

# The Impact of Electronic Publishing on the Academic Community

## Session 3: The content and quality of academic communication

### The traditional journal

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I am the editor of *Physics Letters B*, a major journal which runs to some 12\000 pages per year. Our main content is theoretical high-energy physics which is handled by five editors. Our responsibilities are shared territorially; I am responsible for northern Europe, including the countries of the former Soviet Union.

The editors work independently. We have only loose contact with each other and with the publisher. Obviously we cannot claim to operate to exactly the same standards, and I know that authors feel that we differ in our degree of severity but, as far as I can determine, these differences are not generally perceived to be great. Because of pressure from authors and developments in the subject, the scope of the journal has widened over the years, and high-energy physics is now deemed to include also gravity theory, cosmology and even some condensed-matter physics. The editors are all working physicists. Although our subject is too wide for any of us to understand more than a fraction of the papers, we are in close contact with those who work right across the subject and this is important for selecting referees and for assessing their reports. In this respect we differ significantly from journals that are run by editors who do not themselves do research.

I receive about 530 papers per year, and spend a short time each day on editorial work. It is only when I go away from Cambridge, so that a backlog builds up, that the job becomes a burden. The work is interesting. Nevertheless, it is an ever-present responsibility throughout the year, and so it is essential that the editors be paid. Three of the five high-energy physics editors have been in-post for 15 years or more, and this continuity is valuable.

*Physics Letters B* is published by Elsevier. In Europe, all the successful high-energy physics journals have commercial publishers. More than one learned society has tried to compete, but their attempts have failed. I cannot explain why some journals are successful and others are not, but it is important that editors of successful ones be ever mindful that history has shown that successful journals can go into decline.

We have no central editorial office and operate with the very minimum of bureaucracy. The standard letter to referees reads as follows: I should like to ask you to act as referee of the enclosed manuscript: Reference number Author(s) I should be grateful if you would send me back the manuscript together with two copies of your opinion using the enclosed sheet. Please bear in mind that *Physics Letters B* is intended for papers that have some claim to rapid publication. This means that they should be interesting and likely to influence the research of some of the people who read them. They should normally be no longer than four journal pages, though this can be exceeded by a page or two for particularly worthwhile papers. Thank you very much for your help.

Contrast this with the three pages of instructions I received when a major American journal asked me to referee a paper last week; needless to say, I read none of that. The most important word in my letter is 'interesting'.

The editors have a duty to maintain standards, but we should always remember that it is deeply wounding for authors to have their work rejected. When a referee receives a paper, it is often easy to decide that it does not merit publishing in the journal, but much harder to articulate exactly why. When the author receives an adverse report a normal reaction is that the referee has not understood the paper. This is quite likely to be true --- few referees are infallible --- but I tell that author that the referee is an expert and that if he or she cannot understand then other readers surely will have the same problem and therefore it is worth trying to improve the explanation. Sometimes I advise the author that a polite response to the referee is more likely to achieve a meeting of minds than an angry one.

It is important to recognize the very valuable service that authors often receive from referees in helping to improve their papers. Referees give their help mainly out of a sense of duty and a feeling that they have a responsibility to help make the system work; from time to time they are authors themselves. One does also receive a more direct benefit from refereeing: we are all very busy and it can be valuable to be forced occasionally to read a paper thoroughly. I myself have on occasions found that refereeing has led me to do research that has led to a publication.

We must remember, though, that referees are busy people and a valuable resource. Some journals squander this resource in a disgraceful way. Once a referee has worked on a paper and given an opinion it must not be ignored. We normally consult just one referee and get a second opinion only in cases where the author cannot satisfy the first referee and makes a reasoned case for further consideration of the paper. I find that I need to consult a second referee for just a few percent of the papers. The second referee may agree with the (anonymous) opinion of the first one, or may agree that the paper is bad but for a different reason. If the second referee does recommend publication, perhaps after some changes to the paper, I explain to the first referee what has happened. It is the duty of an editor to try and make both authors and referees feel that

they are fairly treated. Of course, the author is in the more sensitive position, and it is inevitable that some are left with a feeling of grievance. In a few cases this feeling is strong and is conveyed to the editor in vigorous terms. That is part of the job of being an editor.

Where does computerization fit into all this? High-energy physicists have always been in the lead in their use of computers<sup>1</sup>. Experimental results are available on a database maintained by Durham University, publication lists are maintained by the Stanford Linear Accelerator Center and preprints are stored on an archive at Los Alamos National Laboratory. Papers are written in TEX, and postscript figures are embedded in the text. Some of the papers submitted to *Physics Letters B* arrive by e-mail, though not all the editors actively encourage this. The countries that need this service most, because of their poor postal systems, often are non-UNIX and it is very often difficult for the editor to compile their files, particularly when there are figures.

E-mail is extremely valuable for communication between editors and referees. Referees are expected to produce their reports within about three weeks. Very many do without reminders, but for those who need reminding, for some reason e-mail is a more effective spur than other methods.

Most of the editors use a computer to keep records of papers received and of their progress through the system. When the paper is accepted, the publisher asks the author to e-mail a LATEX file, though so far he still asks for a hard copy from which he scans the figure. My general attitude to computerization is one of great enthusiasm, though it is tempered with caution. *Physics Letters B* is highly successful and changes need to be made with care. People still prefer to deal with people rather than computers, and they and their institutions need publications in recognized journals. In creating new systems, with all their advantages, we must take care not to lose the advantage of the old.

A particular problem is how to filter the avalanche of information that is now available to us. I greatly appreciate the ability to pull to my desk the preprints stored at Los Alamos, but more and more I read only what I know I want to read. By browsing through a pile of preprints that used to arrive in the old-fashioned way I often noticed interesting things I was not looking for. Losing this is damaging, because theoretical research largely consists of developing techniques to solve particular problems, and it often turns out that these techniques can also be applied to completely different problems.

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<sup>1</sup> Nowadays, many take advantage of LINUX, which is available free of charge and transforms a personal computer into the equivalent of a powerful work station. See <http://www.ssc.com/linux/>

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