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From the Editors' Desks

Publications Committee: comings...

We are delighted that after several years of contributing material to *ESE* Marcin Kozak has agreed to join the Publications Committee. You can read about Marcin in his profile on page 64.

... and goings

After serving on the publications committee for a three year term, Colin Batchelor has decided that it is time for him to step down. We thank Colin for his valued input throughout 2006 to 2009 and wish him well in his future endeavors.

Launch of a new section

In this issue we launch a new section, Essays in Editing, to bridge the gap between Original Articles and Viewpoints. We welcome submission on topics related to science editing and writing – for example, ethical issues, historical commentary. Essays should be informal in style and may include opinions, discussion, humour, to provoke thought and debate. James Hartley kicks it off on p41.

Refocusing an existing section

After six or seven years the Editors' Webwatch seemed to need a formatting makeover – so we have replaced it with This Site I Like (p 53). It will focus on one site per issue, or on two or three sites covering the same topic. We welcome your

contributions to this column, so if you have a favorite website for calculating geometric means (for example), please do let us know where to find it, and of course, why you like it.

Yahoo group abandoned

You may have received an invitation from easesecretary@yahoogroups.co.uk to join the EASEassociation Yahoo group. The idea was to have a simple means of disseminating information to the membership quickly, but not to duplicate the Forum. Although the invitation was sent to all members with an email address, only about 25% signed up (the invitation email may well have gone into junk mail boxes – another problem in itself) so the Yahoo group is being abandoned. The Secretary has a way of emailing everyone quickly that doesn't involve any complications for members, so watch out for the next email alert!

Bookshelf photos still needed

Although we can't publish them in colour, we would love to see photos of your bookshelves in the Editor's Bookshelf section. Please email them to mcooter@bmj.com.

Contributions for next issue

The copy date for the August issue is 15 June. Please send contributions to the appropriate member of the publications committee (see the list on the left) by then.

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Editorial

Walking the ethereal line – one spirit’s musings on ghostwriting

Wafting out of the netherworld of working as a medical writer (aka ghostwriter) in the pharmaceutical industry, and now in the academic community, I thought that it was time to pontificate upon the “bad thing” called ghostwriting, to add to the already burgeoning discussion about what constitutes ghostwriting and what does not, and try to reach a conclusion about when it is acceptable, if ever at all.

Those who argue most vociferously against ghostwriting maintain that it may lead to bias, especially in the medical literature, where publication of results of, for example, clinical trial data can influence prescribing practices and thus impact on the real lives of real patients. Let’s take an example – an antibiotic X made by Pharma A has just been through a non-inferiority trial (the value of such trials is debatable in the first place) and was shown to be ever so slightly inferior to the standard-of-care drug Y made by competitor B. The results of the trial must be published, as there is an ethical obligation to do this, but Pharma A is aware that to do so could have a negative impact on (ie, reduce) sales of drug X.

As all of the clinicians who performed the trial are “very busy people” (usually designing new clinical trials for a new – or even the same – drug), a medical communication agency is hired, and a medical writer is tasked with the unenviable job of making drug X look better than standard-of-care drug Y, but without actually lying or falsifying the data. At some point this medical writer, who is now spending his or her days massaging data and analyzing every adjective in the manuscript, is, if he or she has any conscience at all, waking up in a cold sweat in the early hours of each and every morning. The fact that anonymity is guaranteed (because he or she will not be mentioned by name or trade, even at the very end of the acknowledgements section) does not ameliorate this primeval guilt reflex.

Such manuscripts are usually aimed at high impact journals, but are invariably rejected with scathing reviews because journal editors (despite popular opinion) are not fools and usually know that even if not acknowledged a medical writer has been involved in this work of pseudo-fiction (usually because the medical communications agency has submitted the manuscript “on the authors’ behalf as we are assisting them with their administration”). Following rejection, these manuscripts are reformatted and submitted to journals of progressively lower and lower impact factor until they reach the level they truly deserve. Clearly, in this situation the medical writer is little more

that a literary marketer, and the process of ghostwriting is obviously wrong.

Let’s now look at a difference scenario, one of a team of busy research scientists, 70% of whom have English as a second language, all pushing back the frontiers of research medicine. More often than not these people are simply too busy and too motivated by discovering new answers to new (and old) questions, so they would rather move swiftly on to the next big experimental question and get back to their labcoats and racks of Eppendorfs. However, in these days of publish or perish, not to write up research as it develops is professional suicide. Such groups of scientists often employ a professional writer, but instead of being a separate entity, as in the first example, this person is part of the research team, and although he or she does not actively work in the laboratory – rather, being closeted in an office across the corridor – he or she contributes significantly to the intellectual activity of the team.

A medical (or scientific) writer in this instance will make a substantial intellectual contribution to any article published. However, it is the authors who dictate the framework, interpret the data, and select which datasets to present, and who take ultimate responsibility for the conclusions derived – a far more ethical situation, I believe. In this case, would the writer merit authorship? I maintain not, but a place in the acknowledgements section would be most welcome. In this case, we are not talking about ghostwriting proper, but – and this is how I like to see it – as facilitating dissemination of research progress.

The bottom line is that medical researchers and scientists are too busy to write up their own work, or they simply don’t want to do the writing. However, the results of the research belong to them in an intellectual sense: they planted the ideas, watered and nurture their hypothesis, and breathed life into the results. The final step – packaging it nicely and sharing with the world – sometimes requires some ethereal intervention. But the bottom line is that no matter who does the telling, the truth (nothing but, and the whole) must prevail. And therein lies the grey zone.

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Articles

What's in a picture? The temptation of image manipulation

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Reprinted with permission from *Journal of Cell Biology* 2004;166:11-15

It's all so easy with Photoshop. (The general principles presented here apply to the manipulation of images using any powerful image-processing software; however, because of the popularity of Photoshop®, we refer to several specific functions in this application.) In the days before imaging software became so widely available, making adjustments to image data in the darkroom required considerable effort and/or expertise. It is now very simple, and thus tempting, to adjust or modify digital image files. Many such manipulations, however, constitute inappropriate changes to your original data, and making such changes can be classified as scientific misconduct. Skilled editorial staff can spot such manipulations by using features in the imaging software, so manipulation is also a risky proposition.

Good science requires reliable data. Consequently, to protect the integrity of research, the scientific community takes strong action against perceived scientific misconduct. In the current definition provided by the US government: "Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results." For example, showing a figure in which part of the image was either selectively altered or reconstructed to show something that did not exist originally (such as adding or modifying a band in a polyacrylamide gel image) can represent falsification or fabrication.

