

HISTORICAL CONSCIOUSNESS IN THE COMPUTER AGE

That there exists no healthy society that is without some sort of historical memory is an assumption predominating both in the popular mind and also among social theorists. Another formulation of this assumption might read: it is part of the normal present of a society to have a consciousness of its past; in the absence of common memories a society as it were falls apart, for there no longer obtains the necessary solidarity among its members.¹

Standing opposed to this assumption is what could be called the post-modern view – a view I will here defend with some crucial qualifications – according to which society is held together not by any special *contents* of consciousness, and therefore also not by a consciousness of some common past, but rather through the traffic of its members one with another, through the exchange of goods, services, and especially of *information*. Society is a matter of *communication*,² and on the view in question the framework of communication need not at all contain a dimension referring to the past. Indeed it is increasingly affirmed precisely of our own age, the age of information, of electronic, audio-visual, computer-driven communication, that it does not need such a dimension. My aim in what follows, then, is to subject this assertion to a sympathetic, but somewhat closer, inspection. First, however, some characteristics of the *earlier* phases of the technology of human communication have to be considered.

The history of preserving and of passing on the knowledge of society – the history of the technology of communication – can be divided into four main phases:³

1. the phase of primary orality,
2. the phase of literacy,
3. the typographic phase (printing),
4. the phase of what has been called “secondary orality”, of electronic information processing and transfer.

A culture is said to be one of primary orality if it does not yet possess the technology of writing at all, or only in a very rudimentary fashion – as *aides-mémoire*, for example in the case of the Peruvian *quipus* or knot

language. Words, in such a culture, are exclusively spoken or heard; the knowledge society possesses has to be stored in easily memorizable formulae; it has to be memorized through constant repetition of authoritative texts – it has to be passed on through *tradition*.

It belongs to the nature of traditions, now, that their truth-content is not allowed to be called into question. Doubt would, after all, destroy precisely that immediate and devoted acceptance of the hearer without which the committing to memory of what is heard can come about only imperfectly. The indubitability of the transmitted text is legitimated through the fiction that this same text has been passed on *unchanged from generation to generation* – leading back to what is in the end a divine origin. And this same resistance to doubt is reinforced through elements of solemnity and ritual.⁴

In fact, however, an unchanged passing on of tradition is quite dysfunctional, is indeed such as to influence negatively the capacity of society to adjust itself to new circumstances. If the flexibility of tradition – which is to say of the oral preservation and transmission of knowledge – is hampered, e.g. through its becoming partially fixed in a rudimentary pre-alphabetical sign-system, or perhaps through ways which give rise to the dominance of a rigid educational elite, then there arises a cognitive blindness to change, a blindness which leads finally to the collapse of the culture in question.⁵

A *functional* tradition, in contrast, is a homeostatic affair: its content is adjusted, constantly and automatically, to what is taking place in the present.⁶ This means also, however, that traditions can convey no image of the past which is objective in the modern sense of this word, indeed that they know no historical past at all. Eric Havelock writes of “a present tradition extending into the past and expected to extend into the future: The idiom in which the three periods are described establishes their identity, not difference”.⁷ The individual in a non-literate society, write Goody and Watt in their classic study, “has little perception of the past except in terms of the present”.⁸ Traditional knowledge is ahistorical, *blind to what is past*.

The technology of writing, on the other hand, which for the first time allows the fixing of what is said and the comparison of different texts, leads to the question of the strict identity or difference of utterances and thus to the idea of contradiction and of coherence, to critical-rational thought. It is the appearance of literacy, and especially the emergence of Greek alphabetic writing, which for the first time allows a precise

objectivized representation of spoken thought. It thereby makes possible that *distance* of the cognitive subject to its own mental contents, that intellectual space, in which conceptuality and reflection can for the first time unfold themselves. Only with the appearance of writing does there occur the differentiation of legend and fact, myth and knowledge, and the beginning of a feeling for history and for historical *distance*. The transition from orality to literacy is from the point of view of the theory of knowledge quite decisive, as has been recognized in a rapidly growing literature since the 1960s.⁹

Already in the work of Oswald Spengler, however, one finds the idea that writing is a quite new type of language, implying “a complete change in the relations of man’s waking consciousness”, in that writing liberates consciousness “*from the tyranny of the present*”. Speaking and hearing, Spengler writes, take place only in proximity and in the present, writing “*is the grand symbol of the Far*”, and not only of distance in space, but also of duration.¹⁰

