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ABSTRACT

This discussion of the ethics of the information process provides a brief review of the process of information supply and flow, primarily in science and technology; looks at various points in the flow of information; and highlights particular ethical concerns. Facets of the process discussed in more detail include ways in which some scientists cheat in reporting research results, the reliability of the refereeing process, copyright problems, the issue of censorship in libraries, and dangers posed by computerized information retrieval services. Ethical problems for librarians and information scientists are considered, and arguments presented to demonstrate the need for a code of ethics for these groups. (SW)

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ETHICS OF INFORMATION SUPPLY

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INTRODUCTION

Mr Chairman, ladies and gentlemen. Eight years ago, in September 1972, I attended <sup>M</sup>by first ever information science conference. That was the Aslib conference, here in Sheffield. I remember it well - I was bewildered by the large numbers of delegates present, all of whom seemed to know each other, whereas I didn't know a single other person. I spent the entire four days listening and hardly saying a word. Those of you who know me may find it hard to believe that I hardly said a word, but in those days I was very shy! Well, times have changed and I am now standing in front of you giving a paper on a subject that interests me greatly - that is, on the ethics of information supply. I propose in the next half hour to offer you a collection of potted thoughts, not necessarily linked to each other, on various aspects of information supply and the ethical problems associated with them. It is my intention to be provocative and I hope my words will both anger and interest you sufficiently to make you want to chip in, in the discussion period at the end.

It is usual for a speaker to throw in a caveat about responsibility for the views expressed. So let me make it clear that my remarks do not necessarily express the views of either City University or my employers from a fortnight's time, Derwent Publications Ltd. Furthermore, as you may well discover if you chat me up and buy me a drink sometime during this conference, the remarks I make in this talk do not even necessarily represent my own views!

Well, let me explain to you how I am going to approach this paper. I want to look at the process of information supply and flow, primarily in science and technology but not limiting myself totally to these areas, from the origination of the piece of information to its reception by the user.

I want to look in at various points along this flow of information process and highlight particular ethical problems. Finally, I want to look at whether librarians and information scientists really need a code of ethics.

#### THE PROCESS OF INFORMATION SUPPLY AND FLOW

I don't propose to give you some learned talk about how scientists communicate information, so let's keep it simple. A scientist carries out a piece of research; he publishes it in a journal assuming the referees are satisfied with the work. The paper is then open to public scrutiny and fellow scientists can criticise the paper, perhaps repeat the experiments. The scientist does this, we are told, for altruistic motives to push back the frontiers of science. In fact, of course, he does it because he likes to see his name in print.

Then the paper is abstracted and indexed by secondary services, and these will appear in print and/or in machine - readable form to be searched by people such as you and me - the librarians and information scientists. We receive inquiries from our users, search these secondary services, examine the hits and report back to our users.

Now I am well aware that this is a grossly over - simplified version of what is, in fact, a complex and interesting process, but it will do for my purpose. Let me now look at some of these processes in a bit more detail.

#### CHEATING IN SCIENCE

Let us start with the research which the scientist does. According to Jacob Bronowski in his book "Science and Human Values", 'Scientists .... do not make wild claims, they do not try to persuade at any cost, they appeal neither to popularity nor to authority, they are frank about their ignorance'.

This is stuff that popular images are made of. It is also total nonsense. I have the highest regard for Bronowski but this passage shows considerable naivety. Scientists do cheat, they do appeal to authority and are rarely frank about their ignorance. There is, unfortunately, too great a deference to original sources in our profession. If it appeared in print, it must be true because scientists are honourable men. Not at all. The reward system of science is, to put it crudely but accurately, publish or perish. The pressure to publish is pressure to cut corners. There have been many cases of cheating in science. Not all of these involve PhD students desperately creating results to help their PhD chances - though there is enough of that going on and I did it to get my PhD. It can involve the most eminent of professors, and I have personal knowledge of one well known Professor who invented results regularly and consistently. You have all heard, I am sure, about Sir Cyril Burt who, it seems clear now, fiddled results on IQ tests to suit his own prejudices and in doing so influenced British educational practice for very many years. You probably also know that Mendel results were too good to be true. You may not know that the entomologist Theodore Cockerell was publishing two articles per week for many years - this -too, I regard as cheating. There is no way a person could be responsible for so much research - he was adding his name to papers written by co-authors who had really done the work.

O.K. So let me sum up on what I've said so far. I suspect that cheating in science occurs far more often than is usually thought to be the case. The implications of this for librarians and information scientists is simply to beware - don't believe everything you see in print, no matter how eminent the author is.

