobility. Indeed, it favors immobility, for to examine something closely by vision, we prefer to have it quiet. We often reduce motion to a series of still shots the better to see what motion is. There is no equivalent of a still shot for sound. An oscillogram is silent. It lies outside the sound world.

For anyone who has a sense of what words are in a primary oral culture, or a culture not far removed from primary orality, it is not surprising that the Hebrew term *dabar* means 'word' and 'event'. Malinowski (1923, pp. 451, 470–81) has made the point that among 'primitive' (oral) peoples generally language is a mode of action and not simply a countersign of thought, though he had trouble explaining what he was getting at (Sampson 1980, pp. 223–6), since understanding of the psychodynamics of orality was virtually nonexistent in 1923. Neither is it surprising that oral peoples commonly, and probably universally, consider words to have great power. Sound cannot be sounding without the use of power. A hunter can see a buffalo, smell, taste, and touch a buffalo when the buffalo is completely inert, even dead, but if he hears a buffalo, he had better watch out: something is going on. In this sense, all sound, and especially oral utterance, which comes from inside living organisms, is 'dynamic'.

The fact that oral peoples commonly and in all likelihood universally consider words to have magical potency is clearly tied in, at least unconsciously, with their sense of the word as necessarily spoken, sounded, and hence power-driven. Deeply typographic folk forget to think of words as primarily oral, as events, and hence as

necessarily powered: for them, words tend rather to be assimilated to things, 'out there' on a flat surface. Such 'things' are not so readily associated with magic, for they are not actions, but are in a radical sense dead, though subject to dynamic resurrection (Ong 1977, pp. 230–71).

Oral peoples commonly think of names (one kind of words) as conveying power over things. Explanations of Adam's naming of the animals in Genesis 2:20 usually call condescending attention to this presumably quaint archaic belief. Such a belief is in fact far less quaint than it seems to unreflective chirographic and typographic folk. First of all, names do give human beings power over what they name: without learning a vast store of names, one is simply powerless to understand, for example, chemistry and to practice chemical engineering. And so with all other intellectual knowledge. Secondly, chirographic and typographic folk tend to think of names as labels, written or printed tags imaginatively affixed to an object named. Oral folk have no sense of a name as a tag, for they have no idea of a name as something that can be seen. Written or printed representations of words can be labels; real, spoken words cannot be.

YOU KNOW WHAT YOU CAN RECALL: MNEMONICS AND FORMULAS

In an oral culture, restriction of words to sound determines not only modes of expression but also thought processes.

You know what you can recall. When we say we know Euclidean geometry, we mean not that we have in mind at the moment every one of its propositions and proofs but rather that we can bring them to mind readily. We can recall them. The theorem 'You know what you can recall' applies also to an oral culture. But how do persons in an oral culture recall? The organized knowledge that literates today study so that they 'know' it, that is, can recall it, has, with very few if any exceptions, been assembled and made available to them in writing. This is the case not only with Euclidean geometry but also with American Revolutionary history, or even baseball batting averages or traffic regulations.

An oral culture has no texts. How does it get together organized

material for recall? This is the same as asking, 'What does it or can it know in an organized fashion?'

Suppose a person in an oral culture would undertake to think through a particular complex problem and would finally manage to articulate a solution which itself is relatively complex, consisting, let us say, of a few hundred words. How does he or she retain for later recall the verbalization so painstakingly elaborated? In the total absence of any writing, there is nothing outside the thinker, no text, to enable him or her to produce the same line of thought again or even to verify whether he or she has done so or not. *Aides-mémoire* such as notched sticks or a series of carefully arranged objects will not of themselves retrieve a complicated series of assertions. How, in fact, could a lengthy, analytic solution ever be assembled in the first place? An interlocutor is virtually essential: it is hard to talk to yourself for hours on end. Sustained thought in an oral culture is tied to communication.

But even with a listener to stimulate and ground your thought, the bits and pieces of your thought cannot be preserved in jotted notes. How could you ever call back to mind what you had so laboriously worked out? The only answer is: Think memorable thoughts. In a primary oral culture, to solve effectively the problem of retaining and retrieving carefully articulated thought, you have to do your thinking in mnemonic patterns, shaped for ready oral recurrence. Your thought must come into being in heavily rhythmic, balanced patterns, in repetitions or antitheses, in alliterations and assonances, in epithetic and other formulary expressions, in standard thematic settings (the assembly, the meal, the duel, the hero's 'helper', and so on), in proverbs which are constantly heard by everyone so that they come to mind readily and which themselves are patterned for retention and ready recall, or in other mnemonic form. Serious thought is intertwined with memory systems. Mnemonic needs determine even syntax (Havelock 1963, pp. 87–96, 131–2, 294–6).

Protracted orally based thought, even when not in formal verse, tends to be highly rhythmic, for rhythm aids recall, even physiologically. Jousse (1978) has shown the intimate linkage between rhythmic oral patterns, the breathing process, gesture, and the bilateral symmetry of the human body in ancient Aramaic and Hellenic targums, and thus also in ancient Hebrew. Among the ancient Greeks, Hesiod, who was intermediate between oral Homeric Greece and fully developed Greek literacy, delivered quasi-philosophic material in the formulaic verse forms that structured it into the oral culture from which he had emerged (Havelock 1963, pp. 97–8, 294–301).

Formulas help implement rhythmic discourse and also act as mnemonic aids in their own right, as set expressions circulating through the mouths and ears of all. 'Red in the morning, the sailor's warning; red in the night, the sailor's delight.' 'Divide and conquer.' 'To err is human, to forgive is divine.' 'Sorrow is better than laughter, because when the face is sad the heart grows wiser' (Ecclesiastes 7:3). 'The clinging vine.' 'The sturdy oak.' 'Chase off nature and she returns at a gallop.' Fixed, often rhythmically balanced, expressions of this sort and of other sorts can be found occasionally in print, indeed can be 'looked up' in books of sayings, but in oral cultures they are not occasional. They are incessant. They form the substance of thought itself. Thought in any extended form is impossible without them, for it consists in them.

