



Thirty years of *Carbohydrate Polymers*—Meeting the challenge of safeguarding journal quality

Carbohydrate Polymers has reached the age of thirty. The first volume which appeared in September 1981 contained 18 papers. In 2011 we will publish around 900 papers. How the baby has grown! Over that thirty-year period so many things have changed. In that first issue all the papers published were from Europe (including the former Soviet Union), Japan and North America. In 2011 only about 40% of our published papers will be from these countries. In 1981 the World Wide Web did not exist and word processing was in its early stages. Journal publishers made their money from selling subscriptions to paper copies. We will soon be entering an age when paper copies will not be printed; everything will be downloaded from the Web.

One thing that has not changed is the requirement to ensure we publish science of high quality. In an excellent editorial in Elsevier's *International Dairy Journal* (Jelen et al., 2009) the editors highlighted some of the concerns resulting from the expansion in the scientific literature. The two trends that we are most concerned about are self plagiarism and what was described by Jelen et al. as “salami slicing”. Both of these are partly a consequence of the pressure on authors to publish as many papers as possible.

1. Self plagiarism

Self plagiarism is the publication of text or research that has been previously published by the authors. There are different types of self plagiarism which can be illustrated by three cases that the editors of *Carbohydrate Polymers* have faced over the last year.

1.1. Case 1

Here it was brought to our attention that the authors have published the identical paper twice. This is the most serious type of self plagiarism. Authors when submitting manuscripts to *Carbohydrate Polymers* have to affirm that the work has not been published previously.

The authors breached this undertaking. On the advice of the *Carbohydrate Polymers* editors, Elsevier formally withdrew the *Carbohydrate Polymers* paper. It will not now be accessible though any of the main data bases.

Carbohydrate Polymers gives some leeway to including published data from conference proceedings in a subsequent paper, since one of the primary purposes of scientific meetings is to update the scientific community on the latest developments in the field,

but only a limited proportion of a conference proceedings paper should be repeated.

1.2. Case 2

A diligent reviewer pointed out similarities between two papers. Even though there was not a very high degree of matches using the text comparison software iThenticate, it was clear that the authors had published the same physical and chemical characterisation on repeated preparations of what should have been identical material. What was different was the measurement of bioactivity. There was no cross referencing between the two papers. This is almost as serious as Case 1. Since the two papers were submitted at similar times, what the authors should have done is to combine the results into one paper. There can be merit in repeating a characterisation of material which should be very similar to one described previously. For example the second material could be extracted from a different raw material. The previous work can be alluded to in a couple of sentences and differences discussed and if necessary presented. E.g. “pectin was extracted from apples and the degree of esterification (DE) and molecular size determined as described previously (Smith et al., 2008). It was found that the DE and molecular size of the material used in the current work were 64% and 1.7×10^5 Da. These values were lower than obtained with our previous preparation (69% and 2.1×10^5 Da) which was provisionally attributed to differences in the age of the fruit.”

In this case the papers were at the review stage and could be rejected. The authors were reprimanded by letter for their unethical conduct.

1.3. Case 3

It was brought to our attention that there was a very high degree of text matches between two papers. When these were investigated it was found that they came in the Materials and Methods and Results sections. The results were different in the two papers since they dealt with different materials the similarities came from using a template in which different numerical values and names of materials were then inserted. This is slightly less serious than Cases 1 and 2 since the authors were not publishing the results of the same piece of work twice, just including an unnecessary repetition of the methods. However as Jelen et al. say “there is no excuse for copying previously published text even it concerns methodology

used repeatedly.” This can be handled in a couple of sentences as illustrated above.

2. Salami slicing

This can be defined as getting the maximum number of publications from a single piece of work. Often it includes self plagiarism because by repeating previous material a paper can appear to a reviewer as more substantial than it actually is. It is important to appreciate that the majority of the best papers are structured in such a way that a hypothesis is tested or a question answered. Young (and old) researchers should ask themselves the question – *Why are we doing the work?* The first answer should not be “so we can publish a short paper.” For example there are infinite number of new materials that can be prepared by graft modification of polysaccharides but just to produce a new material without any thought of its potential utility or how the work can answer a scientific question is of little value. Increasingly papers of this type will not be sent out for review. A related problem is the use of techniques that add nothing to the question that is being asked or the hypothesis being tested. We suspect that this may be due in some cases to the purchase of expensive physical techniques that it is considered must be used. The data obtained is often irrelevant to the story and therefore clouds rather than enhances the paper. Of course it does make the salami slice seem bigger to the reviewer!

We live in difficult times and appreciate the pressures on researchers to publish. The concern that many of us have is that this results in quantity, not quality. In the UK the national evaluation of the quality of a researcher is partly based on what the researcher considers his/her best four papers submitted over a seven-year period. The total number of publications is not a consideration.

Journal editors are charged with being guardians of scientific quality, but for a successful journal like *Carbohydrate Polymers* which since its inception 30 years ago has been facing an ever-increasing number of submissions, this is not easy. We are heavily reliant on our reviewers to whom we are eternally grateful.

Because of their abundance, sustainability, biodegradability and range of functional activities, carbohydrate polymers are amongst the most important materials on our threatened planet. As well as journal editors; authors, publishers and research managers have a responsibility to ensure that the research literature on these materials is of high quality and not clogged up with plagiarised slices of salami.

Reference

Jelen, P., Dejmek, P., Everett, D., Kelly, A., Roupas, P., Smith, D., et al. (2009). IDJ shares concerns about plagiarism in scientific publications. *International Dairy Journal*, 19, 1–2.

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