Being accused of misconduct initiates a painful process that can disrupt one's research and career. To avoid such a situation, it is important to understand where the ethical lines are drawn between acceptable and unacceptable image adjustment.

Here we present some general guidelines for the proper handling of digital image data and provide some specific examples to illustrate pitfalls and inappropriate practices. There are different degrees of severity of a manipulation, depending on whether the alteration deliberately changes the interpretation of the data. That is, creating a result is worse than making weak data look better. Nevertheless, any manipulation that violates these guidelines is a misrepresentation of the original data and is a form of misconduct. All of the examples we show here have been created by us, using Photoshop; although they may appear bizarre, it is remarkable that they are actually based on real cases of digital manipulation discovered by a careful

examination of digital images in a sample of papers submitted (or even accepted) for publication in a journal.

Why is it wrong to "touch up" images?

If you misrepresent your data, you are deceiving your colleagues, who expect and assume basic scientific honesty—that is, that each image you present is an accurate representation of what you actually observed. In addition, an image usually carries information beyond the specific point that is being made. The quality of an image has implications about the care with which it was obtained, and a frequent assumption (though not necessarily true) is that in order to obtain a presentation-quality image, you had to carefully repeat an experiment multiple times.

Manipulating images to make figures more simple and more convincing may also deprive you and your colleagues of seeing other information that is often hidden in a picture or other primary data. Well-known examples include evidence of low quantities of other molecules, variations in the pattern of localization, and interactions or cooperativity.

Journal guidelines

It is surprising that many journals say little or nothing in their Instructions to Authors about which types of digital manipulations are acceptable and which are not. The following journals provide some guidelines, but they vary widely in comprehensiveness.

Molecular and Cellular Biology

"Since the contents of computer-generated images can be manipulated for better clarity, the Publications Board at its May 1992 meeting decreed that a description of the software/hardware used should be put in the figure legend(s)."

Journal of Cell Science

"Image enhancement with computer software is acceptable practice, but there is a danger that it can result in the presentation of quite unrepresentative data as well as in the loss of real and meaningful signals. During manipulation of images, a positive relationship between the original data and the resulting electronic image must be maintained. If a figure has been subjected to significant electronic manipulation, the specific nature of the enhancements must be noted in the legend or in the Materials and Methods."

Journal of Cell Biology

“No specific feature within an image may be enhanced, obscured, moved, removed, or introduced. The grouping of images from different parts of the same gel, or from different gels, fields, or exposures must be made explicit by the arrangement of the figure (eg, using dividing lines) and in the text of the figure legend. Adjustments of brightness, contrast, or color balance are acceptable if they are applied to the whole image and as long as they do not obscure or eliminate any information present in the original. Nonlinear adjustments (eg, changes to gamma settings) must be disclosed in the figure legend.”

Because the last set of guidelines is by far the most comprehensive we have found to date (full disclosure: we wrote them), we will continually refer back to them in the following discussions of the use and misuse of digital manipulations.

Blots and gels

Gross misrepresentation

The simplest examples of inappropriate manipulation are shown in Figure 1. Deleting a band from a blot, even if you believe it to be an irrelevant background band, is a misrepresentation of your data (Figure 1A). Similarly, adding a band to a blot, even if you are only covering the fact that you loaded the wrong sample, and you know for sure that such a protein or DNA fragment or RNA is present in your sample, is a misrepresentation of your data. In the example shown in Figure 1B, the additional band in lane 3 has been generated by simply duplicating the band in lane 2.

Another example of using Photoshop inappropriately to create data is illustrated in Figure 2, in which a whole single panel has been replicated (arrows) and presented as the loading controls for two separate experiments.

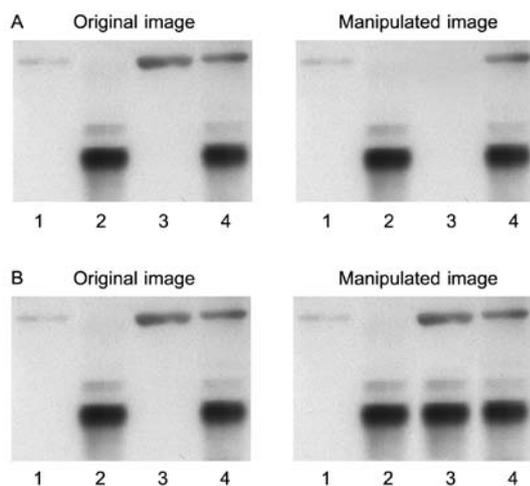


Figure 1 Gross manipulation of blots. (A) Example of a band deleted from the original data (lane 3); (B) example of a band added to the original data (lane 3)

Subtle manipulations

Brightness/Contrast adjustments. Adjusting the intensity of a single band in a blot constitutes a violation of the widely accepted guideline that “No specific feature within an image may be enhanced, obscured, moved, removed, or introduced.” In the manipulated image in Figure 3A, the arrow indicates a single band whose intensity was reduced to produce an impression of more regular fractionation. Although this manipulation may not alter the overall interpretation of the data, it still constitutes misconduct.

While it is acceptable practice to adjust the overall

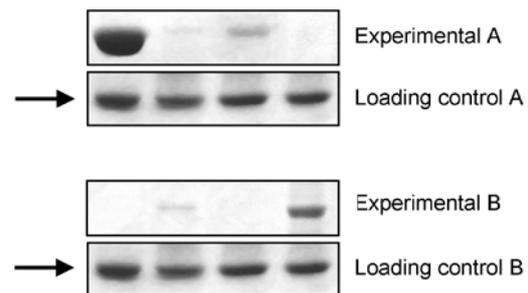


Figure 2 Gross manipulation of blots. Example of a duplicated panel (arrows)

