
EDITORIAL

Digital knowledge

Time erases knowledge, experience and wisdom. The transience of life, the breadth and diversity of human activity, the maelstrom of events which shift our focus, and our finite time and attention span as individuals, ensure that much is lost as we struggle collectively to progress. The flourishing of intellectual activity in the surgical sciences in the twentieth century and the dramatic progress in a host of technologies and disciplines was underpinned by the growth in medical publishing. In the disciplines allied to cancer surgery, each decade has brought significant developments and further subspecialisation. We need to capture and to archive knowledge such that older works have the immediacy of access of newer material. Our own publishers are now taking steps to digitise all of its own historical material into computer searchable archives by subject cluster (W1).

Writing and imagery have been the key to the preservation of knowledge. The printed journal acts as a depository of knowledge over long time scales. Paper is a time honoured and durable medium, but its demands upon storage and upon time consuming mechanical search constrain easy access to the information upon it. The sheer volume of printed material, and the acceleration in its rate of production with time, impose further disabling constraints upon its historical utility.

Our attention span of this surge of knowledge is blunted by the diet of continual novelty. Our senses and critical faculties are overloaded by the flood of written material. Our recollection may be of the order of months to a few years at best. The written labours of earlier generations of surgeons have little chance of our attention and recollection. The great tomes of the past gather dust in protective custody on library shelves.

A challenge for journal editors and scientific publishers is thus to bring to publication a continual flow of new and stimulating work; while keeping fresh and to the forefront of our minds the best of the huge edifice of experience and knowledge from the past. We wish to avoid the unnecessary, unwanted and costly repetition of ideas and research; and to increase the body of wisdom with which a new generation progresses from the experience of its predecessors.

Computer based archiving of journals and papers increases the speed and compass of intellectual enquiry and curiosity driven study, and the Medline/PubMed model of a scientific literature database is now well established. Archiving can take the form of the capture of page images as pictures, such as is used for some of the earliest manuscripts. Far more usefully, these documents can be recaptured on a word-by-word basis, so as to provide fully searchable digitised texts and images. This process allows historical material to be presented and interrogated in real time with the same convenience and accessibility of recently published documents.

The Internet illustrates the effectiveness of a technology which is now in widespread use for searching and transmitting texts and images within massive and widely distributed databases. The archiving of the entire literature of the cancer sciences would be a challenging and expensive but not an insuperable task. The literature is finite and most material is preserved in public archives or private collections. Some selection, hallmarking and prioritising of material would be necessary. Further classification and coding using expert systems would produce a valuable resource.

The ready facility for accurate, time efficient study of the entire historical archive of cancer epidemiology and treatment might allow hidden truths and patterns to emerge. It would prevent continual rediscovery of old truths, and would avoid the costs and effort of duplicating old research. It would allow linkage of science to personal biographies and historiography, thus allowing developments and practices to be put in the context of prevailing thought, disease and socio-economic circumstances. It would compress time and geography. It would allow the digital projection of local historical experience, as across the Internet. It would allow the convenient study of the historical development of specific therapeutic practices. It would help journal editors and reviewers to check for unwanted duplication and repetition.

The digitisation of knowledge is now in motion. Digital archiving can be readily extended to our personal lives, such that our records, images, writings, diaries can be

captured, compressed and distributed using digital media. The ready access to historic texts will help focus our future researches. It will help us to address unfamiliar problems and relearn strategies for reemerged conditions which were known to our predecessors. It may be many years before a seamless computer archive covers the entirety of published work in our own disciplines. Nevertheless, we can at last see a way to dismantling the boundaries and constraints of time, by constructing better systems of knowledge preservation

and presentation. Our successors and descendants may thus have the opportunity to know us a little better.

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Web Reference

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