
8 WRITING FOR SCIENTIFIC JOURNALS

G M Carman

There are now, and have been, a tremendous number of scientific journals coming into being in the world over the past three or four decades. It would seem that they have plateaued recently, and that some primary selection is being made on papers submitted to such journals, and in my opinion the reason for the slow-down, and the failure of journals to continue is simply money. We cannot continue to publish the number of journals in this exponential manner and survive because we simply do not have the money, nor the where-with-all to handle the journals, and the papers they produce. However, at the present time there are some 10,000 journals and I would see that number continuing into the foreseeable future. But, there are alterations coming in the way that we use these journals, in the light of the massive amount of information coming out and the financial restrictions present, and I think these are going to come to the fore in the future and I will attempt to present these alternatives to you now.

The Abstract

The first is already apparent - we are going to use the abstract of the paper rather than the paper in most cases. It would be cheaper to publish, and cheaper to distribute, and the person that wants the full paper can then write to the author himself. At the present time, a good abstract must be attached to each paper, and most journals are demanding that this abstract be thorough, concise, with a maximum of three hundred words, and that these words must be within a certain vocabulary that is suitable to machine translation. When you walk into the agriculture information office in Moscow, where the world's journals come in, you will find the abstracts taken and put through the machine translation unit. They are then checked by scientists themselves, and then these abstracts only go to the scientists working in the field. If he is interested he can write in, and get the full text of the paper that has been abstracted. Until fairly recently, if you examine the record, the scientists got a title only translation and anything that looked at all attractive was requested and they then had to translate the whole paper. And the paper blizzard in the Soviet Union is no different from that of our own (in Canada). You can simply translate it to your own country and find the same problems, although probably in much smaller volume.

So, they have gone to this system and I think you are going to see more and more of us go to this system in the future, both as machine translation becomes more viable, and the volume of literature has to be surveyed. This is never going to take the place - and may I repeat the word "never" - of reading the technical paper that the scientist has to have that fits in with his own work. The abstract simply gives him more identification than the title of what is in the paper, and whether he needs it or not.

Board of Referees

We have been looking at our own costs in Canada, and when I was in the United States recently I found that they were considering the costs of certain journals with the same problems in mind. The costs are going up, mailing costs are going up, and due to lack of suitable postal services a great number are not reaching their destination so they have to be remailed and the costs then become unbearable, and will continue to become more so as money becomes tighter, and the number of journals stabilizes. There has been a suggestion made, of which Professor Vahrman will not approve, and of which I do not necessarily approve but I personally believe is going to be the rule of the future, and this is the way that the journals themselves will have to function to survive. There will be a board of referees for a journal that will survey the articles that come in, that will act as more than our present board of referees, because they will recommend as to whether the article is going to be published in its entirety, as a short summary, or simply as a title. In the first short time I would feel that these boards of referees will perhaps place the outstanding four or five papers in their entirety in the journals, and put all other submissions in merely as summaries. For those referees there will be no quicker way to lose friends in the scientific field than to do that, but it may very well be that this is the only way that the scientific journal, as a working tool for the scientists, can survive. When the papers that are going to be published in their entirety are selected, they will be given the full treatment - the referees, the editing, and a clean presentation. The rough rule of thumb that has been set up in this planning is that only about one paper in seven is going to be published in full, and in some of the biological journals the demand is so high that this will go to ten at the very most.

Before this policy, or plan is the more appropriate word for it, was suggested to some of the journals, they went to a dry run. A group of referees was asked to do this with a journal in chemistry in one month copy and another group a journal of biological science for the next month, and so on. They classified the papers, and it was amazing how close the referees came in all cases. In one particular example of which I am aware, they said that they would put in only one of the papers printed in the journal in its entirety, they would have put seven in by summary and a rather large number of others by title only.

In another journal of economics, the editors examined one monthly issue and said that there was no paper there worthy of more than a summary. Conversely, in the next issue they had seven, and in the third they had ten. What this is going to do is throw a tremendous amount of responsibility on the referees, and make it mandatory that their identity be kept secret, because there is nobody half as angry as a scientist scorned by another scientist. I have personally experience in this field, since as a referee I have on more than on occasion turned down a paper from an old school chum, and he has later ignored me completely.

