Fellows

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PROJECT TITLE

Electronic Networking and the Unity of Knowledge

PROJECT DESCRIPTION

It is a paradoxical feature of electronically mediated communication that it seems both to unify and to fragment one 's knowledge of the world. Already the telegraph-based newspaper on the one hand purports to bring together information from all over the globe and from var ious domains of experience, but is on the other hand a mosaic of unrelated reports. The radio enhances s imultaneity; but it also fosters randomness and evanescence, lessening the listeners ' ability to form an ordered picture from out of what they have heard. The apparently all-encompassing diversity of in formation provided by satellite TV, both verbal and visual, from local gossip to global news, results in a motley of views and messages entirely disconnected.

Texts appearing on the computer screen are of course meant to add up, and to a significant degree indeed do add up, to a coherent and unified whole. I say "Computer screen", referring both to the isolated word processor, possibly with a CD-ROM drive attached, and to the workstation enmeshed in a network. In what follows, too , I will not always discriminate between the two. From our present point of view, there obtain important similarities between them. Both provide access, even if not on

the same scale, to an immense amount of information - data, texts, images, increasingly also sound. They enable one to study reference material in a breadth hitherto inconceivable, and in a depth not practicable in the conventional printed medium. For the scientist and the scholar they offer access to a body of literature very few libraries could furnish. They even herald the promise of re-opening avenues between distinct specialties, of breaking down the line between the "two cultures", of reintegrating knowledge in the classic university spirit. They offer escape, as it has been put, from the pitifully small corner of the cognitive world we live in.

However, both the isolated computer and the networked one, the latter to a vastly greater degree than the former, possess features which appear to amplify, rather than to alleviate, the difficulties of finding one's way around the labyrinths of knowledge. The knowledge stored in computers is physically never present, except for the tiny segments one has on one's screen. Knowledge is not there, like in a book, or in a library, tobe looked up; it is there to be retrieved. Retrieving relies on searching - beyond a certain mass of texts this holds even for the isolated word processor with a single user and with all files punched or copied into it by that user. Directed hierarchical searching presupposes that information, on the disc here, or on the net out there, is already properly structured and ordered - a presupposition rapidly losing plausibility as more novel research areas are approached. The now fashionable idea of treating all retrievable information as mere raw material out of which users might freely establish their own preferred hypertext structures is an acceptance of the fragmented state of knowledge, not a solution to the problems it creates. Automated searching - with keywords or combinations of keywords - is a notoriously poor method, especially in the humanities where meaning almost entirely depends on context. Here the observation that textual database searches conceal as weil as reveal what it is one learns is certainly apt. And even if the search is successful - in the sense that one has either found something one had vaguely hoped one might find or has discovered some unanticipated new connection - one has no satisfactory way to teil how and where the information found fits into some overall pattern, or indeed if there is such a pattern. When reading or browsing through a book, when walking along the shelves of a library, or even when flipping catalogue cards, one gains a sense of orientation the electronic medium does not provide. For one's knowledge tobe in any sense unified, one somehow has to know what one knows, has to have a survey, an overview, a memorized pattern of one's knowledge. One has memory images of certain important passages; one recalls the pattern of text on a printed page, or the location of a volume in a library. When texts are read or scanned on the screen, such an overview will hardly emerge. We may be amused when we learn that the early printers made intense efforts to imitate the handwritten codex both in letter form and in layout, but I still find it more than remarkable that the really successful electronic reference materials today go to great lengths at simulating the printed manual, the manuscript page, or even the physical library. It seems that the unifying potential of electronically mediated communication must in some respects rely on the unifying capacities of the printed book. It seems also to be true, however, that for quite some time now these capacities have shown signs of exhaustion. We might say that due to this exhaustion, and due in particular to questions posed by the advent of the computer, the nature of knowledge has once again become an issue. The issue is a characteristically philosophical one: in it factual difficulties and conceptual paradoxes intermingle.