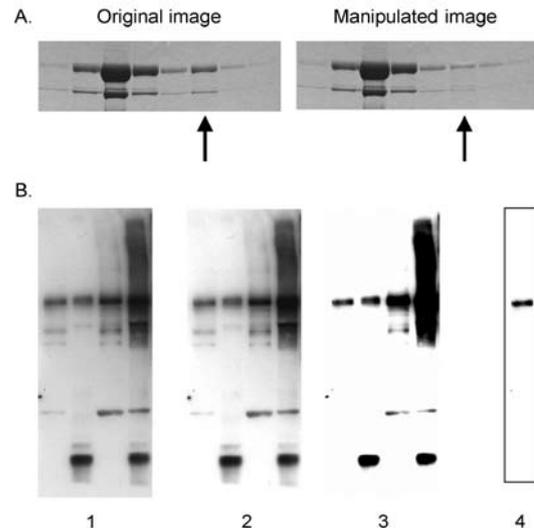


Figure 3 Manipulation of blots: brightness and contrast adjustments. (A) Adjusting the intensity of a single band (arrow); (B) adjustments of contrast. Images 1, 2, and 3 show sequentially more severe adjustments of contrast. Although the adjustment from 1 to 2 is acceptable because it does not obscure any of the bands, the adjustment from 2 to 3 is unacceptable because several bands are eliminated. Cutting out a strip of a blot with the contrast adjusted provides the false impression of a very clean result (image 4 was derived from a heavily adjusted version of the left lane of image 1). For a more detailed discussion of “gel slicing and dicing,” see *Nature Cell Biology* editorial²

brightness and contrast of a whole image, such adjustments should “not obscure or eliminate any information present in the original” (Figure 3B). When you scan a blot, no matter how strong the bands, there will invariably be some gray background. While it is technically within the guidelines to adjust the brightness and contrast of a whole image, if you overadjust the contrast so that the background completely drops out (Figure 3B, part 2 vs part 3), this should raise suspicions among reviewers and editors that other information (especially faint bands) may have dropped out as well.

It may be argued that this guideline is stricter than in the days before Photoshop, when multiple exposures could be used to perfect the presentation of the data. Perhaps it is, but this is just one of the advantages of the digital age to the reviewer and editor, who can now spot these manipulations when in the past an author would have taken the time to do another exposure. Think about this when you are doing the experiment and perform multiple exposures to get the bands at the density you want, without having to overadjust digitally the brightness and contrast of the scanned image.

Cleaning Up Background. It is very tempting to use the tool variously known as Rubber Stamp or Clone Stamp in Photoshop to clean up unwanted background in an image (Figure 4). Don't do it. This kind of manipulation can usually be detected by someone looking carefully at the image file because it leaves telltale signs. Moreover, what may seem to be a background band or contamination may actually be real and biologically important and could be recognized as such by another scientist.

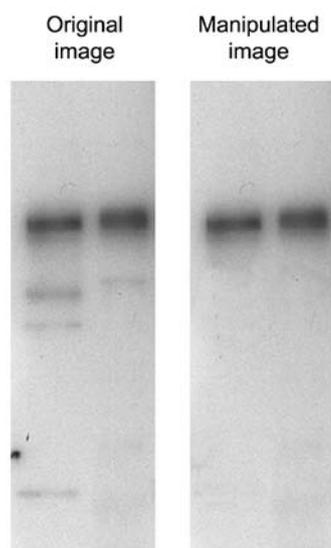


Figure 4 Manipulation of blots: cleaning up background. The Photoshop “Rubber Stamp” tool has been used in the manipulated image to clean up the background in the original data. Close inspection of the image reveals a repeating pattern in the left lane of the manipulated image, indicating that such a tool has been used

Splicing Lanes Together. It is clearly inappropriate manipulation to take a band from one part of a gel and move it to another part, even if you do not change its size. But it is within usual guidelines to remove a complete lane from a gel and splice the remaining lanes together. This alteration should be clearly indicated, however, by leaving a thin white or black line between the gel pieces that have been juxtaposed. Again, it could be argued that this guideline is stricter than in the days before Photoshop, when paper photographs of a gel were cut up and pieces were glued next to each other. This practice, however, usually left a black line indicating to the reader what had been done.

As it was with gel photographs, it is unacceptable to juxtapose pieces from different gels to compare the levels of proteins or nucleic acids. Rerun all of the samples on the same gel!

Micrographs

Enhancing a specific feature

An example of manipulation by enhancement is shown in Figure 5, in which the intensity of the gold particles has been enhanced by manually filling them in with black color using Photoshop. This type of manipulation misrepresents your original data and is thus misconduct. There are acceptable ways to highlight a feature such as gold particles, which include arrows or pseudocoloring. If pseudocoloring is done with the Colorize function of Photoshop, it does not alter the brightness of individual pixels, but pseudocoloring should always be disclosed in the figure legend.

Other examples of misconduct include adjusting the brightness of only a specific part of an image or erasing spots. Using the Brightness adjustment in Photoshop is considered to be a linear alteration (see below), which must be made to the entire image.

Linear vs nonlinear adjustments

Linear adjustments, such as those for Brightness or Contrast in Photoshop, are those in which the same change is made to each pixel according to a linear function. It is acceptable (within limits noted above) to apply linear adjustments to

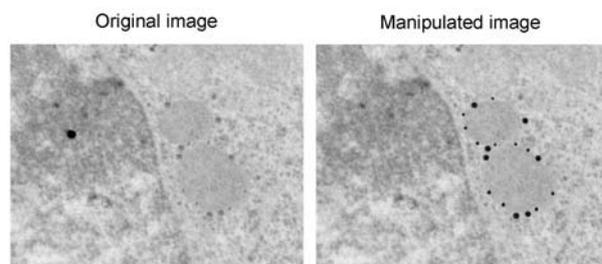


Figure 5 Misrepresentation of immunogold data. The gold particles, which were actually present in the original (left), have been enhanced in the manipulated image (right). Note also that the background dot in the original data has been removed in the manipulated image

a whole image. There are other adjustments in Photoshop that can be applied to a whole image, but the same change is not made to each pixel. For example, adjustments of gamma output (Color Settings in Photoshop) alter the intensity of each pixel according to a nonlinear function. Adjustments of Curves or Levels in Photoshop alter the tonal range and color balance of an image by adjusting the brightness of only those pixels at particular intensities and colors. Such nonlinear changes are sometimes required to reveal important features of an image; however, the fact that they have been used should be disclosed in the figure legend.

Digitally altering brightness or contrast levels can be misleading with fluorescence micrographs. Some authors mistakenly change the contrast of an experimental compared with a control photo, or change individual panels in a time course, or use different contrast levels when making merged images compared with the original images. All of these changes in individual pictures used for comparisons can be misrepresentations. On the other hand, certain adjustments such as background subtraction or using a filter or digital mask may be needed to extract information accurately from complex images. Reporting the details and logic of such manipulations that are applied to images as a whole should resolve concerns about their use. Standards and guidelines in the field will continue to evolve, but full disclosure will always be the safest course.