The more sophisticated orally patterned thought is, the more it is likely to be marked by set expressions skillfully used. This is true of oral cultures generally from those of Homeric Greece to those of the present day across the globe. Havelock's *Preface to Plato* (1963) and fictional works such as Chinua Achebe's novel *No Longer at Ease* (1961), which draws directly on Ibo oral tradition in West Africa, alike provide abundant instances of thought patterns of orally educated characters who move in these oral, mnemonically tooled grooves, as the speakers reflect, with high intelligence and sophistication, on the situations in which they find themselves involved. The law itself in oral cultures is enshrined in formulaic sayings, proverbs, which are not mere jurisprudential decorations, but themselves constitute the law. A judge in an oral culture is often called on to articulate sets of relevant proverbs out of which he can produce equitable decisions in the cases under formal litigation before him (Ong 1978, p. 5)

In an oral culture, to think through something in nonformulaic, non-patterned, non-mnemonic terms, even if it were possible, would be a waste of time, for such thought, once worked through, could never be recovered with any effectiveness, as it could be with the aid of writing. It would not be abiding knowledge but simply a passing

thought, however complex. Heavy patterning and communal fixed formulas in oral cultures serve some of the purposes of writing in chirographic cultures, but in doing so they of course determine the kind of thinking that can be done, the way experience is intellectually organized. In an oral culture, experience is intellectualized mnemonically. This is one reason why, for a St Augustine of Hippo (AD 354–430), as for other savants living in a culture that knew some literacy but still carried an overwhelmingly massive oral residue, memory bulks so large when he treats of the powers of the mind.

Of course, all expression and all thought is to a degree formulaic in the sense that every word and every concept conveyed in a word is a kind of formula, a fixed way of processing the data of experience, determining the way experience and reflection are intellectually organized, and acting as a mnemonic device of sorts. Putting experience into any words (which means transforming it at least a little bit – not the same as falsifying it) can implement its recall. The formulas characterizing orality are more elaborate, however, than are individual words, though some may be relatively simple: the Beowulf-poet's 'whale-road' is a formula (metaphorical) for the sea in a sense in which the term 'sea' is not.

FURTHER CHARACTERISTICS OF ORALLY BASED THOUGHT AND EXPRESSION

Awareness of the mnemonic base of the thought and expression in primary oral cultures opens the way to understanding some further characteristics of orally based thought and expression in addition to their formulaic styling. The characteristics treated here are some of those which set off orally based thought and expression from chirographically and typographically based thought and expression, the characteristics, that is, which are most likely to strike those reared in writing and print cultures as surprising. This inventory of characteristics is not presented as exclusive or conclusive but as suggestive, for much more work and reflection are needed to deepen understanding of orally based thought (and thereby understanding of chirographically based, typographically based, and electronically based thought).

In a primary oral culture, thought and expression tend to be of the following sorts.

(i) Additive rather than subordinative

A familiar instance of additive oral style is the creation narrative in Genesis 1:1–5, which is indeed a text but one preserving recognizable oral patterning. The Douay version (1610), produced in a culture with a still massive oral residue, keeps close in many ways to the additive Hebrew original (as mediated through the Latin from which the Douay version was made):

> In the beginning God created heaven and earth. And the earth was void and empty, and darkness was upon the face of the deep; and the spirit of God moved over the waters. And God said: Be light made. And light was made. And God saw the light that it was good; and he divided the light from the darkness. And he called the light Day, and the darkness Night; and there was evening and morning one day.

Nine introductory 'ands'. Adjusted to sensibilities shaped more by writing and print, the *New American Bible* (1970) translates:

> In the beginning, when God created the heavens and the earth, the earth was a formless wasteland, and darkness covered the abyss, while a mighty wind swept over the waters. Then God said, 'Let there be light', and there was light. God saw how good the light was. God then separated the light from the darkness. God called the light 'day' and the darkness he called 'night'. Thus evening came, and morning followed – the first day.

Two introductory 'ands', each submerged in a compound sentence. The Douay renders the Hebrew we or wa ('and') simply as 'and'. The New American renders it 'and', 'when', 'then', 'thus', or 'while', to provide a flow of narration with the analytic, reasoned subordination that characterizes writing (Chafe 1982) and that appears more natural in twentieth-century texts. Oral structures often look to pragmatics (the convenience of the speaker – Sherzer, 1974, reports lengthy public

oral performances among the Cuna incomprehensible to their hearers). Chirographic structures look more to syntactics (organization of the discourse itself), as Givón has suggested (1979). Written discourse develops more elaborate and fixed grammar than oral discourse does because to provide meaning it is more dependent simply upon linguistic structure, since it lacks the normal full existential contexts which surround oral discourse and help determine meaning in oral discourse somewhat independently of grammar.

It would be a mistake to think that the Douay is simply 'closer' to the original today than the New American is. It is closer in that it renders *we* or *wu* always by the same word, but it strikes the present-day sensibility as remote, archaic, and even quaint. Peoples in oral cultures or cultures with high oral residue, including the culture that produced the Bible, do not savor this sort of expression as so archaic or quaint. It feels natural and normal to them somewhat as the New American version feels natural and normal to us.

Other instances of additive structure can be found across the world in primary oral narrative, of which we now have a massive supply on tape (see Foley, 1980b, for listing of some tapes).

(ii) Aggregative rather than analytic

This characteristic is closely tied to reliance on formulas to implement memory. The elements of orally based thought and expression tend to be not so much simple integers as clusters of integers, such as parallel terms or phrases or clauses, antithetical terms or phrases or clauses, epithets. Oral folk prefer, especially in formal discourse, not the soldier, but the brave soldier; not the princess, but the beautiful princess; not the oak, but the sturdy oak. Oral expression thus carries a load of epithets and other formulary baggage which high literacy rejects as cumbersome and tiresomely redundant because of its aggregative weight (Ong 1977, pp. 188–212).

The clichés in political denunciations in many low-technology, developing cultures – enemy of the people, capitalist war-mongers – that strike high literates as mindless are residual formulary essentials of oral thought processes. One of the many indications of a high, if subsiding, oral residue in the culture of the Soviet Union is (or was a few

years ago, when I encountered it) the insistence on speaking there always of 'the Glorious Revolution of October 26' – the epithetic formula here is obligatory stabilization, as were Homeric epithetic formulas 'wise Nestor' or 'clever Odysseus', or as 'the glorious Fourth of July' used to be in the pockets of oral residue common even in the early twentieth-century United States. The former Soviet Union still announced each year the official epithets for various *loci classici* in Soviet history.

