

Science, Science Publication, Solution to All Problems.

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We live in a very fast-moving and rapidly changing age. Sometimes we are so caught up with evolving technology that we do not take the trouble to pause for a look at the broad scope, to see where all these developments are leading us, and what the ultimate effect will be. I should like to discuss several models of the future—ways in which there could be a total solution to all problems of science publication: writing, publishing, dissemination and indexing. An article appeared in the *Journal of the American Society for Information Science* several years ago that described how the total solution happened before in a civilization that is now dead (Tyno, 1975). The paper, one of the more erudite published in the *Journal*, discussed the Schlichtmeier Gap, a phenomenon whose conceptualization is based on ideas presented by Marshall McLuhan, principal purveyor of the idea that the medium is the message. McLuhan and his followers believe in aphorisms, which means (if I may put it this way): They like cute phrases which they will not explain. Related to the idea that the medium is the message is the idea that the nature of connections among components is what is important and not the components themselves. In effect the McLuhanists also say that the heart of the matter of connections is the gap between elements—the gap between words; or, *look to the gap!* (or, for the British, *mind the gap!*).

This is old stuff—part of the ancient Druidic religion in Britain, in fact. The story is told of a civilization that developed this focus on connections (many hundreds of years before McLuhan developed a religion around it) and began to concentrate on gaps rather than on words and on substantive elements. Eventually this led to the banning of print, and since they had no magnetic recording devices in those days, banning print meant banning recorded knowledge, and from there it was a short step to the worship of the pure gap or the pure void. This in turn led obviously to the loss of all science, organized religion, art, and journalism. It was, in fact, a

very clean solution to science publication problems, with a few minor side effects—for example, civilization shriveled and died. But then, purity always has its price.

However, here we are in a modern age faced once more with what we have called the information revolution, or information explosion. Should we let it happen again, or can we find solutions this time which will help us avoid the end of civilization (or at least prevent this particular set of problems from being the cause of that end)? There are several paths which could be taken, and which will prevail is unclear at this point in time.

Many of us recognize that word processing, computers, cable television and the like are going to render the printed word obsolete in favor of magnetic storage and electronic communication. (We all put this in our serious stuff and we sell it a few times a year.) Couple this with rapid developments in microelectronics, the decreasing size and cost of computers, a fantastic increase and proliferation of micro- and minicomputer systems, and we have a new world. Everyone will have an ample amount of computer power available to them, sufficient to accomplish any desired task.

Now consider—a common characteristic of almost every information system in the world is the high price that is paid for someone to decide what to record in it and how to record it. In the past, this has always been the work of the cataloger, the indexer, the armies of clerks, and accountants. In the new era, on the other hand, it is going to be cheaper and easier to record absolutely everything than it is to think about what to record. For example, when a scientist runs an experiment or collects data, all of the relevant information will automatically be recorded in full and can be made available to the entire world community at no cost and with no price. Everyone will have the computing power to go through the entire set of

worldwide data banks, so there will be no access problems.

What then is the future of science publication? There will still be science for a while, but what is science publication when everyone already has instantaneous access to all the information recorded by all scientists? Clearly science publication will reduce itself to the mere announcement that some work has been done in thus and such an area. Of course, it will not be necessary to say it in natural language—lists of descriptors will be issued in the place of professional journal literature. There will therefore be no writing of papers, no publication deadlines, no refereeing, no indexers, no abstracters, only direct word to consumer delivery.

An alternative possibility that computer technology might deliver is based on the old and well known suggestion that enough monkeys typing for a long enough time would regenerate the complete works of Shakespeare. Consider this—a fairly thick book contains about 100,000 words or about a million characters. Assuming that there are about a hundred different kinds of characters that might be used in science publication (the alphabet, numbers, Greek letters, and a few extra characters), then there are really less than 100 to the one millionth power possible books. That is certainly a very large number, but it is finite. The computer industry has been promising that costs will keep going down, speed will continue to increase and size decrease. It may take a few years, but imagine what is going to happen at the end of this finite time. Every conceivable review article will have been written. Every conceivable referee's report will have been written. Volume 10 to the 10th will have been written. We shall not need journals; we shall not need research; everything will have been done. This certainly offers the ultimate solution to the problems of science publication.

One problem does remain, however, and its solution will bring the profession to the forefront as judged by humanity's scale of values. The problem is that with all of the world's possible literature written, it will be necessary, more than ever before, to tell fact from fiction. We will be faced with the ultimate in classification problems. The solution may not lie at all in the field of electronics (especially if those who fear artificial intelligence and its implications prevail). Instead, it may lie in biology, and specifically genetics. Genetics researchers are making advances in the field of cloning—the replication of a biological system (including a human being) from one molecule of its genetic information material. This being the case, a worldwide search should be conducted (over several years, and accompanied by rigorous testing) to select the world's greatest indexer, abstractor and cataloger. This individual will then be cloned. The National Library of Medicine will be staffed with 100 identical copies, the Library of Congress Cataloging Division will have its share of 75 such; and every reference librarian in the world will also be a copy. Apart from the gains in indexing quality, this procedure will eliminate inter-indexer inconsistency for all time. Of course there may be problems of sibling rivalry.

References

- Tyno, Siari. 1975. The Schlichtmeier gap: A report based on recent archeological findings. *Journal of the American Society for Information Science*, 26, 259-261.