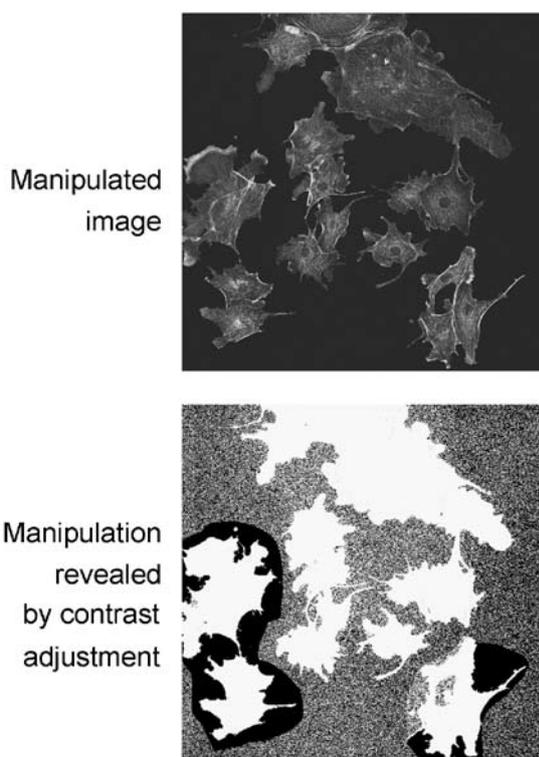


Figure 6 Misrepresentation of image data. Cells from various fields have been juxtaposed in a single image, giving the impression that they were present in the same microscope field. A manipulated panel is shown at the top. The same panel, with the contrast adjusted by us to reveal the manipulation, is shown at the bottom

Misrepresentation of a microscope field

The reader assumes that a single micrograph presented in a figure represents a single microscope field. Combining images from separate microscope fields into a single micrograph constitutes a misrepresentation of your original data. In the manipulated image in Figure 6 (top panel), cells have been combined from several microscope fields into a single micrograph. This manipulation becomes visible when the contrast of the image is adjusted so that the inserted images become visible (bottom panel). You may want to combine images from several fields into a single micrograph to save space, but this assembly should be clearly indicated by thin lines between the different pieces.

Resolution

A pixel is a square (or dot) of uniform color in an image. The size of a pixel can vary, and the resolution of an image is the number of pixels per unit area. Although resolution is defined by area, it is often described using a linear measurement—dots per inch (dpi). Thus, 300 dpi indicates a resolution of 300 pixels per inch by 300 pixels per inch, which equals 90,000 pixels per square inch (see reference 1).

High-resolution digital cameras (in 2004) can acquire an image that is 6 megapixels in size. This can generate an image of approximately 2400 x 2400 pixels, or 8 inches x 8 inches at 300 dpi. Note that, with the right settings in Photoshop, physical size and resolution can be traded off against each other without a gain or loss in the amount of information—that is, you can resize an image without altering the total number of pixels.

You should be aware of the resolution at which the image was acquired by the digital camera on your microscope. When that file is opened in Photoshop, you have the option of setting the size and resolution of the image. You should not set the total number of pixels to be greater than that in the original image; otherwise, the computer must create data for you that were not present in the original, and the resulting image is a misrepresentation of the original data—that is, the dpi of an image can only be increased if the size of the image is reduced proportionately.

It is acceptable to reduce the number of pixels in an image, which may be necessary if you have a large image at high resolution and want to create a small figure out of it. Reducing the resolution of an image is done in Photoshop by sampling the pixels in an area and creating a new pixel that is an average of the color and brightness of the sampled ones. Although this does alter your original data, you are not creating something that was not there in the first place; you are presenting an average.

Other data-management issues

It is crucially important to keep your original digital or analog data exactly as they were acquired and to record your instrument settings. This primary rule of good scientific practice will allow you or others to return to your original data to see whether any information was lost by the adjustments made to the images. In fact, some journal reviewers or editors request access to such primary data to ensure accuracy.

There are other important issues concerning data handling that we have not addressed by focusing on manipulations of existing data. Examples include selective acquisition of data by adjusting the settings on your microscope or imager, selecting and reporting a very unusual result as being representative of the data, or hiding negative results that may contradict your conclusions. Any type of misrepresentation of experimental data undermines scientific research and should be avoided.

Conclusion

Data must be reported directly, not through a filter based on what you think they “should” illustrate to your audience. For every adjustment that you make to a digital image, it is important to ask yourself, “Is the image that results from this adjustment still an accurate representation of the original data?” If the answer to this question is “no,” your actions may be construed as misconduct.

Some adjustments are currently considered to be acceptable (such as pseudocoloring or changes to gamma settings) but should be disclosed to your audience. You should, however, always be able to justify these adjustments as necessary to reveal a feature already present in the original data.

We hope that by listing guidelines and publicizing examples of transgressions, all of us can become more vigilant, particularly in guiding junior colleagues and students away from the tempting dangers of digital manipulation. Just because the tools exist to clean up sloppy work digitally, that is no excuse to do sloppy work.

If you would have redone an experiment to generate a presentation-quality image in the days before the digital age, you should probably redo it now.

Since this article was published in 2004, Mike Rossner has published other articles on this topic:

A false sense of security. *Journal of Cell Biology* 2008;183:573–574;

Hwang case review committee misses the mark. *Journal of Cell Biology* 2007;176:131–132;

How to guard against image fraud? *Scientist* 2006;(March):24–25.

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1. Rossner M, O'Donnell R. The JCB will let your data shine in RGB. *Journal of Cell Biology* 2004;164:11.
2. Gel slicing and dicing: a recipe for disaster. *Nature Cell Biology* 2004;6:275.

Commentary: Imagipulate or perish?

Tufte writes, “Graphical excellence begins with telling the truth about the data.”¹

True. Any scientific picture should show truth, whether one likes this truth or not, whether it confirms what one believes (or strives for) or not. Readers assume they see truth, especially when this is science. So, scientists are even more responsible for telling true stories, and believed to tell fairy tales to their children only.

We all know this border is sometimes – and let's hope not often – crossed. This can be done through various techniques, pictures being one. “Standards of quality may slip when it comes to visual displays; imprecise and undocumented work that would be unacceptable for words or tables of data too often shows up in graphics,” says Tufte.² This refers to quantitative information, but equally to images, which we are discussing today.

Following Huff's equation for statistical manipulation³:
 statistics x manipulation = statisticulation

we can derive a similar equation for our context:

image x manipulation = imagipulation.

