

My life as an editor - Bernd Pulverer



During the EASE conference in Bucharest I had an opportunity to interview Bernd Pulverer, Chief Editor of The EMBO Journal and Head of Scientific Publications at EMBO. We talked shortly after his plenary lecture and the session about innovations in journal publishing.

How did you become involved in editing in the first place?

After my undergraduate studies in Cambridge, and my PhD studies in London, I was doing a series of increasingly senior postdocs: I went to Canada for a short postdoc, then I had a longer one in the United States, followed by a position in Austria, where I come from. It turned out to be much less independent than I expected, so I was looking around for options. I didn't have a clue about what editors were really doing. Back then, in the 1990s, the concept of a professional scientific editor was not that well known really. I had looked at research positions in the pharmaceutical industry and faculty positions, when, by chance, I met two of my colleagues from London who had become *Nature* editors. When we talked about their job, I was fascinated. I was suddenly talking about fossils, evolution, genomics and many other things that I'd never thought about. After 20 years of studying a couple of proteins, suddenly thinking about fossils - this breadth of topics was breathtakingly exciting. *Nature* actually interviewed me on the spot, because in those days it was a much smaller operation than it is now. At the time, I was just trying this out, and here we are, twenty years later. I started at *Nature*, then I was Chief Editor at *Nature Cell Biology* for a number of years, and then I came to EMBO, because it allows me to be much nearer to the scientific community again. The EMBO is really dedicated to quality, and to support of the scientific community, so after many years with a commercial publisher this was a great opportunity to do a bottom-up approach to the things that, in my view, need to change in publishing.

You mentioned in your talk that the journals were set up to inform the public and to help the scientific community. How do you see the role of journals nowadays?

I think this is not true for all journals nowadays; it's a bit misleading to think that all journals have to inform the public. Much of science is very specialised and we certainly should not aim for every paper to be understandable to every person in the street. It would oversimplify the science in research papers. In fact, this could be futile, as some science cannot be communicated without much more background information, which requires a huge time investment. It is unclear if this would be valued by the public. So I think it is

perfectly reasonable to have highly specialised journals. At the same time, certain types of science are of general interest - we've had some examples of this today, like virology and astronomy - and some are of public relevance, like anything related to medicine. These things should certainly be brought to the public. This is why we still need the broad based journals - because when I say public, I mean also the scientific public. I think that researchers need to be exposed to different ideas from those they are currently working on. I work in molecular biology where people tend to read in their own discipline defined by their favourite molecules or processes, and some fields, like neuroscience, restrict this further by looking only at neuroscience-related papers. What's been happening recently is that there is this whole new generation of postdocs, who only find papers by keyword search, because there is just so much more information out there, much more than when I was doing my PhD. Typically, they filter for papers with their favourite keywords every week, and they only ever approach this, so suddenly this is not even about having a general overview of neuroscience, but solely about the role of Ras protein in neurons. You cannot make Nobel prize winning discoveries if you are only looking at your little niche, because you will only make incremental steps. I think we need to allow ourselves that broader knowledge within the scientific community, as much as we can. It's a bit of a losing battle, by the way, but I think that we have to try.

It's a losing battle just because of the volume?

Yes, people have less and less time to actually browse, because the volume and depth of knowledge in your own subject is so much bigger now that you spend the whole day just catching up in your own area. You have to become narrow, because the volume is so big. We need IT tools to help us browse and find. Our Source Data project (<https://sourcedata.embo.org/>), for data-directed search, is partially aimed at that, to give people search results orthogonal to the usual PubMed or Google keyword searches. That's one of the big challenges that we should face: to design the technology that helps us find the unexpected.

Journals and editors used to work mostly with text; and nowadays it seems that data and figures are gaining more and more importance. What we can do as journal editors, to do the same work on figures as we have always done on the text?

This is a good way to frame it - I think that figures are really the forgotten part of the papers. Text is important for a classical research paper, because it's a human-readable piece that helps to interpret, absorb and remember information. But beyond that, what really matters, is the data, not even the figures, because figures are just illustrative descriptions of the data. The way we display figures is still based on the old paper world - the cellulose world - where you were only able to display flattened images of the data. In a way, the figures are actually caricatures of the data. They are there to enhance the text, but they are not there to work with.

There is this whole forgotten layer of research papers which is the data, and I think that we need a whole new generation of editors, who specialise in data sharing. I would say we cannot just load this on to existing editors, because it is just not scalable. We need people with expertise in data curation, data analysis and statistics. You can't expect the referees to do this (even if they have the expertise), because they look at the paper at a different level: is this work robust, are the controls in the experiments properly done, and so on; but you can't expect a referee who has a few hours to look at the paper, to go through all the nitty-gritty details, to make sure that all the metadata is there as well.

With all these developments and changes, if you were to name one thing for which the journals are responsible, what would it be?

I think that journals are the last checkpoint in quality control of the scientific process. And at the moment there are no other formal checkpoints at all. One could say that this shouldn't be the role of journals, but it is currently required that journals check for basic quality and reproducibility of the work. This extends not just to scientific misconduct, I'm also saying that they need to assure that the information is there, so that the science is reproducible and open enough to work with. That's the gatekeeper role of journals.

In reality, their main role at the moment is to give people academic credit, to advance their careers. It's an important role, which makes us immensely powerful, because editors decide on people's futures, and that's why the journals still exist in very much the same form as years ago, I think. But that's a corrupted role, if you want, the real role should be the first one.

How do you think we can involve more early career researchers into editing? Most of the time they don't even know that such a world exists...

Like I did. That's true. Editing is an interesting world that is often misunderstood, not just by young people but also by senior people. There is a lot of perceived negativity about editors, because the system is so overstressed, and often the blame is directed towards those who are seen as the key bottleneck in the system. I think that this job is highly specialised, and it has to be professional. It can of course be done by active academics as a side job, but it takes a lot of time to do it thoroughly and fairly, and researchers don't usually have that time. And besides the time issue, there is always the question of independence, or biases. Actual scientists are always conflicted in one way or another; in principle the beauty of professional scientific editors is that they are outside the direct competition.

They don't need the paper in Science.

Yes, they don't need their own paper in *Science*, exactly, and that's why it's actually a great layer to have: to have the system of expert referees and professional editors, because they can balance each other out. And this has not been appreciated, even by the senior people, and it would be great to communicate that to the younger people. There was this great conversation that we've just had to start some editorial work even at the undergraduate level: to maybe have a university journal where students can play the role of the editors, as a part of a course. Students could publish each other's projects, as papers, and do the peer reviewing and the editing of the text.

Anna Sawicka