The full unfolding of this new idea occurred however only with the appearance of the printed book. The age of manuscript culture remains still an overwhelmingly oral period; texts are hard to produce and expensive to obtain; they are able to serve as an aid to oral communication, not, however, as its substitute. Not only in the Middle Ages but also in the early modern period, then, the “space of historical experience” of Europe is marked by “a deep feeling of unity spanning generations”, as Reinhart Koselleck writes.¹¹ And this is connected not only with the absence of “revolutionary” technical developments, and with the fact that, generally speaking, historical events were experienced as familiar, recurring – factors mentioned by Koselleck – but also, and above all, with the technology of communication then still dominant: the orality of the manuscript culture and of the early book culture¹² – a technology which *allows no separation of the generations within the process of learning*.¹³

The age of print, in contrast, creates not only the possibility of independent learning, but also, with its wealth of books, creates reliable and constant texts. With its standardized chronologies and taxonomies it creates the possibility of a unitary science, of cumulative and critical knowledge, of the idea of progress, and of our modern historical consciousness. As Elizabeth Eisenstein in her *The Printing Press as an Agent of Change* observes:

More abundantly stocked bookshelves obviously increased opportunities to consult

and compare different texts. Merely by making more scrambled data available, by increasing the output of Aristotelian, Alexandrian and Arabic texts, printers encouraged efforts to unscramble these data. Some medieval coastal maps had long been more accurate than many ancient ones, but few eyes had seen either. Much as maps from different regions and epochs were brought into contact in the course of preparing editions of atlases, so too were technical texts brought together in certain physicians' and astronomers' libraries. Contradictions became more visible; divergent traditions more difficult to reconcile. ... Before trying to account for an "idea" of progress we might look more closely at the duplicating process that made possible not only a sequence of improved editions but also a continuous accumulation of fixed records. For it seems to have been permanence that introduced progressive change.¹⁴

It was the preservation of the old, then, which launched a tradition of the new. A shift in communications preceded the rise of a modern historical consciousness by a century or more. "The past could not be set at a fixed distance", writes Eisentein, "until a uniform spatial and temporal framework had been constructed".¹⁵

Historical consciousness, the explicit consciousness of the fact that what is past is *essentially* different from what is present,¹⁶ implies a fundamental scepticism as regards the usefulness of historical experience. The unfolding of historical consciousness and of the idea of progress is characterized by Koselleck in terms of a divergence of the "limits of the space of experience and the horizon of expectation". It becomes almost a rule, he writes, "that all previous experience can serve as no objection to the otherness of the future".¹⁷ Koselleck cites a contemporary of the French Revolution, for whom that event was an experience which seemed to the world "to pour scorn on all historical wisdom... There grew out of it daily new phenomena to which one could find ever fewer parallels in history".¹⁸ "Inherited historical experience", as Koselleck writes,

was no longer able to be extended directly to experience. ... To this there has come to be added since the end of the 18th century one further fact: that of technical-industrial progress... It becomes a general empirical theorem of scientific invention and of its industrial application that it allows progress to be expected, without however allowing it to be calculated in advance.¹⁹

Koselleck's thesis is

that in the modern age the difference between experience and expectation expands increasingly, or more precisely that the modern age can be conceived of as a new period in human history only since expectations have distanced themselves ever more from the experiences hitherto made... In virtue of this acceleration both political-social as also scientific-technical progress change the rhythm of time and the time intervals of the life-world.²⁰

This ability to realize that the present does not resemble the past, the clear-sightedness acquired by modern man, is however bound up with an illusion of the Enlightenment and generates a certain anthropological blindness. For between the past and the present there do of course obtain deep continuities. Even in the modern life-world there exist pre-literal, non-literal, and even entirely extra-linguistic dimensions. The socialization of young children is pre-literal. The communication between the individual and his primary groups is non-literal (it is spoken, not written).²¹ Entirely outside the sphere of language or very nearly so is the sphere of those technical objectifications, processes and skills of which István Hajnal could affirm that it is precisely in this sphere that “true inventions” take place.²² Because writing creates a certain prejudice in favour of pure reason and thereby a certain distance to the oral and practical levels, it has the effect of alienating its users from the real life-world – an effect of which Plato was conscious, but to which, all the same, his epistemology fell victim. Literacy fully unfolded brings with it also a further sort of epistemological alienation. As Goody and Watt write:

the mere size of the literate repertoire means that the proportion of the whole which any one individual knows must be infinitesimal in comparison with what obtains in oral culture. Literate society, merely by having no system of elimination, no “structural amnesia”, prevents the individual from participating fully in the total cultural tradition to anything like the extent possible in a non-literate society.²³