(You can do the same to get picturipulation.) Imagipulate thus means to manipulate with images. Cosmetic changes to images have become as easy as falling of a log. Just run Photoshop and do whatever is needed to “enhance” the image. A piece of cake, isn't it? Imagipulate or perish, then?

Well, hold on; it doesn't work that way. If such an “enhancer” knows he or she can do it, how come others shouldn't know the very same? If others do, should one assume that journal editors don't? If you think so, don't try the *Journal of Cell Biology* – they do know.

Mike Rossner and Kenneth Yamada explain how such misconduct can originate, but also how easily it can be found out after some examination by a skillful eye.⁴ So their paper is not a hitchhiker's guide to imagipulation; it's the voice of efficient detectives, who say “We know.” After reading this paper I thought that after it had been published the number of papers they had to reject based on imagipulation dropped off, but nothing could be less true – it seems that neither the paper itself nor screening for imagipulation by the journals has helped.⁵ But journals have learned that it is a problem, and increasingly screen their papers for image manipulation, or at least are aware of it.^{5,6}

Graphical misconduct was not developed with the extensive use of computer software, though. Huff, in his well-known book on lying with statistics, discussed how graphing quantitative data can falsify the data in order to make them more conclusive.³ Interesting insights about the same subject matter were presented by Tufte; but to his criticism Tufte adds, “Perhaps graphics that border on cartoons should be exempt from the principle. We certainly would not want to forgo the 4,340 pound chicken” – which is followed by the picture with not only a huge chicken, but also a nice huge potato, great fish, and many other sizeable items.¹ This should rather be treated as the exception that proves the rule, the exception outside of the science arena, though.

Yes, data and images can be inconclusive. When by no stretch of imagination won't one find in them what one would be happy to, then there are three main paths to follow. First, one can accept that result (maybe it's right?). Second, one

can repeat the experiment (once or over and over), and who knows, maybe the “precious” result will appear (probability is with us! – even little probable events occur, unless they are really impossible). Third, instead of risking this costly repetition, one can use the “enhancing” tools to “facilitate” seeing from the image what “should” be seen there and what doesn’t want to be found there, despite all hopes and needs. Sometimes the temptation to so doing may be great, as Rossner and Yamada point out in their article.⁴ I see two main reasons for this temptation: the perishing goes first, followed by the glory.

Rossner and Yamada say, “Data must be reported directly, not through a filter based on what you think they ‘should’

illustrate to your audience.”⁴ Science without truth is no science at all. An image that shows untruth is no science at all. A scientist who tries to misconduct is no scientist at all. So, the choice is not between imagipulating and perishing. Sooner or later, if one imagipulates, one will perish.

Marcin Kozak

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Dear colleague:

We have the pleasure to inform you that the **11th Latin American ESP Colloquium** and **1st Latin American LSP Colloquium** will be held at the University of the The Andes (Mérida, Venezuela) from November 9th to 13th, 2009.

We look forward to your participation.
Our best regards.

Françoise Salager-Meyer
José Villalobos

Colloquium coordinators

For more information, visit: <http://eventos.saber.ula.ve/coloquiolfe2009>

Essays in Editing

How should we punctuate lists?

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Different people suggest different methods for punctuating lists in academic text. In this paper I outline six different variations and discuss experts' preferences.

In my book on academic writing¹ I suggest, following Joshi,² that there are three possibilities for the typographic settings of lists: bullet points for items without any particular order; numbers for steps in a sequence; letters for mutually exclusive items.

I argue that it is best to use *bullets* when each point has an equal value, *numbers* when there is a definite order, and *letters* for mutually exclusive items. But nothing more is said about the punctuation of such lists.

In a review of my book, Badley points out, quite rightly, that I am inconsistent in how I punctuate the many different kinds of list scattered throughout the text.³ The sub-components in my lists are variously followed by semicolons, full stops, or nothing at all.

Badley writes (p 47) that:

- bullet points may be punctuated with a semi-colon;
- bullet points may be punctuated with a full stop.
- bullet points already have their punctuation mark up-front and need no other
- but shouldn't bullet points which are questions have their own question mark?

Presumably the same points may be said of lists preceded by numbers and/or by letters (although lettered lists seem rare these days).

In this paper I examine some different ways of presenting such lists. First of all I turn to various publication manuals for their advice. I keep to bulleted lists – although the advice is much the same for enumerated or alphabetized lists. I then present six examples to illustrate how such lists would look when they follow the different rules expressed by others. Finally, I present the results of a small study of experts' preferences for some of the variations presented here.

Advice from publication manuals and style guides

The American Psychological Association's (2001) *Publication Manual* is non-committal on this point.⁴ It uses bullet-point lists that:

- are punctuated with a comma (p 7)
- are punctuated with a semi-colon (p 14)
- are complete sentences, with an opening capital letter and a closing question mark or full stop (p 29).

Ritter's *Oxford Guide to Style*⁵ recommends:

- Do not capitalize the first letter of items in lists unless each element in the list forms a complete and separate sentence (p 72).

- End such complete entries with a full stop (p 205).
- Use capital letters for each entry and no full stop when the items in the list are not full sentences (p 206).

Kirkham's *Full Marks: Advice on Punctuation for Scientific and Technical Writing*⁶ recommends no initial capital letters, intermediate semicolons, and a final full stop (p 33). So lists are punctuated thus:

The principal additions to the keyboard are:

- a transmission key;
- five cursor-control keys;
- an Operator's Guide.

But Kirkham also includes examples (p 35) where list items that are incomplete sentences start with a capital letter and end with a full stop.

The Modern Humanities Research Association's *Style Guide*⁷ recommends that list entries start with a capital letter, but have no end punctuation marks, except the last item. The following illustration shows an example (p 10).

Text to be set in a particular font should be marked (manually if necessary) as follows:

- Italic text to be underlined once
- Small capitals to be underlined twice
- Capitals to be typed in capitals, or typed in lower case and underlined three times
- Italic capitals to be typed as capitals and underlined once.

This particular style, of course, is the default style for Microsoft Word (apart from the final stop), and it can be seen regularly displayed in Microsoft PowerPoint slides.

The *Chicago Manual of Style*⁸ has 15 sections on the punctuation of lists. It suggests primarily that full stops should be omitted after all the items in a vertical list, unless one or more of the items are complete sentences (p 160), and that if the vertical list completes a sentence begun in the introductory element, then the final full stop should be omitted, unless the items in the list are separated by commas or semicolons (p 160).

Thus it seems that primarily two kinds of lists are being discussed – one where each item is a complete sentence, and one where each item is a sub-component of a sentence (as in most of the examples above). However, the range of recommended punctuation styles is much the same for both forms of list.