I think this is going to have to come, because we cannot afford the continuing publication blizzard that we have. You are going to see more and more use of the abstract in the journal for the scientist himself, and you're going to see more and more use of the personalized abstracting service which now can be done by the computer.

The Selecting Abstracting Practice

There is a rather rude expression that says "garbage in gives garbage out." So this means that as the competition for papers goes up, only the top quality ones are going to make the journals, and the mediocre material will be weaned out. The practice of abstracting has been going on for twenty-five or thirty years, in very great detail and it has become an art and a science in recent years. The good abstracter gives top rating to the good paper, and small mention of the mediocre one, and this in turn helps the reader. In most abstracting journals today, they do not abstract everything - they have what they call a selecting abstracting practice where the abstracter himself weans out those papers that do not warrant repetition.

In some journals it has been the practice for some years now to put in papers of lesser merit by title only, but since it now costs about seven dollars to handle that title on the computer I think you will see that this practice will decrease as well. Be that as it may, these are some of the changes that I think you can see coming, for the simple reason that mankind has published himself into a corner, he still must get scientific knowledge circulated in all languages, and the very volume that is at present being published makes this practically impossible.

This does not mean that you're going to see only one abstracting journal; it does not mean that you are going to see a journal of titles only; but what it does mean is that professional journals will become more professional in each science, the quality of the writing will have to improve, and the selection by the scientist himself will have to improve.

The Quality of Writing

This brings up another problem - the quality of writing. It is acknowledged that the average graduate today with a Bachelors Degree in North America has been going down hill in his knowledge of the language over the past twenty-five years, and from what I can read the European Universities are not far behind. The best English that I know of today that's being written is being written by colleges and universities where English is taken as a second language, and where they have had to learn their grammar well. This is a problem that you will have to face in your school system, and particularly in your college training. To leave it until the student is in post-graduate work, or out in the field as a scientist simply puts off the day when it must be done, and the whole world is finding this out in all languages.

But the reason that people like myself are in the work of communication is because the work of the Professor Vahrman in this world wasn't getting out, and isn't getting out to the person in the field behind the tractor, or to the manufacturer, the industrialist, the farmer, or whoever else is interested. This goes across all levels of science and is not restricted to agriculture, forestry or fisheries, but is even more critical in other areas.

There are more and more people today that are scientists that are becoming increasingly sensitive about this, and I hope that the people that are administering science, and the politicians are listening because you can't invest money in research and then get it out if you do not get the information out to the end user to justify that research, either morally or ethically without having to assume the final responsibility. And, as governments are having to cut back on their finances year by year they are taking quick looks at where the easiest cuts can be made, and in research it probably is in the dissemination of research itself. This is an ever-present danger, so the scientific community had better wake up to the fact that there has to be an intermediary link between themselves, to justify their existence in the scientific field. It has been said that technology is twenty to thirty years ahead of what we are at present using, and I have seen nothing in the literature for the past five years that would argue against that statement. If that is not an indictment of our present scientific communication system then nothing ever is. Here in your own country yesterday I was asking why you didn't use the water out of the river rather than drill your wells and I was told it was easier to go down thirteen to fourteen hundred feet where you're getting real top quality water and put it in the system than to use that from the river. I don't believe that. I think the present state of the engineering art here may make it so, but when I take a look at the systems throughout the rest of the world that I have seen, I am positive that it is not so.

Take a look at the systems that are being used now and I'm equally sure that more than the Israelis are using salt water to irrigate orange groves, and it was known back in 1921 to 1923 when the system was perfected that the osmotic differential of straws was sufficient to remove most of the salt and permit the use of brackish water. We have had that skill for all this time and still there are areas of the world alongside the oceans that are not able to use that water. There is no way that science can continue to take a back seat in this regard and mankind will survive.

A Responsibility

The scientific community, in brief summary, has a responsibility to make the information of their research available to the end users, and you people as communicators have to fill that intermediary link. Most governments have not yet realised it, and most scientists are not bothering, but you had better make yourselves heard, because otherwise you as communicators, and the scientist as a scientist, will not survive as the ever-increasing demands for funds are required to justify your common existence.