## REFEREEING

Let us imagine that we have got over our first hurdle and that the scientist has prepared an honest piece of work which he submits for publication. (When I say HE, I of course mean he or she throughout). The piece of work has to be refereed before going on to publication. Surely there are no ethical problems there?

Well in fact there are lots of problems with the refereeing procedures. Let me tell you a couple of true stories:

- 1) Lord Rayleigh, an eminent nineteenth century scientist, submitted a manuscript to a prestigious journal, but forgot to add his name. The referees rejected it as rubbish. Just then, he wrote to the editor apologising for missing his name out of the manuscript. The editor promptly dropped the rejection!
- 2) The second case involves two rival academics who were the world's experts on a particular specialist topic. One of the Professors wrote an article which he submitted to a journal. It was passed by the editor to the other expert for refereeing. The referee immediately realised this was a breakthrough paper. So he raised all sorts of trivial objections whilst he submitted a virtually identical paper to a journal which, he knew, did not use referees and published quickly. It duly appeared in print and the rival got the credit!

Obviously, then, the refereeing system can be abused. But how serious a problem is this in practice? Zuckerman and Marton carried out a study on the agreements of referees about the scientific quality of a paper sent to them for evaluation.

In biomedical topics, the agreement between two referees on the scientific merit of a paper was not much better than would be expected by chance.

In a similar study by Inglefinger on medical papers, it was found that only in the category of papers recommended for outright rejection - i.e. very poor papers - did referees show consistent agreement.

Why is there this lack of agreement? Partly, two referees will have different standards and differing views on what is important. It also depends on how much time they spent studying the paper, whether they had an argument with the wife that morning, etc. Partly, it may be due to differing levels of competence. Undoubtedly, prejudice plays a part; is the author a friend of the referee? (He may even then ring up the author to chat about the manuscript). Is the author famous? Is the subject - matter non - controversial? Does it express a viewpoint contrary to the referee's? Is the author an arch-rival of the referee?

Few studies done indicate the importance of these factors. In one case, 75 papers were sent to 75 referees. All were identical in bibliography, introduction, methods, but differed in results and conclusions. If the conclusions corresponded to the referees' views, they recommended publication. If not, they recommended rejection. The latter group scrutinised the papers they got more carefully!

Interestingly, it has been shown that referees opinions don't always coincide with subsequent scientific acceptance of a paper. Thus papers which just scraped through have been found to get higher citation counts than those which waltzed through.

Another study has shown that the more similar your referee's professional background is to your own, the more likely your paper will be accepted.

All this can result in the rejection of excellent manuscripts. Important papers by Mendel, Fourier and Krebs (a biochemist) were obstructed by referees. Waterston's paper (now regarded as a classic) on the kinetic theory of gases was described by one referee as "nothing but nonsense"!

In all fairness, it should be said that a good paper does normally get published eventually, though maybe in a less prestigious journal. The author whose paper is rejected resubmits it to a journal with lower refereeing standards.

Why should all this be of interest to the librarian or information scientist? Once again, it serves to demonstrate the fallibility of the methods of producing primary information currently employed.

Having noted one or two of the problems associated with information supply at the primary publication stage, I now want to consider ethical problems of information supply for the librarian and information scientist. Under this heading, I want to look at the following topics - copyright, censorship, the dangers of computerised information retrieval services and ethical problems for librarians and information scientists. I then want to end up with a discussion on the need, or lack of need, for a code of ethics for librarians and information scientists.

So let me start off with a few words on that notorious subject .....

..... COPYRIGHT

I am sure I don't need to explain to you the problems that copyright poses for you and I. Copyright legislation hampers the free transfer of information between the librarian or the information officer and his customer. This is not what the scientist that originated the work would wish - he wishes to obtain maximum publicity. It is because the publisher needs protection that copyright exists. I don't intend to go into the technicalities of the copyright jungle, but just make one observation. A Law is not worth the paper it is written on if it can be easily flouted without detection and if a substantial proportion of the populace thinks it is a bad Law.



Copyright Law, both as it affects us and as it affects the music business in regard to blank cassette tapes falls into this sort of law. We all know that with Xerox and similar machines available all over the place, anyone can photocopy what he likes as much as he likes without detection. Furthermore, most people regard copyright law as a nuisance, so their conscience is hardly pricked by excessive photocopying.

It is clear to me, therefore, that our present copyright law is useless and should be amended. What is required is a simple procedure which protects publishers' interests whilst imposing no bureaucracy on librarians and information scientists. I would suggest a fee, added to the cost of purchase or lease of all photocopiers may suffice. Sure, this might be inequitable in that some photocopiers never even get a glimpse of copyrighted material, whilst those in BLLD get considerable exposure to them. But life is unfair. We pay a portion of our taxes to education whether or not we have children being educated. The funds thus raised could be distributed by some central agency based on random samplings of what photocopying has occurred. Of course the system is a blanket licence system, so there would be no more signing copyright forms and so on.

