In the last editorial (‘plus ça change’—[1]), we briefly looked at some of the major changes in scholarly communication, and how some things hadn’t changed at all. This lack of change has frustrated all of those progressives who feel we’ve not even begun to take advantage of all the opportunities offered. It’s easy to sympathise, when you think of all the things we can now do with electronic systems.

I hinted then that I might take a closer look at the scholarly or scientific paper itself. Why has it changed so little? My perspective is not that of a scientist, but that of a publisher and researcher who has spent a professional lifetime dealing with papers, and even reading some of them . . . Over the last few years I’ve had occasion to read over 300 new research papers with a view to looking at their English, and sometimes their structure, and, if anything, it’s reinforced my views.

First, an anecdote. I well remember a time, more than 20 years ago, when we were pioneering electronic journals, as they were called (electronic versions of journals, really). We were quite excited about introducing a video clip in a paper—what a performance it was (not the clip, just getting it in the system so it could be viewed!). As I recall, it was a short sequence of a flame developing—an excellent illustration of what the paper was describing in mathematical terms. It was one of the very first uses of video in a conventional scientific journal. Of course such things are commonplace now.

But so much more is now possible. Why hasn’t the multi-dimensional, multi-media, even multi-contributor (i.e., in addition to the original author) ‘living’ paper taken over? I think there are two main reasons, which I’ll get to in a minute. First a short, but I hope relevant digression.

Researchers have perhaps three main roles in scholarly communication: as authors, as referees/reviewers, and as readers. Perhaps these are not as clearly demarcated as they once were, but they are still there. They do not act in the same way in each role. They have quite different priorities in each role. As readers they are mainly seekers of information looking for those things that will help them in their research (and by extension, in their role as authors). Historically, librarians’ contact with the researcher has been mainly in that seeking role—quite rightly. This does colour how they have seen the literature. We know readers will look at the literature and individual papers in all kinds of ways. Having found a paper, they may just scan the abstract, the figures, the equations, the formulae, the references, or any combination. This leads to calls for ‘deconstructing’ the papers into their constituent parts, since this, it may be argued, is what the researchers really need. Fair enough, as long as this is not pursued to extremes such that the original complete paper is lost, since that neglects the researcher as author, as well as the dedicated reader (who might just want to read the whole thing).

So why have papers fundamentally changed so little? Of my two main reasons, I believe the first may well disappear or be less persuasive over time, but the other will not. Here goes:

1. Crudely put, most original research papers are no big deal. If we were into philosophy of science, we might well regard most of them as ‘just’ contributing to ‘normal science’ in Kuhn’s phrase—another little brick in the wall, of little consequence. It has long been an adage amongst scientists that ‘80% of the published literature is rubbish (the actual percentage quoted may vary)—the problem is nobody knows which 80%’. This is telling because it shows two views simultaneously—one that indeed a lot of the research literature adds very little—may even be
wrong; and secondly, that sometimes only the passage of time can establish the value of a piece of work (something often ignored by those who want or make measures of instant evaluation). So let’s accept that adage—what is then the point of investing a lot more resource—money and time, for both author and publisher, in making each insignificant paper more sophisticated, multi-dimensional? It will seem like such a waste.

However, even if this is the case now, it can change. More and more systems are being put in place, such as accessible data repositories and standardized linking, as well as sophisticated apps for expanding or graphing equations, re-scaling them, etc. Thus it will become ever easier for a researcher to regard these embellishments not as such but just as standard parts of the paper they write. Quite soon it could seem the exception if for example, at least in some fields, a paper does not provide instant access to the underlying data.

2. The second point may be obvious, but it is nevertheless fundamental and longer lasting. The current structure of a paper is there for a reason. It supports the view that a paper presents a logical argument, and also that, even if there are diversions on the way, this is best done via a linear progression. Thus, in one way or another, all papers proceed thus: what is the problem/issue, what has been done about it in the past, what is there for the authors to do, what have they done, how did they do it, what results did they get, and what do they mean? Even when this is a rationalization of how the research occurred—research which may in fact have had hiccups along the way and even changes of direction, this is the way we want to tell it because this is the best way or presenting what it means. It’s almost like a story, but the researcher’s story, usually presented in as impersonal way as possible, but a story nevertheless. And, we like our stories to have beginnings, middles and ends—with sometimes, a little taster on what may be coming next.

That logical sequence must, whatever bells and whistles there may be, shine through. The research community knows this, and will stick, I’m convinced, to that fundamental format.

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