An oral culture may well ask in a riddle why oaks are sturdy, but it does so to assure you that they are, to keep the aggregate intact, not really to question or cast doubt on the attribution. (For examples directly from the oral culture of the Luba in Zaire, see Faik-Nzuji 1970.) Traditional expressions in oral cultures must not be dismantled: it has been hard work getting them together over the generations, and there is nowhere outside the mind to store them. So soldiers are brave and princesses beautiful and oaks sturdy forever. This is not to say that there may not be other epithets for soldiers or princesses or oaks, even contrary epithets, but these are standard, too: the braggart soldier, the unhappy princess, can also be part of the equipment. What obtains for epithets obtains for other formulas. Once a formulary expression has crystallized, it had best be kept intact. Without a writing system, breaking up thought – that is, analysis – is a high-risk procedure. As Lévi-Strauss has well put it in a summary statement 'the savage [i.e. oral] mind totalizes' (1966, p. 245).

(iii) Redundant or 'copious'

Thought requires some sort of continuity. Writing establishes in the text a 'line' of continuity outside the mind. If distraction confuses or obliterates from the mind the context out of which emerges the material I am now reading, the context can be retrieved by glancing back over the text selectively. Backlooping can be entirely occasional, purely *ad hoc*. The mind concentrates its own energies on moving ahead because what it backloops into lies quiescent outside itself, always available piecemeal on the inscribed page. In oral discourse, the situation is different. There is nothing to backloop into outside the mind, for the oral utterance has vanished as soon as it is uttered. Hence the mind

must move ahead more slowly, keeping close to the focus of attention much of what it has already dealt with. Redundancy, repetition of the just-said, keeps both speaker and hearer surely on the track.

Since redundancy characterizes oral thought and speech, it is in a profound sense more natural to thought and speech than is sparse linearity. Sparsely linear or analytic thought and speech are artificial creations, structured by the technology of writing. Eliminating redundancy on a significant scale demands a time-obviating technology, writing, which imposes some kind of strain on the psyche in preventing expression from falling into its more natural patterns. The psyche can manage the strain in part because handwriting is physically such a slow process – typically about one-tenth of the speed of oral speech (Chafe 1982). With writing, the mind is forced into a slowed-down pattern that affords it the opportunity to interfere with and reorganize its more normal, redundant processes.

Redundancy is also favored by the physical conditions of oral expression before a large audience, where redundancy is in fact more marked than in most face-to-face conversation. Not everyone in a large audience understands every word a speaker utters, if only because of acoustical problems. It is advantageous for the speaker to say the same thing, or equivalently the same thing, two or three times. If you miss the 'not only . . . 'you can supply it by inference from the 'but also . . .'. Until electronic amplification reduced acoustical problems to a minimum, public speakers as late as, for example, William Jennings Bryan (1860–1925) continued the old redundancy in their public addresses and by force of habit let them spill over into their writing. In some kinds of acoustic surrogates for oral verbal communication, redundancy reaches fantastic dimensions, as in African drum talk. It takes on the average around eight times as many words to say something on the drums as in the spoken language (Ong 1977, p. 101).

The public speaker's need to keep going while he is running through his mind what to say next also encourages redundancy. In oral delivery, though a pause may be effective, hesitation is always disabling. Hence it is better to repeat something, artfully if possible, rather than simply to stop speaking while fishing for the next idea. Oral cultures encourage fluency, fulsomeness, volubility. Rhetoricians were to call this *copia*. They continued to encourage it, by a kind of oversight, when

they had modulated rhetoric from an art of public speaking to an art of writing. Early written texts, through the Middle Ages and the Renaissance, are often bloated with 'amplification', annoyingly redundant by modern standards. Concern with *copia* remains intense in western culture so long as the culture sustains massive oral residue – which is roughly until the age of Romanticism or even beyond. Thomas Babington Macaulay (1800–59) is one of the many fulsome early Victorians whose pleonastic written compositions still read much as an exuberant, orally composed oration would sound, as do also, very often, the writings of Winston Churchill (1874–1965).

(iv) Conservative or traditionalist

Since in a primary oral culture conceptualized knowledge that is not repeated aloud soon vanishes, oral societies must invest great energy in saying over and over again what has been learned arduously over the ages. This need establishes a highly traditionalist or conservative set of mind that with good reason inhibits intellectual experimentation. Knowledge is hard to come by and precious, and society regards highly those wise old men and women who specialize in conserving it, who know and can tell the stories of the days of old. By storing knowledge outside the mind, writing and, even more, print downgrade the figures of the wise old man and the wise old woman, repeaters of the past, in favor of younger discoverers of something new.

Writing is of course conservative in its own ways. Shortly after it first appeared, it served to freeze legal codes in early Sumeria (Oppenheim 1964, p. 232). But by taking conservative functions on itself, the text frees the mind of conservative tasks, that is, of its memory work, and thus enables the mind to turn itself to new speculation (Havelock 1963, pp. 254–305).Indeed, the residual orality of a given chirographic culture can be calculated to a degree from the mnemonic load it leaves on the mind, that is, from the amount of memorization the culture's educational procedures require (Goody 1968a, pp. 13–14).

Of course oral cultures do not lack originality of their own kind. Narrative originality lodges not in making up new stories but in managing a particular interaction with this audience at this time – at every telling the story has to be introduced uniquely into a unique situation,

for in oral cultures an audience must be brought to respond, often vigorously. But narrators also introduce new elements into old stories (Goody 1977, pp.29–30). In oral tradition, there will be as many minor variants of a myth as there are repetitions of it, and the number of repetitions can be increased indefinitely. Praise poems of chiefs invite entrepreneurship, as the old formulas and themes have to be made to interact with new and often complicated political situations. But the formulas and themes are reshuffled rather than supplanted with new materials.

Religious practices, and with them cosmologies and deepseated beliefs, also change in oral cultures. Disappointed with the practical results of the cult at a given shrine when cures there are infrequent, vigorous leaders – the 'intellectuals' in oral society, Goody styles them (1977, p. 30) – invent new shrines and with these new conceptual universes. Yet these new universes and the other changes that show a certain originality come into being in an essentially formulaic and thematic noetic economy. They are seldom if ever explicitly touted for their novelty but are presented as fitting the traditions of the ancestors.