I would be interested to hear your reactions to this idea of mine.

#### CENSORSHIP

Let me move on quickly to another area of ethics for librarians, that of censorship.

All libraries have to be selective. They select items according to a number of criteria. What worries me is the way some librarians or their committees, seem to want to control what people read. Now I accept that we have certain national laws which restrict what can be printed so that obscene or libellous publications can be restricted.

Unfortunately, libraries have regularly excluded materials of which they disapproved on political, religious or similar grounds. In my view, if there are librarians who are opposed to what they regard as corrupting and evil influences - but that these works have not been in any way banned nationally - then those librarians should resign forthwith.

However, my arguments do not only apply to public librarians, which is what you might think. Librarians in all organisations should obtain relevant materials, even if those materials express viewpoints contrary to those of the librarian. I see this as part of the fundamental duty of a librarian and I am saddened that the Library Association's draft code of ethics make no such assertion.

#### THE DANGERS OF COMPUTERISED IR SERVICES

For some years I have expressed views of the dangers of our love affair with computerised information retrieval services. Let me summarise these fears for you in a couple of minutes: I believe the wide public concern about databases in regard to privacy is misdirected. That is not to say I regard the issue as trivial - quite the reverse - but it is part of a much larger social problem. That is the problem that only select elements within society own, have access to, and control the utilisation of computerised information retrieval systems. Imagine a society in which all schools and libraries are owned by certain multinational corporations, military agencies and the like. Let admission to the schools and libraries be controlled by these organisations. I think you would all find that unpalatable. And yet this is exactly what we are getting with computerised IR systems. From time immemorial access to information has been surrounded by rites of admission to the sacred source. For a short period of human history - the last 100 years or so - this has not

been true, but I am afraid it will happen again.

It is my opinion that access to online IR systems will increasingly be confined to the wealthy and important in our world. Even within the so-called developed world - countries such as this one - only the rich and powerful will have access. I am also concerned that government and other agencies can, and almost certainly do, eavesdrop on computerised searches to see what citizens are interested in. It is difficult to see how an oppressive government could have kept track of the reading and searching habits of its citizens in the good old days of manual IR systems. Now it can, and probably does. Finally, I am concerned that the agencies which control IR systems may distort the information provided so that customers known to conform to certain pre-set norms get full access, whilst other customers noted for their non-conformity, political, social or what have you, may get reduced or distorted access without their knowledge. When it comes to matters like this, I am very cynical. If it could be done - if it were technically possible - then it may well be done. Recent exposes on illicit telephone tapping and letter-opening by government agencies lead me to doubt worthy assurances.

So my concerns about computerised IR are twofold - the fact that it increases the gap between the information rich and information poor, and the fact that governments and other interested parties can observe what searches are being done and perhaps distort what information is supplied. How one best protects against these problems is not so easy to describe. At the very least, we need to be aware of the implications of computerised IR. I also think we should be working to influence government to mitigate the bad side effects of the new technology. This is something none of the three bodies sponsoring this conference have got involved in yet. It is high time they did.

## ETHICAL PROBLEMS FOR LIBRARIANS AND INFORMATION SCIENTISTS

You may be aware of two events relevant to ethics for librarians and information scientists. The first is the fact that the LA is at present working on a code of ethics for librarians. The American Library Association have had codes for many years, but I believe this is the first time the UK body has got involved. Secondly, you may have seen a recent article by Barbara Kostrewski and myself entitled "Ethics in Information Science". It appeared in J. Inf. Science, 1980, 1, 277-283. Reaction to this paper has been interesting. It has certainly aroused a lot of interest - more reprint requests for this paper than for all but one of my previous papers, and more written and oral comments than to any of my previous papers. One eminent person told me it was the worst paper I had ever written. I told him that of course it was a joint paper and that I only contributed half. Another, even more eminent figure in our field told me it was the best paper I had ever written. I agreed with her modestly.

Returning to the LA's code of ethics, it would be unfair of me to comment on it in detail. I have only seen a draft, but that is probably more than most of you have seen. It seemed to me to be typical of its type - with bland platitudes and little real guidance for a perplexed librarian. Certainly the LA is unlikely to get into many political battles with such a code. There is nothing about legal liability for quality of information supplied - a thorny question which exercises American information brokers a lot but which ought to also concern librarians and information scientists in this country. There is also nothing about Freedom of Information legislation - a topic that the Australian Library Association, New Zealand, L.A. and IFLA are all concerned with. This is a subject that ought to be in a code of ethics. The LA should

assert that all members of society have a right of access to information, subject to the equal right to privacy for individuals. It is true that sometimes the right to access information contradicts the right to privacy. A code of ethics might help resolve such contradictory situations. In contrast, I hope our paper in J. Inf. Science was a little more concrete. We looked at specific problems that arise on the course of an information scientists job and what problems arose.

