



# Maths matters

## A critique of 'Best Current Practices for Journals'

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The International Mathematical Union (IMU) recently issued a statement of 'best current practices for journals'\*. It is an interesting and thought-provoking document, with a number of very useful suggestions. However it appears to me, as a journal editor, referee and user, that it has a number of gaps and omissions. The IMU seems to be focussing on the responsibilities of journals, but has little to say about the responsibilities of authors, not only in the document in question, but generally in the material visible at the IMU's website. Also I think that we are all aware that universities are finding it increasingly difficult to pay journal subscriptions. I will touch on the question of price after first discussing the IMU statement from an editor's point of view.

### Poor behaviour by authors

For many editors, plagiarism is a worsening problem. I recall the case of an Italian mathematician who translated papers (by others and without their consent) from Romanian and published them in Italian under his own name. While I was editor of the *Bulletin of the Australian Mathematical Society*, I identified a Korean mathematician who was taking preprints and changing the title and author's name, then submitting them as his own work. This is clearly plagiarism; but neither Italian law nor the Korean university was able to deal with the problem adequately.

There are many cases of authors who write essentially the same article in two different languages. There is an argument that this is legitimate, if the second version of the paper is written in a language that is more widely understood than the first version, but there is also an argument that it is not, especially if the original article is not cited.

As an editor for the Australian Mathematical Society, I have seen a range of what might be considered unethical practices, ranging from the blatant copying mentioned above, to the simultaneous submission to different journals of papers where the authors have found a new and powerful technique and turned it into a number of almost identical papers, each an application of the same technique but in a slightly different situation. I have seen many papers whose introductions were almost *verbatim* copies of introductions of previous papers by the same authors.

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\*Re-printed in the *Gazette* 37(5), November 2010.

For a non-English-speaking author, the effort of writing the introduction is often as great as writing the rest of the paper, and it is hardly surprising that many choose to vary the introduction of a previous effort. In my own area, mathematical analysis, one can prove results in Hilbert spaces, in Lebesgue spaces, in Sobolev spaces, in Lorentz spaces, in Triebel–Lizorkin spaces, in Besov spaces, and so on. In general, new ideas are needed to prove the results in Hilbert spaces and then more new ideas are needed to generalise from Hilbert spaces to Lebesgue spaces, but thereafter it is usually just a matter of being a little more careful with convergence of sums and making the paper longer to deal with the additional indices on the spaces. Are extensions beyond Lebesgue spaces plagiarism? I tend to think not, but when a number of essentially identical extensions are published in a number of different papers in different journals at the same time, then I wonder. In a world where many institutions reward their staff according to the number of papers produced, it is hardly surprising that some mathematicians cut corners to produce more.

Dealing with plagiarism is complex, and perhaps the key problem that we face is that the definition is not clear. In Western cultures, repeating the words of another without acknowledgement is considered plagiarism, but in some other cultures, it is considered a sign of respect, especially for one's teacher or senior colleagues. It seems to me that the first thing that is needed to tackle this problem is a clear statement of what is plagiarism and what is not. The IMU document mentions both 'plagiarism' and 'self-plagiarism' but does not say clearly what these are. I would ask the IMU to please draw up definitions of plagiarism and self-plagiarism, and translate them into many languages so that we have an agreed statement of what is acceptable and what is not. The nature of mathematical generalisation is such that the dictionary definitions are not adequate.

### **Problems with editors and editorial boards**

One of the worst things that can happen to the author of a paper is for the journal to hold on to a paper for several years and then reject it. The IMU document talks about 'timeliness', but I would suggest that stronger recommendations are needed than the IMU gives. An IMU recommendation that chief editors monitor the performance of the editorial board might not have gone astray.

The American Mathematical Society publishes information about the typical times between submission and publication of articles, but not all journals participate in their survey. Typically, editors have spreadsheets (or similar) of all the papers in their system, and it would be a simple exercise for journals to provide backlog information on their websites. They should also provide information about whether they have quotas for particular areas of mathematics. Such quotas may mean that the time from submission to publication may be four or five years for papers in some areas, while the published information about the journal may suggest that two years is typical. If a quota system is in place, then journals should be honest about this, and not mislead the mathematical public with incorrect information.

## Problems with refereeing

The responsibility of the referee — to provide an impartial judgement on the paper — is mentioned in the IMU document. But there are problems with refereeing that should be acknowledged. First and foremost, as we move into the brave new world of Research Assessment Exercises and the like, it must be observed that ‘the system’ does not give credit for refereeing. Surely refereeing (and other editorial work) is important to uphold standards in the research community; so why is this not recognised? Perhaps the IMU might like to argue this case?