(v) Close to the human lifeworld

In the absence of elaborate analytic categories that depend on writing to structure knowledge at a distance from lived experience, oral cultures must conceptualize and verbalize all their knowledge with more or less close reference to the human lifeworld, assimilating the alien, objective world to the more immediate, familiar interaction of human beings. A chirographic (writing) culture and even more a typographic (print) culture can distance and in a way denature even the human, itemizing such things as the names of leaders and political divisions in an abstract, neutral list entirely devoid of a human action context. An oral culture has no vehicle so neutral as a list. In the latter half of the second book, the *Iliad* presents the famous catalogue of the ships – over four hundred lines – which compiles the names of Grecian leaders and the regions they ruled, but in a total context of human action: the names of persons and places occur as involved in doings (Havelock 1963, pp. 176–80). The normal and very likely the only place in Homeric Greece where this sort of political information could be

found in verbalized form was in a narrative or a genealogy, which is not a neutral list but an account describing personal relations (cf. Goody and Watt 1968, p. 32). Oral cultures know few statistics or facts divorced from human or quasi-human activity.

An oral culture likewise has nothing corresponding to how-to-do-it manuals for the trades (such manuals in fact are extremely rare and always crude even in chirographic cultures, coming into effective existence only after print has been considerably interiorized – Ong 1967b, pp. 28–9, 234, 258). Trades were learned by apprenticeship (as they still largely are even in high-technology cultures), which means from observation and practice with only minimal verbalized explanation. The maximum verbal articulation of such things as navigation procedures, which were crucial to Homeric culture, would have been encountered not in any abstract manual-style description at all but in such things as the following passage from the *Iliad* i. 141–4, where the abstract description is embedded in a narrative presenting specific commands for human action or accounts of specific acts:

> As for now a black ship let us draw to the great salt sea
> And therein oarsmen let us advisedly gather and thereupon a hecatomb
> Let us set and upon the deck Chryseis of fair cheeks
> Let us embark. And one man as captain, a man of counsel, there must be.

(quoted in Havelock 1963, p. 81; see also ibid., pp. 174–5). Primary oral culture is little concerned with preserving knowledge of skills as an abstract, self-subsistent corpus.

(vi) Agonistically toned

Many, if not all, oral or residually oral cultures strike literates as extraordinarily agonistic in their verbal performance and indeed in their lifestyle. Writing fosters abstractions that disengage knowledge from the arena where human beings struggle with one another. It separates the knower from the known. By keeping knowledge embedded in the human lifeworld, orality situates knowledge within a context of

Special mechanical skills were required for working with such writing materials, and not all 'writers' had such skills suitably developed for protracted composition. Paper made writing physically easier. But paper, manufactured in China probably by the second century BC and diffused by Arabs to the Middle East by the eighth century of the Christian era, was first manufactured in Europe only in the twelfth century.

Longstanding oral mental habits of thinking through one's thoughts aloud encourage dictation, but so did the state of writing technology. In the physical act of writing, the medieval Englishman Orderic Vitalis says, 'the whole body labors' (Clanchy 1979, p. 90). Through the Middle Ages in Europe authors often employed scribes. Composition in writing, working out one's thought pen-in-hand, particularly in briefer compositions, was, of course, practiced to some extent from antiquity, but it became widespread for literary and other prolonged composition at different times in different cultures. It was still rare in eleventh-century England, and, when it occurred, even this late, could be done in a psychological setting so oral that we find it hard to imagine. The eleventh-century Eadmer of St Albans says that, when he composed in writing, he felt he was dictating to himself (Clanchy 1979, p. 218). St Thomas Aquinas, who wrote his own manuscripts, organizes his *Summa theologiae* in quasi-oral format: each section or 'question' begins with a recitation of objections against the position Thomas will take, then Thomas states his position, and finally answers the objections in order. Similarly, an early poet would write down a poem by imagining himself declaiming it to an audience. Few if any novelists today write a novel by imagining themselves declaiming it aloud, though they might be exquisitely aware of the sound effects of the words. High literacy fosters truly written composition, in which the author composes a text which is precisely a text, puts his or her words together on paper. This gives thought different contours from those of orally sustained thought. More will be said (that is, written) here later about the effects of literacy on thought processes.

FROM MEMORY TO WRITTEN RECORDS

Long after a culture has begun to use writing, it may still not give writing high ratings. A present-day literate usually assumes that written records have more force than spoken words as evidence of a long-past state of affairs, especially in court. Earlier cultures that knew literacy but had not so fully interiorized it, have often assumed quite the opposite. The amount of credence accorded to written records undoubtedly varied from culture to culture, but Clanchy's careful case history of the use of literacy for practical administrative purposes in eleventh- and twelfth-century England (1979) gives an informative sample of how much orality could linger in the presence of writing, even in an administrative milieu.

In the period he studies, Clanchy finds that 'documents did not immediately inspire trust' (Clanchy 1979, p. 230). People had to be persuaded that writing improved the old oral methods sufficiently to warrant all the expense and troublesome techniques it involved. Before the use of documents, collective oral testimony was commonly used to establish, for example, the age of feudal heirs. To settle a dispute in 1127 as to whether the customs dues at the port of Sandwich went to St Augustine's Abbey at Canterbury or to Christ Church, a jury was chosen consisting of twelve men from Dover and twelve from Sandwich, 'mature, wise seniors of many years, having good testimony'. Each juror then swore that, as 'I have received from my ancestors, and I have seen and heard from my youth', the tolls belong to Christ Church (Clanchy 1979, pp. 232–3). They were publicly remembering what others before them had remembered.

Witnesses were *prima facie* more credible than texts because they could be challenged and made to defend their statements, whereas texts could not (this, it will be recalled, was exactly one of Plato's objections to writing). Notarial methods of authenticating documents undertake to build authenticating mechanisms into written texts, but notarial methods developed late in literate cultures, and much later in England than in Italy (Clanchy 1979, pp. 235–6). Written documents themselves were often authenticated not in writing but by symbolic objects (such as a knife, attached to the document by a parchment thong – Clanchy 1979, p. 24). Indeed symbolic objects alone could

serve as instruments transferring property. In c. 1130, Thomas de Muschamps conveyed his estate of Hetherslaw to the monks at Durham by offering his sword on an altar (Clanchy 1979, p. 25). Even after the Domesday Book (1085–6) and the accompanying increase in written documentation, the story of the Earle Warrenne shows how the old oral state of mind still persisted: before the judges in quo warranto procedures under Edward I (reigned 1272–1306), the Earle Warrenne exhibited not a charter but 'an ancient and rusty sword', protesting that his ancestors had come with William the Conqueror to take England by the sword and that he would defend his lands with the sword. Clanchy points out (1979, pp. 21–2) that the story is somewhat questionable because of certain inconsistencies, but notes also that its persistence attests to an earlier state of mind familiar with the witness value of symbolic gifts.

