Geometry & Topology: A Community-Based Publishing Initiative

Colin Rourke

Morton's Fork was named after Cardinal Morton who was Lord Chancellor of England in the reign of King Henry VII. By visiting noblemen of the time, he would judge their tax for the coming year. If the hospitality he was given was economical, it was reasoned that his host was saving money and could afford a large gift to the King. If, on the contrary, the hospitality was sumptuous, he was evidently wealthy and could afford a large gift to the King. These arguments were the two prongs of the Fork.

Commercial publishers have gripped research mathematicians in a similar fork. On the one hand, whilst carrying out our research, we need—indeed demand—total access to the literature. If we want to consult a paper, we will do whatever we need to do to find it…in the old days, we would look in our filing cabinets, then colleagues' cabinets, then search libraries or telephone more distant colleagues. These days we are more likely to start at the arXiv or Google before resorting to hard-copy search. The methods may have altered, but the purpose has not. We need to check or use previous work and nothing will stop us until we find it in some form or other. This is the first prong of the fork. The other is that, once we have produced a piece of new research, we want everyone to see it. We don't hide it under a bushel; we want to give it away for all to see. We eagerly talk about it to colleagues and students, freely give lectures on it (in all gory detail if asked). We do the same for everyone else's research, including anonymous refereeing, editorial advising, and so on. This is the second prong of the fork.

These two prongs, (a) that we demand access to all other research and (b) that we offer our research and research-related services for free, have given our publishers a huge lever over us. We create a product (published research), give it away free, and then buy it back with a totally inelastic demand. Given the current financial ethos under which companies exist only to make money, incidentally providing a service, it is not at all surprising that we are now paying exorbitant fees for access to our research. The usual countervailing mechanism in capitalism—competition—is totally absent in this market because there is *no* competition between journals. Each publishes a different set of papers. *The Annals* (a well-run, academically-owned, moderately-priced journal) is not in competition with *Inventiones* (an exorbitantly overpriced Springer journal), although they are of similar standard in a similar subject, because they each carry a different set of papers which we all need to read. We need permanent access to *both* of them. The only journals to which we don't need access are the (very few) journals which publish only low-level papers.

This situation came home to me with full force about seventeen years ago when I was chair of the University of Warwick Mathematics Department. My research partner Brian Sanderson was Library Representative, and we faced the annual journal cutting exercise. We reasoned: Journals are produced by the community, largely using free labor; mathematicians even do their own

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typesetting using TEX; the cost of printing in small runs is dropping (it has now dropped to the same as large runs)—journals ought to be getting cheaper. Instead, they are rising in price far faster than inflation and causing a crisis leading to irreversible damage to libraries. It is interesting to note that a pledge to keep price inflation below 10 percent per annum was regarded as reasonable by the UK Competition Commission when considering the merger of Reed Elsevier and Harcourt in 2001.

Ulf Rehmann maintains a webpage listing relative prices for mathematics journals, http://www.mathematik.uni-bielefeld.de/~rehmann/BIB/AMS/Price_per_Page.html. Comparing like with like, the price ratio is about fifty to one between the lowest priced journals at approximately 15¢ per page and the highest at about $7.50 per page.

Brian and I decided to demonstrate that a high quality journal could be run well and be essentially free and this is why we started *Geometry & Topology*.

Initially the journal was conceived as an electronic journal. At the time electronic publishing was outside the mainstream and had a somewhat tacky image. So our first concern was to ensure real quality. We did this by recruiting as high a quality academic editorial board as we could. We were ably assisted in this by John Jones and Rob Kirby. Our editorial board can be seen on our site http://msp.warwick.ac.uk/gt/about/journal/editorial.html. It includes three Fields medallists and is one of the highest standard boards in pure mathematics. This was the first step.

The second step was to involve this board positively in all the decision making. We set up a strong, published procedure skewed towards rejection. While one editor can reject a paper, it takes three (a proposer and two seconders) to accept one; each of these has her/his name published on the title page of the paper, which militates against casual propositions/secondings.

The third step was to fix and publish a handling and refereeing procedure so that everything was clear and above board. All three steps made it very difficult for a weak paper to slip though the net.

The drive to quality paid off handsomely and *Geometry & Topology* is now one of the world's foremost specialist journals, publishing around 3,000 pages annually.

Initially the journal was produced entirely at Warwick. Brian and I programmed the procedure using perl scripts and we used the university print shop for hard copy. We started as a fully open-access journal and we covered incidental expenses by selling hard copy at a modest profit. We built on the success of *Geometry & Topology* to start a monograph series and a sister journal *Algebraic & Geometric Topology*. The obvious weakness of the arrangement was that it relied to a large extent on our own unpaid labor. Rob Kirby, recognizing that this model was unsustainable in the long run, started a nonprofit publishing company, Mathematical Sciences Publishers, based at Berkeley, to take over production. The story of MSP needs a separate article to do it justice. Here it is enough to say that MSP has properly paid staff and has given *Geometry & Topology* and our other ventures a permanent stable home. We are no longer fully open access because the economic climate has made this impossible but we are still extremely low-priced and intend to remain so.

In its own terms, *Geometry & Topology* has been an unparalleled success. The electronic versus nonelectronic dichotomy has vanished since we started and all journals are now produced as we have always done, with a primary electronic version published before the print version. However, in terms of changing the ethos of academic publication and reducing overall prices, it has been a dismal failure. There has been no change in the gloomy vice-like grip in which commercial publishers hold our libraries. The current move towards "open access" publishing has no value whatsoever unless the ownership of journals is changed at the same time. By shifting an exorbitant publication cost from library to author, nothing is changed. What is needed is concerted government action to buy back the rights to our, predominantly publicly funded, research from the commercial journals and pass ownership of the journals over to the academic community to run as we run *Geometry & Topology*. In this way the publication cost, however financed, will be reduced to a fair sustainable level. It will be expensive in the short term, but it will lead to a situation where we can all once again afford to consult our own research.