Examples

I now present a set of six (fictitious) examples. Of course, many more versions are possible.

Version 1

Here is how we proceed:

- melt the butter in a large glass bowl for one minute on High
- add the stock and the seasoning
- add the flour and return to the mixture to the oven
- cook for 20 minutes on High

Version 2

Here is how we proceed:

- Melt the butter in a large glass bowl for one minute on High
- Add the stock and the seasoning
- Add the flour and return the mixture to the oven
- Cook for 20 minutes on High

Version 3

Here is how we proceed:

- melt the butter in a large glass bowl for one minute on High;
- add the stock and the seasoning;
- add the flour and return the mixture to the oven; and
- cook for 20 minutes on High.

Version 4

Here is how we proceed:

- Melt the butter in a large glass bowl for one minute on High;
- Add the stock and the seasoning;
- Add the flour and return the mixture to the oven; and
- Cook for 20 minutes on High.

Version 5

Here is how we proceed:

- melt the butter in a large glass bowl for one minute on High.
- add the stock and the seasoning.
- add the flour and return the mixture to the oven.
- cook for 20 minutes on High.

Version 6

Here is how we proceed:

- Melt the butter in a large glass bowl for one minute on High.
- Add the stock and the seasoning.
- Add the flour and return the mixture to the oven.
- Cook for 20 minutes on High.

Preferences

What do readers think about these (and other) settings? Which one do they prefer? Do copy editors have differing views? To collect some data on these issues I asked various well-known copy editors and colleagues to express their preferences for various versions of the lists displayed above (and several other variations). The responses fell into two main groups.

The first group could not be bothered. Peter Elbow, for instance, wrote: "I looked at this and I'm afraid my eyes glazed over. I really don't have any feelings about that level of detail – except for the feeling that I wish people didn't care." Another colleague, Paul Stiff, wrote: "My first reaction is to say that I don't care, but that's not true, as I make decisions about this kind of thing when I edit and copy-edit other people's texts, and doubtless have inclinations, if inconsistently, when I do my own writing."

The second group discussed the pros and cons of the various settings. Moira Johnson-Vekony said, "Lists are the bugbear of editing. To go through your settings one by one...". Vivienne Mawson wrote, "Ah, the dreaded inconsistency! First I would drop every semicolon, comma, and full stop." Yateendra Joshi raised questions about other forms of list, different spatial settings, and indentation, as well as suggesting that the penultimate item in a list should usually end with the link "and" – a recommendation that others explicitly rejected. Mary Ellen Kerans, for instance, wrote about a different list: "The 'and' before the last item should be dropped."

Most people in this second group either commented first on the various styles presented to them for comparison purposes and then indicated that they preferred Version 1, or they stated outright that they preferred Version 1.

Conclusions

Different people will no doubt have different preferences for the typographic settings of lists in academic texts – although some may not notice and some may not care. Some versions listed above (Versions 4, 5, and 6) are seen as ungrammatical and are thus disliked. Other readers will prefer the neatness of Version 1. A lot seems to depend upon the length and the style of the sub-components in the list. Whatever the case, we might all agree that it is important to be consistent within a single text.

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Editing around the World

Scientific publishing in Armenia

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The National Academy of Sciences (NAS) of the Republic of Armenia, with its 30 research institutions, is a leading producer of scientific publications in Armenia. Within NAS, activities of the research institutions are coordinated through the divisions of Mathematical and Technical Sciences, Physics and Astrophysics, Natural Sciences, Chemistry and Earth Sciences, and Armenian Studies and Social Sciences. The Fundamental Scientific Library (FSL), founded in 1935, has been operating since 1943 under the direct supervision of the Presidium of the Academy as one of the NAS research institutions. Through international book exchange programmes, FSL is disseminating NAS publications among partner libraries all over the world.

In this article we will give a general overview of the modern scientific publishing system in Armenia, analyse existing problems, and present the joint efforts of academic community and librarians on mobilising the republic's scientific knowledge in a digital technology world.

Historical overview

The first Armenian book was printed in Venice nearly 500 years ago, in 1512, by Yakob Meghapart (Jacob the sinful). Between 1512 and 1513 he printed five titles: *Urbatagirk* (Friday Book), *Parzaytumar* (A Simple Calendar), *Pataragatetr* (Missal), *Altark* (an astrological treatise), and *Tagharan* (song book). The first Armenian journal, *Azdarar* (The Monitor Monthly), was published in 1794 in Madras. The first Armenian map, "Hamatarac asxarhacoyc", a large map of the two hemispheres, was published in 1695 in Amsterdam. In 1920, after the establishment of the communist regime, science, education, and culture became the Armenian government's top priorities. For the economic rebirth of the country and for satisfying the increasing needs of the industry it was necessary

- to establish a well functioning university system covering many subject areas;
- to create a network of academic institutions for organizing research and supplying industry with the appropriate models and solutions;
- to implement a scientific publishing system;
- to build a network of academic libraries, for assisting scientific and educational organizations in their daily work.

To achieve these goals, and to coordinate scientific work and research activities, the Armenian National Academy of Sciences was established in 1943. The university is responsible for masters and doctoral-level education within NAS. Today NAS publishes 13 peer-reviewed academic

journals, mainly in Russian, the dominant language for scientific communication within the Soviet Union.

1. *Astrophysics*, established in 1965, accepts articles in English and Russian. Currently this journal is distributed by the Springer Publishing Company and is abstracted and indexed in Astrophysics Data System, Chemical Abstracts Service, Meteorological and Geoastrophysical Abstracts, SCOPUS, and Web of Science.
2. *Reports of the National Academy of Sciences*, established in 1944, is available at <http://elib.sci.am>.
3. *Proceedings of the National Academy of Sciences – Earth Sciences series* was established in 1948. Articles are accepted in Armenian and Russian.
4. *Proceedings of the National Academy of Sciences – Mathematics series* was established in 1966. Since 1979 the cover-to-cover translation of the Proceedings has been published by Allerton Press, New York, under the title *Journal of Contemporary Mathematical Analysis (Armenian Academy of Sciences)*. This journal is distributed by Springer.
5. *Proceedings of the National Academy of Sciences – Mechanics series* was established in 1966. Articles are accepted in Armenian, English, and Russian.
6. *Reports of the National Academy of Sciences and the State Engineering University of Armenia – Technical Sciences series* was established in 1948. Articles are accepted in Armenian and Russian. Some issues are available at http://www.seua.am/srd/iss_eng/Web%20Page/ZZPUBLIC.htm
7. *Proceedings of the National Academy of Sciences – Physics series* was established in 1966. The English translation of the Proceedings is published by Allerton Press, New York, as *Journal of Contemporary Physics*. It is distributed by Springer and is abstracted and indexed in Physics Abstracts.
8. *The Bulletin of Social Sciences* was established in 1940.
9. *Medical Science of Armenia*, was established in 1961; until 1995 it was published as *Experimental and Clinical Medicine*.
10. *Biological Journal of Armenia*, established in 1948, accepts articles in Armenian, English, and Russian.
11. *Chemical Journal of Armenia* was established in 1957 and is abstracted in Chemical Abstracts (USA) and Chemical Abstracts Journal (Russia). Some issues are available at http://chemjournal.sci.am/index_eng.html
12. *Historical and Philological Journal* was established in 1958.