Early charters conveying land in England were originally not even dated (1979, pp. 231, 236–41), probably for a variety of reasons. Clanchy suggests that the most profound reason was probably that 'dating required the scribe to express an opinion about his place in time' (1979, p. 238), which demanded that he choose a point of reference. What point? Was he to locate this document by reference to the creation of the world? To the Crucifixion? To the birth of Christ? Popes dated documents this way, from Christ's birth, but was it presumptuous to date a secular document as popes dated theirs? In high technology cultures today, everyone lives each day in a frame of abstract computed time enforced by millions of printed calendars, clocks, and watches. In twelfth-century England there were no clocks or watches or wall or desk calendars.

Before writing was deeply interiorized by print, people did not feel themselves situated every moment of their lives in abstract computed time of any sort. It appears unlikely that most persons in medieval or even Renaissance western Europe would ordinarily have been aware of the number of the current calendar year – from the birth of Christ or any other point in the past. Why should they be? Indecision concerning what point to compute from attested the trivialities of the issue. In a culture with no newspapers or other currently dated material to impinge on consciousness, what would be the point for most people in knowing the current calendar year? The abstract calendar number

would relate to nothing in real life. Most persons did not know and never even tried to discover in what calendar year they had been born.

Moreover, charters were undoubtedly assimilated somewhat to symbolic gifts, such as knives or swords. These were identifiable by their looks. And indeed, charters were quite regularly forged to make them look like what a court (however erroneously) felt a charter should look like (Clanchy 1979, p. 249, citing P. H. Sawyer). 'Forgers', Clanchy points out, were not 'occasional deviants on the peripheries of legal practice' but 'experts entrenched at the centre of literary and intellectual culture in the twelfth century.' Of the 164 now extant charters of Edward the Confessor, 44 are certainly forged, only 64 certainly authentic, and the rest uncertainly one or the other.

The verifiable errors resulting from the still radically oral economic and juridical procedures that Clanchy reports were minimal because the fuller past was mostly inaccessible to consciousness. 'Remembered truth was . . . flexible and up to date' (Clanchy 1979, p. 233). As has been seen in instances from modern Nigeria and Ghana (Goody and Watt 1968, pp. 31–4), in an oral economy of thought, matters from the past without any sort of present relevance commonly dropped into oblivion. Customary law, trimmed of material no longer of use, was automatically always up to date and thus youthful – a fact which, paradoxically, makes customary law seem inevitable and thus very old (cf. Clanchy 1979, p. 233). Persons whose world view has been formed by high literacy need to remind themselves that in functionally oral cultures the past is not felt as an itemized terrain, peppered with verifiable and disputed 'facts' or bits of information. It is the domain of the ancestors, a resonant source for renewing awareness of present existence, which itself is not an itemized terrain either. Orality knows no lists or charts or figures.

Goody (1977, pp. 52–111) has examined in detail the poetic significance of tables and lists, of which the calendar is one example. Writing makes such apparatus possible. Indeed, writing was in a sense invented largely to make something like lists: by far most of the earliest writing we know, that in the cuneiform script of the Sumerians beginning around 3500 BC, is account-keeping. Primary oral cultures commonly situate their equivalent of lists in narrative, as in the catalogue of the ships and captains in the *Iliad* (ii. 461–879) – not an objective tally but

western European exploration of the globe, changed family life and politics, diffused knowledge as never before, made universal literacy a serious objective, made possible the rise of modern sciences, and otherwise altered social and intellectual life. In *The Gutenberg Galaxy* (1962) and *Understanding Media* (1964) Marshall McLuhan has called attention to many of the subtler ways print has affected consciousness, as George Steiner has also done in *Language and Silence* (1967) and as I have undertaken to do elsewhere (Ong 1958b; 1967b; 1971; 1977). These subtler effects of print on consciousness, rather than readily observable social effects, concern us particularly here.

For thousands of years human beings have been printing designs from variously carved surfaces, and since the seventh or eighth century Chinese, Koreans and Japanese have been printing verbal texts, at first from wood blocks engraved in relief (Carter 1955). But the crucial development in the global history of printing was the invention of alphabetic letterpress print in fifteenth-century Europe. Alphabetic writing had broken the word up into spatial equivalents of phonemic units (in principle, though the letters never quite worked out as totally phonemic indicators). But the letters used in writing do not exist before the text in which they occur. With alphabetic letterpress print it is otherwise. Words are made out of units (types) which pre-exist as units before the words which they will constitute. Print suggests that words are things far more than writing ever did.

Like the alphabet, alphabetic letterpress print was a nonce invention (Ong 1967b, and references there cited). The Chinese had had movable type, but no alphabet, only characters, basically pictographic. Before the mid-1400s the Koreans and Uigur Turks had both the alphabet and movable type, but the movable types bore not separate letters but whole words. Alphabet letterpress printing, in which each letter was cast on a separate piece of metal, or type, marked a psychological breakthrough of the first order. It embedded the word itself deeply in the manufacturing process and made it into a kind of commodity. The first assembly line, a technique of manufacture which in a series of set steps produces identical complex objects made up of replaceable parts, was not one which produced stoves or shoes or weaponry but one which produced the printed book. In the late 1700s, the industrial revolution applied to other manufacturing the replaceable-part

techniques which printers had worked with for three hundred years. Despite the assumptions of many semiotic structuralists, it was print, not writing, that effectively reified the word, and, with it, poetic activity (Ong 1958b, pp. 306–18).

Hearing rather than sight had dominated the older poetic world in significant ways, even long after writing was deeply interiorized. Manuscript culture in the West remained always marginally oral. Ambrose of Milan caught the earlier mood in his *Commentary on Luke* (iv. 5): 'Sight is often deceived, hearing serves as guarantee.' In the West through the Renaissance, the oration was the most taught of all verbal productions and remained implicitly the basic paradigm for all discourse, written as well as oral. Written material was subsidiary to hearing in ways which strike us today as bizarre. Writing served largely to recycle knowledge back into the oral world, as in medieval university disputations, in the reading of literary and other texts to groups (Crosby 1936; Ahern 1981; Nelson 1976–7), and in reading aloud even when reading to oneself. At least as late as the twelfth century in England, checking even written financial accounts was still done aurally, by having them read aloud. Clanchy (1979, pp. 215, 183) describes the practice and draws attention to the fact that it still registers in our vocabulary: even today, we speak of 'auditing', that is, 'hearing' account books, though what an accountant actually does today is examine them by sight. Earlier, residually oral folk could understand even figures better by listening than by looking.