The issue of knowledge is of course just one among the many philosophical themes that are invariably referred to in connection with the emergence of computers and electronic networking. The notion of the self, of rationality, of meaning, of reality, to mention just some of the most conspicuous ones, all make their appearance here. But the issue of knowledge seems to manifest a particular directness. The feeling that now, once more, or at last, all the knowledge there is could and should be brought together, is a very real one - and real is the despair when perceiving that the idea of over-all knowledge is ever more elusive. According to the by now well-established and widely accepted orality/literacy paradigm, a paradigm that is increasingly feit to provide the proper broad setting in which to discuss the phenomena of electronic word processing and electronic networking, there are

four main phases into which the history of the modes of storage and communication of knowledge divides. These are the phases, first, of primary orality; secondly, of alphabetic writing, with a long prehistory of pictographic writing systems; thirdly, of typography; and lastly, of secondary orality, that is, of electronic audio-visual communication. The knowledge possessed by society is either practical ("knowing how") or verbal ("knowing that"), the latter basically presupposing the former. Practical knowledge is passed on by demonstration, drill, and imitation. Verbal knowledge is passed on by the handing down of texts.

Knowledge based on oral tradition was incoherent; and manuscript culture was still predominantly oral. With the advent of printing however it became gradually possible to establish a firm framework of categories, names, of historical time and geographical space; descriptions, findings, discoveries could be increasingly compared with each other, maps, diagrams, illustrations, figures and calculations reproduced; the modern ideal of a unified knowledge emerged. While every age did of course feel the need to bring together the knowledge society possessed, the conditions to build up a unified framework of ideas were simply not given before the age of the printed book. And by the eighteenth century it became clear to most that the rapidly expanding world of knowledge could actually not be fitted into that framework. The ideal of unified knowledge had been a genuine one during that fleeting moment of history, the sixteenth and seventeenth centuries. Before that, it was unfounded; and after that, unattainable.

In fact the notion of a comprehensive unified knowledge must be found illusive once one realizes that any brauch of knowledge is invariably embedded in particular practices. It appears that skills play a role not only in the crafts, but in science, too. Indeed it was perhaps the main discovery of twentieth-century philosophy that alt knowledge, ultimately, is based on practical knowledge. Certainly this is the common message of both Wittgenstein and Heidegger. Now one can acquire dexterity in several practices; but one cannot summarize different practices into a whole. The idea of a unified practical knowledge does just not make sense. A single perspicuous representation of different language games, as Gordon Baker argues interpreting Wittgenstein, is not conceivable; or, to put the same point differently, a comprehensive and unified knowledge could not be subjectively represented - no mind could serve as its focus, no person could embody the sum of necessary skills. However, inherent in electronically mediated communication there are - also - possibilities which might operate against the trend of fragmentation. First, the mutual support of language and picture, and more still interactive multimedia, can to a significant degree convey the practical layer of theoretical knowledge. Secondly, printed texts, when combined with electronic versions of the same, can be studied more thoroughly and comprehensively than when available on paper only. When hypertext, multimedia, and networking are added to the printed book, the possibilities to achieve a kind of overview of knowledge, to maintain its relative unity, are heightened. I do not believe the library of the future should lack books. My dream of the library of the twenty-first century is a dream of a small number of vast physical libraries: with miles of widely branching out free-access shelves, with many millions of volumes which could only be studied if in fact visiting the collection- or eise of course by switching on a computer anywhere in the world. For this immense material would be entirely accessible through the network, too - accessible to those who through familiarity with real books and real libraries will be capable and motivated to aspire to an autonomous and comprehensive orientation in the world of learning.

CV

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Publications

(Auswahl): Am Rande Europas. Studien zur österreichisch-ungarischen Philosophiegeschichte. Wien: Böhlau, 1988. Historisches Bewußtsein im Jnformationszeitalter. In: D. Mersch, J. C. Nyiri (Hg.): Computer, Kultur, Geschichte: Beiträge zur Philosophie des Informationszeitalters. Wien: Passagen Verlag, 1991. Tradition und Individuality. Essays. Dordrecht: Kluwer, 1992.