Refereeing is a job without rewards, but it is also a job with growing frustrations. I have been told rather too many times by referees that ‘this is the  $n$ th time that I’ve seen this paper’. There are then two alternative ways in which such a report continues: in one case, it appears that the authors have received a rejection and a referee’s report, but have not even bothered to make the corrections suggested by the referee, rather, they have simply resubmitted the paper to another journal. This is bad behaviour, but it is bad behaviour that goes unpunished. The IMU suggests that editors might apply sanctions such as black-listing an author for a while, but with several thousand journals available, being black-listed on some of these is not a real deterrent. So what should be done to such authors? It would not be hard to set up a system that would compare files sent to different journals and identify the offenders, but this would have to be done with the backing of a body such as the IMU.

Here is the other way in which ‘this is the  $n$ th time that I’ve seen this paper’ ends: ‘I have made suggestions to correct the mathematics and improve the writing on four previous occasions, and finally the paper is beginning to look as though another few iterations will produce something publishable’. In other words, there are authors who rely on referees to correct their mathematics and proofread the English. One might conclude that the final paper owes as much to referees as to the author.

Until recently, various institutions regularly received ‘proofs’ of Fermat’s Last Theorem (now they are ‘short proofs of Fermat’s Last Theorem’, but mercifully they are fewer than in the past). One of these institutions is renowned for having produced a large number of copies of a printed note: ‘Thank you for your paper on Fermat’s Last Theorem. The proof does not appear to be complete. The first mistake is on line ...’. The referee would then just fill in the line number where the first mistake was noted. Is the IMU willing to encourage journals to respond in this way to authors who submit seriously flawed papers? If not, what action can be taken to protect referees from this sort of abuse?

## Publishing costs and journal subscription prices

Last but not least, from the editorial point of view, we are sometimes told that the arrival of  $\text{\TeX}$  means that the cost of producing journals has gone down. This is not true: many authors use  $\text{\TeX}$  inexpertly. When I see that the  $\text{\TeX}$  file of a paper begins with three hundred lines of macros (some of which may well mess up the macros in our style file), I groan, especially when they start `\def\alpha{`

`\def\b{\beta}` and so on. I have a script to remove macros from papers, and make some other changes, but authors are sometimes so ingenious in their abuse of  $\TeX$  that the script does not work correctly. Some journals simply retype all papers that are sent to them. This solution is as expensive as dealing with a traditional typescript. The other solution is to try to fix up the  $\TeX$  file — when the authors are competent, this is quite an easy task, but when they are not, it is more time-consuming than retyping *ab initio*. The mathematical community itself is to blame for this. In many universities, mathematics students are taught outmoded dialects of  $\TeX$  or  $\LaTeX$  by people who learnt them ten or twenty years ago, and who fail to teach the key structural ideas, such as environments.  $\TeX$  is a programming language and it should be taught and written as a programming language.

I would argue that, if the international mathematical community wants to make use of the savings that  $\TeX$  could offer, then journals should start charging, by the page, for papers that are written in poor-quality  $\TeX$ . There is very good free information about  $\TeX$  available online through sites such as the  $\TeX$  Users Group (as well as bad and incorrect information, often through the websites of individuals). If our bosses in Canberra are right, financial incentives are the most effective way to get people to do things properly. Surely the long-term health of mathematics relies at least in part on inexpensive journals, and getting the mathematical community to educate itself would be a good step in this direction. Does the IMU have an opinion?

The problem of the increasing cost of journal subscriptions is not just due to the costs of production. Increasingly, we are seeing journals which were produced inexpensively by mathematical societies being handed over to commercial publishers, and the prices rise severely. In part, this is because libraries like to subscribe to packages of journals, and journals published by small organisations see their subscriptions drop dramatically, to the point where they become uneconomic. Further, there may well be efficiencies of scale in merging publishing operations (the Australian Mathematical Society decided to publish its research journals through Cambridge University Press for just this reason). But the cost problem remains, and we are not even supposed to talk about it. A commercial publisher sued the American Mathematical Society some years ago because that Society published figures on journal costs that made it clear that the publisher in question was substantially more expensive than most other publishers. The editorial board of *Topology* resigned a few years ago in protest at the pricing policies of the publisher, and set up an alternative journal. What is the IMU doing to promote less expensive publishing?

## Conclusions

I confess that the Australian Mathematical Society's journals might be better managed, and the IMU's recommendations will be helpful in improving things. But I cannot help but feel that there are much more serious problems with journal production that the IMU is not tackling, and hope that this note will help provoke some action.