Manuscript cultures remained largely oral-aural even in retrieval of material preserved in texts. Manuscripts were not easy to read, by later typographic standards, and what readers found in manuscripts they tended to commit at least somewhat to memory. Relocating material in a manuscript was not always easy. Memorization was encouraged and facilitated also by the fact that in highly oral manuscript cultures, the verbalization one encountered even in written texts often continued the oral mnemonic patterning that made for ready recall. Moreover, readers commonly vocalized, read slowly aloud or *sotto voce*, even when reading alone, and this also helped fix matter in the memory.

Well after printing was developed, auditory processing continued for some time to dominate the visible, printed text, though it was eventually eroded away by print. Auditory dominance can be seen

strikingly in such things as early printed title pages, which often seem to us crazily erratic in the their inattention to visual word units. Sixteenth-century title pages very commonly divide even major words, including the author's name, with hyphens, presenting the first part of a word in one line in large type and the latter part in smaller type, as in the edition of Sir Thomas Elyot's *The Boke Named the Gouernour* published in London by Thomas Berthelet in 1534 (Figure 1 here; see Steinberg 1974, p. 154). Inconsequential words may be set in huge type faces: on the title page shown here the initial 'THE' is by far the most prominent

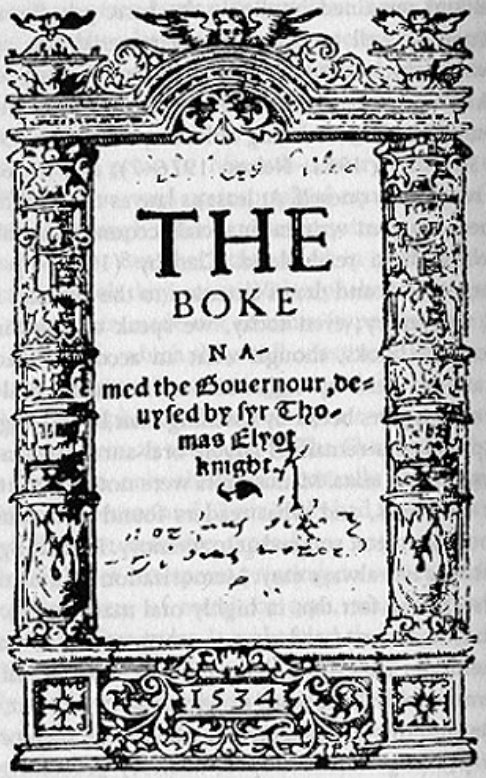

Figure 1

word of all. The result is often aesthetically pleasing as a visual design, but it plays havoc with our present sense of textuality. Yet this practice, not our practice, is the original practice from which our present practice has deviated. Our attitudes are the ones that have changed, and thus that need to be explained. Why does the original, presumably more 'natural' procedure seem wrong to us? Because we feel the printed words before us as visual units (even though we sound them at least in the imagination when we read). Evidently, in processing text for meaning, the sixteenth century was concentrating less on the sight of the word and more on its sound than we do. All text involves sight and sound. But whereas we feel reading as a visual activity cueing in sounds for us, the early age of print still felt it as primarily a listening process, simply set in motion by sight. If you felt yourself as reader to be listening to words, what difference did it make if the visible text went its own visually aesthetic way? It will be recalled that pre-print manuscripts commonly ran words together or kept spaces between them minimal.

Eventually, however, print replaced the lingering hearing-dominance in the world of thought and expression with the sight-dominance which had its beginnings with writing but could not flourish with the support of writing alone. Print situates words in space more relentlessly than writing ever did. Writing moves words from the sound world to a world of visual space, but print locks words into position in this space. Control of position is everything in print. 'Composing' type by hand (the original form of typesetting) consists in positioning by hand preformed letter types, which, after use, are carefully repositioned, redistributed for future use into their proper compartments in the case (capitals or 'upper case' letters in the upper compartments, small or 'lower case' letters in the lower compartments). Composing on the linotype consists in using a machine to position the separate matrices for individual lines so that a line of type can be cast from the properly positioned matrices. Composing on a computer terminal or wordprocesser positions electronic patterns (letters) previously programmed into the computer. Printing from 'hot metal' type (that is, from cast type – the older process) calls for locking up the type in an absolutely rigid position in the chase, locking the chase firmly onto a press, affixing and

clamping down the makeready, and squeezing the forme of type with great pressure onto the paper printing surface in contact with the platen.

Most readers are of course not consciously aware of all this locomotion that has produced the printed text confronting them. Nevertheless, from the appearance of the printed text they pick up a sense of the word-in-space quite different from that conveyed by writing. Printed texts look machine-made, as they are. Chirographic control of space tends to be ornamental, ornate, as in calligraphy. Typographic control typically impresses more by its tidiness and inevitability: the lines perfectly regular, all justified on the right side, everything coming out even visually, and without the aid of the guidelines or ruled borders that often occur in manuscripts. This is an insistent world of cold, nonhuman, facts. 'That's the way it is' – Walter Cronkite's television signature comes from the world of print that underlies the secondary orality of television (Ong 1971, pp. 284–303).

By and large, printed texts are far easier to read than manuscript texts. The effects of the greater legibility of print are massive. The greater legibility ultimately makes for rapid, silent reading. Such reading in turn makes for a different relationship between the reader and the authorial voice in the text and calls for different styles of writing. Print involves many persons besides the author in the production of a work – publishers, literary agents, publishers' readers, copy editors and others. Before as well as after scrutiny by such persons, writing for print often calls for painstaking revisions by the author of an order of magnitude virtually unknown in a manuscript culture. Few lengthy prose works from manuscript cultures could pass editorial scrutiny as original works today: they are not organized for rapid assimilation from a printed page. Manuscript culture is producer-oriented, since every individual copy of a work represents great expenditure of an individual copyist's time. Medieval manuscripts are turgid with abbreviations, which favor the copyist although they inconvenience the reader. Print is consumer-oriented, since the individual copies of a work represent a much smaller investment of time: a few hours spent in producing a more readable text will immediately improve thousands upon thousands of copies. The effects of print on thought and style have yet to be assessed fully. The journal *Visible Language* (formerly called the *Journal of Typographic Research*) published many articles contributory to such an assessment.