It is from this perspective, of a lack of “social amnesia”, that Goody and Watt make sense of Nietzsche’s tendency

to describe “we moderns” as “wandering encyclopaedias”. unable to live and act in the present and obsessed by a “‘historical sense’ that injures and finally destroys the living thing, be it a man or a people or a system of culture”.²⁴

It is clear that it is only the age of the printed book which is fully affected by this diagnosis. In Klaus Haefner’s formulation, the current information explosion “with its daily increase of 10 million printed and published pages has forced modern man into a corner of his informational environment which seems relatively arbitrary”.²⁵

Three sorts of cognitive blindness manifest themselves here. First, there is the sort of blindness which follows from the epistemological effects of writing as such: the blindness to *practical* knowledge, to skill and dexterity. Second, there is the informational deficit of the individual in relation to the total knowledge of his community, or of the society

surrounding him, a deficit which arises with literacy and intensifies progressively during the era of typography. Finally there is the incapacity to discover what is common to the past and present and thus to draw lessons from the past for the present. Historical consciousness, the typical consciousness of the typographical culture, is in this sense *blind to the present* – a blindness which, however, the *science* of history does not necessarily have to share. Historical science may be something which is marked by both a sense of history *and*, against this background, a capacity to perceive the social structures and relations currently obtaining.²⁶

What sort of changes are brought about here by developments in computer technology? As regards the blindness concerning practical knowledge, it was precisely the concern with computers in the context of artificial intelligence research which led, in this connection, to a breakthrough in philosophical understanding. That it is precisely our common everyday abilities which are the most difficult to convey to a computer is a discovery which today belongs to the generally accepted wisdom of artificial intelligence research. Now as regards the informational chasm between the individual and his society, this is of course the very problem the solution of which was the original task of electronic data processing and networking. What, now, of the blindness to the present that characterizes historical consciousness? What indeed is to be said about historical consciousness as such in the newly unfolding age of information?

The computer presupposes our literate culture. One types material in, one reads what is on the screen; one processes texts and produces printouts. It is asserted also that electronics does not inhibit but rather expands the production of books.²⁷ And yet it is presumably correct to conceive the age of information as a new world of orality. For it is first of all the case that the fundamental technologies of the computer and of the transmission and fixation of sound and pictures do overlap to a very great degree. Secondly, the computer is involved directly in ordering the mass of information that is broadcast on radio and television. And thirdly one does after all hear that computers will gradually, albeit perhaps in a rudimentary fashion only, become able to grasp our spoken language.

The world of primary orality was, now, oriented about the present and blind to the past; from this however one should not immediately draw conclusions in relation to what we have called above “secondary orality”.²⁸ Contemporary orality, as Walter J. Ong emphasizes,

is post-typographical, incorporating an individualized self-consciousness developed with the aid of writing and print and possessed of more reflectiveness, historical sense, and organized purposefulness than was possible in preliterate oral cultures. ... One of the characteristics of our present culture, with its massive control of knowledge through electronic as well as typographic, chirographic, and oral media, is that it has situated man within his own history and thus given him a sense of self-possession previously unrealizable. ... Explicit and highly analytic knowledge of the past rather than the emotional commitment to ancestors, the "dead", gives man today his sense of identity.²⁹

Yet one can still ask whether this picture drawn by Ong can claim a more than transient validity; or whether there are not certain tendencies at work in the information age which subvert and drive out the literal and typographical culture, and more particularly alter the corresponding consciousness of the past. One of the most immediate sociological consequences of the computer is indeed its quite considerable influence upon our sense of time. For if historical consciousness presupposes an environment in which historical changes take place quickly enough to make themselves felt at all, computerization seems in contrast to have brought about already a technological acceleration which is such as to make even the most recent past irrelevant and even the most imminent future radically unforeseeable. We are held as it were imprisoned in the present. Hermann Lübbe has considered this problem in a number of studies³⁰ and I would like to mention once more the information theorist and classical scholar David Bolter who finds it somewhat ironic "that progress in the computers and in the rest of our current technology is so rapid that it tends to negate history".³¹ The internal manner of functioning of a computer too leads to a new experience of time and progress. On the one hand Bolter recalls under the influence of Spengler the ancient idea of a declining or *self-repeating* history, and on the other hand he points to Christian eschatology, remarking that the computer time is *finite* and the mode of operation of the computer is *cyclic*. "The experience of programming", he writes, "shared by millions of educated people, is helping to change our culture's view of progress and perhaps its view of history itself".³² These observations are not, it is true, entirely convincing. That the internal time of the computer is other than our usual one, that it has a different *duration*, is however clear. Just think of the interesting concept of "realtime".