13. *Neurochemistry*, established in 1982, is a joint publication of the Armenian and Russian Academies of Sciences. The electronic version is on the Nauka/Interperiodica site, <http://www.maikonline.com>.

In addition, Yerevan State University publishes two peer-reviewed journals with an international reputation: *EPH gitakan texekagir* (The Scientific Bulletin of YSU), established in 1925, and *Banber Yerevani hamalsarani* (Courier of the Yerevan University), established in 1967.

After a difficult period in the 1990s (the collapse of the Soviet Union, and economic and social problems due to transition to a market economy), Armenia faced the challenges posed by independence. Deterioration of the social and economic situation of the country has considerably affected the entire academic and educational system. State budget allocations were curtailed; the renovation and maintenance of NAS institutions were drawn to a minimum; the academic publishing system is in financial straits. Although scientific work in the institutions is active, and there are collaborative partners in different EU and US funded projects, researchers are not satisfied with the existing scholarly communication system, which is mainly based on approaches and managerial mechanisms dating back to the 1970s. Such a situation can be ascribed to four things: miserable state allocations to the sciences; academic institutions are not well prepared for the challenges of the knowledge society; scientists and publishers are not familiar with using ICT (information communication technology) tools for scholarly communication; and paper based publication is becoming obsolete and must be replaced by electronic publication.

From paper based publishing models to the hybrid solutions

The academic publishing system in Armenia is searching for new publishing mechanisms and information dissemination tools. Due to financial problems, journals are being published with delays, and dissemination takes a long time; library users are surprised that these journals are not available as an electronic version. Also, the current system of scholarly communication, based on commercial peer-reviewed academic journals, is far from ideal, and modern technology offers enormous possibilities for improvement. In 2008, The Fundamental Scientific Library was awarded a grant from the Open Society Institute Assistance Foundation to introduce the open access (OA) publishing model to the Armenian academic community. Two OA journals, *Armenian Journal of Mathematics* and *Armenian Journal of Physics*, are online and registered in the Directory of Open Access Journals. They can also be accessed from the FSL home page (<http://www.flib.sci.am/eng/?q=node/55>). Three National Academy of Sciences institutions expressed interest in producing their own OA journals and have asked FSL for technical help and advice.

We are confident that the OA movement will find more and more supporters in Armenia, and FSL will continue advocating open access amongst academics. Yerevan State Medical University started to publish *The New Armenian*



The first Armenian book was printed in Venice in 1512

Medical Journal in 2007, and the electronic version is available from <http://www.ysmu.am/Eng/publication.htm>.

Starting in 2003, the National Academy of Sciences has been publishing a peer-reviewed *Electronic Journal of Natural Sciences* (two issues per year), for which a paper version is also available. All issues of this journal are available from the EBSCO Academic Source Premier Publications database.

One of the largest collections of Armenian rare books (printed between 1512 and 1800) and 18th to early 20th century Armenian periodicals is held in FSL, and is a unique source for scholars from many disciplines. All collections are very fragile, and intensive usage of the FSL rare books is accelerating the paper destruction process. Through the British Library's Endangered Archives Programme the library has obtained modular imaging cameras. Digitization is in progress, and this will allow better preservation conditions for the originals and will make these collections accessible to the world academic community via the surrogates. In the future it is planned to start digitizing NAS journals, going back to the first issues.

Electronic publishing models have already been introduced to the Armenian academic community, and their success is not in question. This is a continuous process, and during the coming years more and more publishers will produce research papers in electronic format.

Looking into the future

Scientific life in Armenia is again on the increase. The National Academy of Sciences – with more than 3,000 scholars, librarians, and IT specialists – is in the vanguard of building a new infrastructure for research and development. The most important developments are

- launching of the supercomputing GRID “ArmCluster” (<http://cluster.am>) with a top performance of 523.4 GFlops and 2 GByte memory per node. The main goal is creation of a high-performance computation infrastructure and provision of efficient information resources to research in Armenia and the South Caucasus region.
- the Black Sea Interconnection project (<http://www.blacksea-net.eu>) is being implemented under the 7th Framework Programme of the European Commission. This project will develop a high-speed backbone

network among the research organizations of the South Caucasus countries and enable connectivity to the pan-European research and education GÉANT2 network.

- building the South-Eastern European eInfrastructure for regional eScience (<http://www.see-grid-sci.eu>), co-funded by the European Union. This initiative is committed to ensuring equal participation of the less-resourced countries of the region in European trends.

To ensure that Armenia will not lag behind in world science, to fulfill increased demands of the scientists, and to be able to

produce and present the results of the research appropriately and acceptably it is important to prepare a new generation of librarians, fluent in European languages and competent in information management. During 2009-2011, a new curriculum on Library and Information Science, in line with EU LIS faculty standards, will be introduced. This means that in the near future Armenia will have enough well-educated specialists in the library and information science fields, and these specialists in their turn will assist the academic community in building digital repositories and in creating e-content.

Correspondence

The international language of science

Norwegians are quite capable of self-defence, but John Taylor's dismissive comments on their standards of written English (*ESE* 2009;35(1):9) should not go unchallenged. With 35 years' experience of reviewing and editing articles, and running a dozen writing courses at the University of Trondheim (including checking papers and theses subsequently), I have never come across English that is 'appalling, frightful, and shocking', and the same applies to articles from the other Nordic countries and The Netherlands. At worst, commas may be left out and words misused ('mitigate' for 'militate', for example), but so they are in articles from Britain and the USA – and surely it is easy for any sub-editor to correct them. It is far more important to tell authors of any nationality that their contribution must

contain a logical thread, linking the research question to the answer, or a new question. Not for nothing did Bradford Hill say that the most frequent difficulty reviewers had over any paper was being unable to answer the question 'What is this article's message?'