SPACE AND MEANING

Writing had reconstituted the originally oral, spoken word in visual space. Print embedded the word in space more definitively. This can be seen in such developments as lists, especially alphabetic indexes, in the use of words (instead of iconographic signs) for labels, in the use of printed drawings of all sorts to convey information, and in the use of abstract typographic space to interact geometrically with printed words in a line of development that runs from Ramism to concrete poetry and to Derrida's logomachy with the (printed, typically, not simply written) text.

(i) Indexes

Lists begin with writing. Goody has discussed (1977, pp. 74 1 1) the use of lists in the Ugaritic script of around 1300 BC and in other early scripts. He notes (1977, pp. 87–8) that the information in the lists is abstracted from the social situation in which it had been embedded ('fattened kids', 'pastured ewes', etc., with no further specifications) and also from linguistic context (normally in oral utterance nouns are not free-floating as in lists, but are embedded in sentences: rarely do we hear an oral recitation of simply a string of nouns – unless they are being read off a written or printed list). In this sense, lists as such have 'no oral equivalent' (1977, pp. 86–7) though of course the individual written words sound in the inner ear to yield their meanings. Goody also notes the initially awkward, *ad hoc* way in which space was utilized in making these lists, with word-dividers to separate items from numbers, ruled lines, wedged lines, and elongated lines. Besides administrative lists, he discusses also event lists, lexical lists (words are listed in various orders, often hierarchically by meaning – gods, then kin of the gods, next gods' servants), and Egyptian onomastica or name-lists, which were often memorized for oral recitation. Still highly oral manuscript culture felt that having written series of things readied for oral recall was of itself intellectually improving. (Educators in the West

until recently had the same feeling, and across the world most educators probably still do.) Writing is here once more at the service of orality.

Goody's examples show the relatively sophisticated processing of verbalized material in chirographic cultures so as to make the material more immediately retrievable through its spatial organization. Lists range names of related items in the same physical, visual space. Print develops far more sophisticated use of space for visual organization and for effective retrieval.

Indexes are a prime development here. Alphabetic indexes show strikingly the disengagement of words from discourse and their embedding in typographic space. Manuscripts can be alphabetically indexed. They rarely are (Daly 1967, pp. 81–90; Clanchy 1979, pp. 28–9, 85). Since two manuscripts of a given work, even if copied from the same dictation, almost never correspond page for page, each manuscript of a given work would normally require a separate index. Indexing was not worth the effort. Auditory recall through memorization was more economical, though not thorough-going. For visual location of materials in a manuscript text, pictorial signs were often preferred to alphabetic indexes. A favorite sign was the 'paragraph', which originally meant this mark ¶, not a unit of discourse at all. When alphabetic indexes occurred, they were rare, often crude, and commonly not understood, even in thirteenth-century Europe, when sometimes an index made for one manuscript was appended without change of page numbers to another manuscript with a different pagination (Clanchy 1979, p. 144). Indexes seem to have been valued at times for their beauty and mystery rather than for their utility. In 1286, a Genoese compiler could marvel at the alphabetical catalogue he had devised as due not to his own prowess but 'the grace of God working in me' (Daly 1967, p. 73). Indexing was long by first letter only – or, rather, by first sound: for example, in a Latin work published as late as 1506 in Rome, since in Italian and Latin as spoken by Italian-speakers the letter h is not pronounced, 'Halyzones' is listed under a (discussed in Ong 1977, pp. 169–72). Here even visual retrieval functions aurally. Ioannes Ravisius Textor's *Specimen epithetorum* (Paris, 1518), alphabetizes 'Apollo' before all other entries under a, because Textor considers it fitting that in a work concerned with poetry, the god of poetry should get top billing.

Clearly, even in a printed alphabetic index, visual retrieval was given low priority. The personalized, oral world still could overrule processing words as things.

The alphabetic index is actually a crossroads between auditory and visualist cultures. 'Index' is a shortened form of the original *index locorum* or *index locorum communium*, 'index of places' or 'index of commonplaces'. Rhetoric had provided the various *loci* or 'places' – headings, we would style them – under which various 'arguments' could be found, headings such as cause, effect, related things, unlike things, and so on. Coming with this orally based, formulary equipment to the text, the indexer of 400 years ago simply noted on what pages in the text one or another *locus* was exploited, listing there the locus and the corresponding pages in the *index locorum*. The loci had originally been thought of as, vaguely, 'places' in the mind where ideas were stored. In the printed book, these vague psychic 'places' became quite physically and visibly localized. A new noetic world was shaping up, spatially organized.

In this new world, the book was less like an utterance, and more like a thing. Manuscript culture had preserved a feeling for a book as a kind of utterance, an occurrence in the course of conversation, rather than as an object. Lacking title pages and often titles, a book from pre-print, manuscript culture is normally catalogued by its 'incipit' (a Latin verb meaning 'it begins'), or the first words of its text (referring to the Lord's Prayer as the 'Our Father' is referring to it by its incipit and evinces a certain residual orality). With print, as has been seen, come title pages. Title pages are labels. They attest a feeling for the book as a kind of thing or object. Often in medieval western manuscripts, instead of a title page the text proper might be introduced by an observation to the reader, just as a conversation might start with a remark of one person to another: 'Hic habes, carissime lector, librum quem scripset quidam de. . . .' (Here you have, dear reader, a book which so-and-so wrote about. . . .) The oral heritage is at work here, for, although oral cultures of course have ways of referring to stories or other traditional recitations (the stories of the Wars of Troy, the Mwindo stories, and so on), label-like titles as such are not very operational in oral cultures: Homer would hardly have begun a recitation of episodes from the *Iliad* by announcing '*The Iliad*'.

(ii) Books, contents and labels

Once print has been fairly well interiorized, a book was sensed as a kind of object which 'contained' information, scientific, fictional or other, rather than, as earlier, a recorded utterance (Ong 1958b, p. 313). Each individual book in a printed edition was physically the same as another, an identical object, as manuscript books were not, even when they presented the same text. Now, with print, two copies of a given work did not merely say the same thing, they were duplicates of one another as objects. The situation invited the use of labels, and the printed book, being a lettered object, naturally took a lettered label, the title page (new with print – Steinberg 1974, pp. 145–8). At the same time the iconographic drive was still strong, as is seen in the highly emblematic engraved title pages that persisted through the 1660s, filled with allegorical figures and other nonverbal designs.