We looked at areas of information science research that ought not to be attempted because of possible abuse of the results, and at the ethics of teaching information science. However, we were mainly concerned about the ethics of information work. I would like to mention two particular issues from our paper. Firstly, we recommended that information scientists should consider passing over details of side-effect of drugs to members of the public that had been prescribed these drugs, assuming that GP was prepared to provide such information. On this issue Barbara and I were in agreement.

On the second issue we were in total disagreement. This is the question of the information scientist's duty to society. What if an information scientist in the course of his duties discovers that his employers have in some way broken the law or lied to the public. Do they have a duty to leak information? I feel strongly that they do have such a duty, even if the data involved includes unpublished and confidential data. I feel the employee's duty to society over rides that to his or her employers. Barbara, and I know other people, do not agree with me. I would be very willing to enter into a debate on this topic in the time for discussion.

## IS A CODE OF ETHICS NECESSARY?

Well, the Library Association is at present working on its code of ethics, the IIS has yet to think about one. Many bodies have codes of ethics including, of course, the Hippocratic Oath. Other codes include those of the American Library Association, the Association of Computing Machinery, the RIC, the American Chemical Society, The Association of the Pulp and Paper Industry, the National Association of Professional Engineers, the Operations Research Association, the American Psychological Association, the Ecological Society of America, and the World Psychiatric Association. The American Society for Information Science has published a statement on scientific freedom and responsibility in which it posed a number of questions

- when should any information source be responsible for content quality?
- where is the line to be drawn between editorial selectivity and censorship?
- How does an organisation respond to scientific controversies?
- what responsibility is there for initiating communication on issues?
- who determines who is served and when is refusal of service justified?
- what about confidentiality of inquiry and privacy of sources?
- can one reveal weaknesses of information services and sources?

All this appeared in JASIS July/August 1979 issue. No answers were offered and nothing further seems to have come of this paper.

So, it is clear a lot of organisations are into codes of ethics. Do we need them?

My own view is yes, but not for the reason that many have. Many people are in favour of librarianship and information science becoming a profession, with codes of conduct and expulsion of anyone who transgresses. By implication the public are protected by the integrity of the controlling body. Codes of

ethics are usually regarded as a necessary step towards professionalism.

I am very strongly apposed to professions and professionalism. All too quickly they become inbred organisations reacting to outside criticism by closing ranks and quietly condoning transgressors unless the transgression is too blatant to be ignored. So I do not belong to that group of people who regard a code as a necessary first step to achieving professional status. But I do favour a code of ethics for librarians and information scientists. This is not so that transgressors are in any way liable to expulsion from the LA or IIS, but so that these bodies are committed to a certain stance in the case of a dispute between a member and an employer on, say, the question of censoring books for the public library. In other words, I favour a code of ethics as a statement of the Library Association's and the Institute of Information Scientist's commitment to the free and unbiased distribution of information. I would also favour the two bodies using experts who would be available to advise members in cases of potential conflict.

#### SUMMING UP

Let me try and sum up what I have told you in this talk.

Firstly, it is my contention that cheating accours far more often in science than is often thought to be the case, and we as librarians and information scientists ought therefore to retain a healthy scepticism of what appears in print.

Next, the refereeing system can be capricious and unreliable. Once again, this has implications for what appears in print.

Thirdly, I put it to you that our copyright law is at present an irritating irrelevance largely ignored by most information officers. I suggest a blanket license fee on all photocopiers.

Fourthly, I believe no librarian should attempt to act as a censor; any material which is not illegal should be made available to the users.

Fifthly, I see substantial risks inherent in our love affair with computerised information retrieval services. Librarians and information officers must be made aware of these risks and must press governments to adopt policies to minimise the risks.

Next, I believe information officers in the pharmaceutical industry should be prepared to pass details of drug sale effect to people on those drugs.

Next, I believe that information scientists has a duty to make public, by fair means or fact, if he has information indicating his employers have broken the law or the spirit of the law, or have not told the truth, the whole truth and nothing but the truth in their public statements.

Finally, I believe we should have a code of ethics, not because I want us to become professionals but because I believe the LA and IIS should offer advice to its members and should adopt particular policies when a member is in dispute with his employers.