

Technologies are artificial, but – paradox again – artificiality is natural to human beings. Technology, properly interiorized, does not degrade human life but on the contrary enhances it. The modern orchestra, for example, is the result of high technology. A violin is an instrument, which is to say a tool. An organ is a huge machine, with sources of power – pumps, bellows, electric generators – totally outside its operator. Beethoven's score for his Fifth Symphony consists of very careful directions to highly trained technicians, specifying exactly how to use their tools. *Legato*: do not take your finger off one key until you have hit the next. *Staccato*: hit the key and take your finger off immediately. And so on. As musicologists well know, it is pointless to object to electronic compositions such as Morton Subotnik's *The Wild Bull* on the grounds that the sounds come out of a mechanical contrivance. What do you think the sounds of an organ come out of? Or the sounds of a violin or even of a whistle? The fact is that by using a mechanical contrivance, a violinist or an organist can express something poignantly human that cannot be expressed without the mechanical contrivance. To achieve such expression of course the violinist or organist has to have interiorized the technology, made the tool or machine a second nature, a psychological part of himself or herself. This calls for years of 'practice', learning how to make the tool do what it can do. Such shaping of a tool to oneself, learning a technological skill, is hardly dehumanizing. The use of a technology can enrich the human psyche, enlarge the human spirit, intensify its interior life. Writing is an even more deeply interiorized technology than instrumental musical performance is. But to understand what it is, which means to understand it in relation to its past, to orality, the fact that it is a technology must be honestly faced.

### WHAT IS 'WRITING' OR 'SCRIPT'?

Writing, in the strict sense of the word, the technology which has shaped and powered the intellectual activity of modern man, was a very late development in human history. *Homo sapiens* has been on earth perhaps some 50,000 years (Leakey and Lewin 1979, pp. 141 and 168). The first script, or true writing, that we know, was developed

among the Sumerians in Mesopotamia only around the year 3500 BC (Diringer 1953; Gelb 1963).

Human beings had been drawing pictures for countless millennia before this. And various recording devices or *aides-mémoire* had been used by various societies: a notched stick, rows of pebbles, other tallying devices such as the quipu of the Incas (a stick with suspended cords onto which other cords were tied), the 'winter count' calendars of the Native American Plains Indians, and so on. But a script is more than a mere memory aid. Even when it is pictographic, a script is more than pictures. Pictures represent objects. A picture of a man and a house and a tree of itself *says* nothing. (If a proper code or set of conventions is supplied, it might: but a code is not picturable, unless with the help of another unpicturable code. Codes ultimately have to be explained by something more than pictures; that is, either in words or in a total human context, humanly understood.) A script in the sense of true writing, as understood here, does not consist of mere pictures, of representations of things, but is a representation of an *utterance*, of words that someone says or is imagined to say.

It is of course possible to count as 'writing' any semiotic mark, that is, any visible or sensible mark which an individual makes and assigns a meaning to. Thus a simple scratch on a rock or a notch on a stick interpretable only by the one who makes it would be 'writing'. If this is what is meant by writing, the antiquity of writing is perhaps comparable to the antiquity of speech. However, investigations of writing which take 'writing' to mean any visible or sensible mark with an assigned meaning merge writing with purely biological behavior. When does a footprint or a deposit of feces or urine (used by many species of animals for communication – Wilson 1975, pp. 228–9) become 'writing'? Using the term 'writing' in this extended sense to include any semiotic marking trivializes its meaning. The critical and unique breakthrough into new worlds of knowledge was achieved within human consciousness not when simple semiotic marking was devised but when a coded system of visible marks was invented whereby a writer could determine the exact words that the reader would generate from the text. This is what we usually mean today by writing in its sharply focused sense.

With writing or script in this full sense, encoded visible markings