(iii) Meaningful surface

Ivins (1953, p. 31) has pointed out that, although the art of printing designs from various carved surfaces had been known for centuries, only after the development of movable letterpress type in the mid-1400s were prints used systematically to convey information. Hand-done technical drawings, as Ivins has shown (1953, pp. 14–16, 40–5) soon deteriorated in manuscripts because even skilled artists miss the point of an illustration they are copying unless they are supervised by an expert in the field the illustrations refer to. Otherwise, a sprig of white clover copied by a succession of artists unfamiliar with real white clover can end up looking like asparagus. Prints might have solved the problem in a manuscript culture, since print-making had been practiced for centuries for decorative purposes. Cutting an accurate printing block for white clover would have been quite feasible long before the invention of letterpress printing, and would have provided just what was needed, an 'exactly repeatable visual statement'. But manuscript production was not congenial to such manufacture. Manuscripts were produced by handwriting, not from pre-existing parts. Print was congenial. The verbal text was reproduced from pre-existing parts, and so could prints be. A press could print an

'exactly repeatable visual statement' as easily as a forme set up from type.

One consequence of the new exactly repeatable visual statement was modern science. Exact observation does not begin with modern science. For ages, it has always been essential for survival among, for example, hunters and craftsmen of many sorts. What is distinctive of modern science is the conjuncture of exact observation and exact verbalization: exactly worded descriptions of carefully observed complex objects and processes. The availability of carefully made, technical prints (first woodcuts, and later even more exactly detailed metal engravings) implemented such exactly worded descriptions. Technical prints and technical verbalization reinforced and improved each other. The resulting hypervisualized noetic world was brand new. Ancient and medieval writers are simply unable to produce exactly worded descriptions of complex objects at all approximating the descriptions that appear after print and, indeed, that mature chiefly with the Age of Romanticism, that is, the age of the Industrial Revolution. Oral and residually oral verbalization directs its attention to action, not to the visual appearance of objects or scenes or persons (Fritschi 1981, pp. 65–6; cf. Havelock 1963, pp. 61–96). Vitruvius' treatise on architecture is notoriously vague. The kinds of exactitude aimed at by the long-standing rhetorical tradition were not of a visual–vocal sort. Eisenstein (1979, p. 64) suggests how difficult it is today to imagine earlier cultures where relatively few persons had ever seen a physically accurate picture of anything.

The new noetic world opened by exactly repeatable visual statement and correspondingly exact verbal description of physical reality affected not just science but literature as well. No pre-Romantic prose provides the circumstantial description of landscape found in Gerard Manley Hopkins's notebooks (1937) and no pre-Romantic poetry proceeds with the close, meticulous, clinical attention to natural phenomena found, for example, in Hopkins's description of a plunging brook in *Inversnaid*. As much as Darwin's evolutionary biology or Michelson's physics this kind of poetry grows out of the world of print.

(iv) Typographic space

Because visual surface had become charged with imposed meaning and because print controlled not only what words were put down to form a text but also the exact situation of the words on the page and their spatial relationship to one another, the space itself on a printed sheet – 'white space' as it is called – took on high significance that leads directly into the modern and post-modern world. Manuscript lists and charts, discussed by Goody (1977, pp. 74–111), can situate words in specific spatial relationships to one another, but if the spatial relationships are extremely complicated, the complications will not survive the vagaries of successive copiers. Print can reproduce with complete accuracy and in any quantity indefinitely complex lists and charts. Early in the age of print, extremely complex charts appear in the teaching of academic subjects (Ong 1958b, pp. 80, 81, 202, *et passim*).

Typographic space works not only on the scientific and philosophic imagination, but also on the literary imagination, which shows some of the complicated ways in which typographic space is present to the psyche. George Herbert exploits typographic space to provide meaning in his 'Easter Wings' and 'The Altar', where the lines, of varying lengths, give the poems a visualized shape suggesting wings and an altar respectively. In manuscripts, this kind of visual structure would be only marginally viable. In *Tristram Shandy* (1760–7), Laurence Sterne uses typographic space with calculated whimsy, including in his book blank pages, to indicate his unwillingness to treat a subject and to invite the reader to fill in. Space here is the equivalent of silence. Much later, and with greater sophistication, Stéphane Mallarmé designs his poem 'Un Coup de dés' to be set in varying fonts and sizes of type with the lines scattered calculatingly across the pages in a kind of typographical free-fall suggesting the chance that rules a throw of dice (the poem is reproduced and discussed in Bruns 1974, pp. 115–38). Mallarmé's declared objective is to 'avoid narrative' and 'space out' the reading of the poem so that the page, with its typographic spaces, not the line, is the unit of verse. E. E. Cummings's untitled Poem No. 276 (1968) about the grasshopper disintegrates the words of its text and scatters them unevenly about the page until at last letters come together in the final word 'grasshopper' – all this to suggest the erratic and optically

dizzying flight of a grasshopper until he finally reassembles himself straightforwardly on the blade of grass before us. White space is so integral to Cummings's poem that it is utterly impossible to read the poem aloud. The sounds cued in by the letters have to be present in the imagination but their presence is not simply auditory: it interacts with the visually and kinesthetically perceived space around them.

Concrete poetry (Solt 1970) climaxes in a certain way the interaction of sounded words and typographic space. It presents exquisitely complicated or exquisitely uncomplicated visual displays of letters and/or words some of which can be viewed but not read aloud at all, but none of which can be appropriated without some awareness of verbal sound. Even when concrete poetry cannot be read at all, it is still not merely a picture. Concrete poetry is a minor genre, often merely gimmicky – a fact which makes it all the more necessary to explain the drive to produce it.

Hartman (1981, p. 35) has suggested a connection between concrete poetry and Jacques Derrida's on-going logomachy with the text. The connection is certainly real and deserves more attention. Concrete poetry plays with the dialectic of the word locked into space as opposed to the sounded, oral word which can never be locked into space (every text is pretext), that is, it plays with the absolute limitations of textuality which paradoxically reveal the built-in limitations of the spoken word, too. This is Derrida's terrain, though he moves over it at his own calculated gait. Concrete poetry is not the product of writing but of typography, as has been seen. Deconstruction is tied to typography rather than, as its advocates seem often to assume, merely to writing.

MORE DIFFUSE EFFECTS

One can list without end additional effects, more or less direct, which print had on the poetic economy or the 'mentality' of the West. Print eventually removed the ancient art of (orally based) rhetoric from the center of academic education. It encouraged and made possible on a large scale the quantification of knowledge, both through the use of mathematical analysis and through the use of diagrams and charts. Print eventually reduced the appeal of iconography in the management