The phenomenon of word processing acquires here a special significance. The spoken word is flexible, elastic, but vanishes in the moment of speaking. Written language – and even more: printed language

– are enduring but rigid. A text that is stored in the computer, in contrast, is preserved, but also changeable. Language that is entrusted to a word processor is, as Richard Dimler writes, “dynamic rather than static, malleable rather than fixed, soft rather than hard, plastic rather than rigid. As a consequence language never seems to reach a finished stage”.³³ One can of course date one’s files, and specific printouts can be preserved for ever; these are however reflexes of the typographical culture. The text called up from the memory of the computer is as such always simultaneous, is lacking in all history. If it has been stored in an older system, then it will be converted – not, for example, translated or reconstructed. Age-old documents preserved in the computer carry no mark of temporality.

That an environment of timeless texts cannot remain without influence on our sense of time seems to me unquestionable. And we have concentrated here exclusively on the mere text processor – not for example on projects in the realm of artificial intelligence, or on the phenomenon of texts which can change themselves between one reading and the next.³⁴

I have mentioned here matters which have to do with the computer as it really is. Before closing I want to refer briefly to that *ideal* of the emerging age of information which, even though it expresses *an illusion*, is yet not for that reason without effects. And in my opinion this ideal is able to contribute quite essentially to a subversion of the modern historical consciousness. I refer to the ideal of *omniscience*, the illusion that in a culture graced with intelligent computers and global networks everything is *possible*,³⁵ every problem *solvable*, every question *answerable*. Crucially affected by this ideal is the concept of *simulation*. Simulation relates to future events; yet still it must of course occur on the basis of present knowledge. The assumption that one can simulate social-historical processes, even over long time periods and with high probability, seems to come close to the conviction that one understands society and controls history. It comes down to an attitude according to which one could – in Koselleck’s terminology – *experience an expectation*. This, however, is an attitude which is completely incompatible with modern historical consciousness. It conveys an illusory image of the relation of the future to the present. It is *blind to the future*.³⁶

In presenting the disappearance of historical consciousness as a *danger* that is bound up with the new information technology, what I am aiming at is not some new-fangled sort of conservative cultural criticism. What concerns me is, rather, a sober scientific knowledge of history – and

thereby of the still effective traces of the past – the very possibility of which in the future I perceive as being under threat. And nor would I allow myself any illusions concerning the possibility of warding off this threat, were it not for the fact that one can discern a quite definite contrary tendency precisely in this new technology itself. I refer, here, to the gradually dawning purely practical realization that information technology cannot after all be divorced from more classical forms of knowledge, that simple computer-English, too, needs the background of the study of English language and letters. The assumption that for example spelling or hyphenization errors might be capable of being corrected automatically – this assumption is misleading, as every printer knows. As the software-specialist Edsger W. Dijkstra writes: “Besides a mathematical inclination, an exceptionally good mastery of one’s native tongue is the most vital asset of a competent programmer”.³⁷

That a solid semantic apparatus belongs to the presuppositions of clear thinking should of course be evident from the very start. Somewhat less trivial is the realization that the knowledge of classical languages can contribute crucially to the mastery of one’s native tongue. This thesis was defended by Ernst Mach, someone who was otherwise inclined to favour the “new directions of progress”, the “enlightenment that has come from the great mathematical and physical researches of the last centuries”, over against the attachment to ancient cultures. Mach saw it as an obvious consequence of schooling in the ancient languages that it promotes “lucidity and accuracy of expression”.³⁸ Clearly, however, the intelligent employment of ancient Greek or of Latin is hardly imaginable without a corresponding knowledge of the culture and history of the ancient peoples. But this then means that the information explosion of today and tomorrow cannot be mastered, even if we take electronic data processing for granted, by people who are not educated in the classical sense. The perfect mastery of information technology seems to be impossible without an “understanding of our cultural heritage”.³⁹ This task can be fulfilled only by those who are educated both in the new informational skills, and also classically and historically, which is to say, it can only be fulfilled by an elite which preserves book knowledge, and thereby also, even in the computer age, a modern historical consciousness.