In politics the rest of the world has just emerged from eight years of Anglo-Saxon hegemony. I hope that in science we will not now try to impose unrealistic standards in writing English. Those of us who are lucky enough to speak the international language of science should admire the others who struggle, and not damn their efforts so cruelly.

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Important problems to be solved

In the article "English – whose responsibility?" (*ESE* (2009;35(1):9–10), John G Taylor asked several questions in response to Marcin Kozak's article in the preceding issue (*ESE* 2008;34(4):100–104).

He enquired if Kozak's rejected article had been checked for grammar, punctuation, and style. However, Kozak's writing is so good that rejection of his article because of "poor English" seems to be completely unfair. It truly suggests that some editors are prejudiced against non-native speakers of English.

He also wondered why some non-native authors insist on writing in English instead of having the text translated by a qualified translator. The problem is that in many countries qualified scientific translators are extremely rare. I wrote about this in my article published in November 2007 (*ESE* 33(4):101–104). Native speakers of English are not numerous in Poland, and only a small proportion of them are good translators. Besides, hardly any have a sufficient scientific background that would allow them to grasp the message in Polish and express it properly in English.

Courses in scientific translation that pay attention to cultural differences in scientific style need to be developed.

As explained by me in the November 2007 article, and by Katrina Emmett in August 2008 (*ESE* 34(3):70–71), sophisticated terminology, haziness, and excessive referencing may all be mostly due to cultural differences, whereas Taylor regarded them as causes for manuscript rejection.

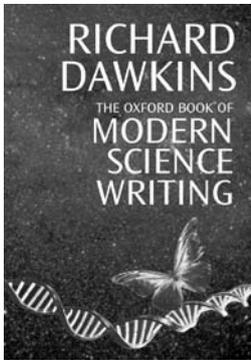
Finally, Taylor was astonished why his own publication for Norwegians about writing academic English did not sell well despite advertising. My answer is: because the book was in English. Earlier in his article he complained that his clients were not competent in English, so they would certainly be more willing to read the book if it had been translated into Norwegian.

In conclusion, the need for education of authors and scientific translators, and editorial bias, are important problems to be solved. I sincerely hope that during the EASE conference in Pisa we will thoroughly discuss the possible solutions.

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Book Reviews

The Oxford Book of Modern Science Writing. Richard Dawkins. Oxford University Press, 2008. 448 pp. £20; \$34.95. ISBN 978-0-19-921680-2.



Language, our ability to link mind to mind, and science are the greatest achievements of Homo sapiens. So says Richard Dawkins in *The Oxford Book of Modern Science Writing*. Dawkins, himself a well-known scientist and writer, has gathered a collection of extracts from, as he puts it in his introduction, “good writing by professional scientists, not excursions into science by professional writers”. All of the pieces in the collection have been written during the past 100 years. Topics cover biology, astronomy, mathematics, physics, chemistry, and psychology.

Reviewing the book was a personal adventure and a delight for me. Richard Dawkins is a professor of zoology with an intense interest in evolution. I also focused on evolution during my undergraduate years, and it seems to me that once dipped in evolution studies, you cannot help but philosophize about life itself. The questioning approach that Dawkins’ excellent selection demonstrates is therefore what I found the most appealing aspect of this book. An extract from Daniel Dennett’s *Consciousness Explained* describes how Mother Nature tries out systems in which many side effects occur. “Whereas evolution depends on history, Mother Nature is no snob, and origins cut no ice with her.” When introducing Dennett’s extract, Dawkins describes him as “the scientist’s philosopher.” He says that the excerpt makes you think, and that Dennett makes it a pleasure to do so – this could also describe the joy of this entire collection and is possibly why it was Dawkins whom Oxford Press approached to create the compilation. Every thinker who is interested in the world around us, whether a scientist or not, should enjoy this celebration of science and literature and indeed of scientists themselves.

The collection is divided into four parts: What Scientists Study; What Scientists Are; What Scientists Think; and What Scientists Delight In. Dawkins admits that some of the extracts could have fitted into more than one section, but I would go further and say it is not always clear why a particular piece falls into one or another title. The featured writers and extracts are listed after the table of contents, and the book also has an index. Dawkins introduces each extract with some background about the author and his/her work, and gives his reasons for its inclusion in the collection. A strong personal touch is conveyed through anecdotes and Dawkins’ own assessments, which set the excerpts in context and bring the characters to life. For example, Dawkins describes Richard Leakey as “‘a big man in every sense of the word’. Like other big men he is loved

by many, feared by some, and not overly-preoccupied with the judgements of any.”

Writings are from 79 scientists, including Francis Crick, Colin Blakemore, Peter Medawar, Erwin Schrödinger, Stephen Hawking, and Roger Penrose (but excluding Richard Dawkins). Sadly only three women are amongst the writers. Some consolation is a piece from Max F Perutz’s book with the wonderful title *I Wish I’d Made You Angry Earlier*, in which he portrays Dorothy Hodgkin, who won the Nobel Prize in Chemistry in 1964. The extract is particularly relevant in an era of lamentation over the absence of women from high positions in science because it depicts a leading woman with feminine rather than masculine attributes: “Some women intellectuals regard their children as distracting impediments to their careers, but Dorothy radiated motherly warmth even when doing scientific work ... She was a great chemist; a saintly, gentle, and tolerant lover of people; and a devoted protagonist of peace.” Interestingly – perhaps ironically – Margaret Thatcher worked in Hodgkin’s laboratory before abandoning chemistry for politics.

The Oxford Book of Modern Science Writing has two equal levels of appeal: the high literary quality and the fascination of the scientific content. Such a combination is rare indeed because the two disciplines are usually sharply divided; a text is either literary or science. I can do no better than give a few examples to illustrate how the writers featured in the book have achieved this combination.

Highlights

In an extract from Primo Levi’s *The Periodic Table*, any impression that chemical elements have to be a dry topic are dispelled by the description of a minute portion of the life of a carbon atom. With Levi we enter a window of this carbon atom’s lifecycle after hundreds of millions of years of monotony, “worthy of a Catholic Hell”, when it was bound in limestone to two atoms of oxygen and one of calcium. The atom becomes detached by a pickaxe, passes through a falcon, a vine leaf, a moth, a cedar, and a woodworm. At the end of the narrative, the carbon atom lodges in the writer’s brain and in a “gigantic minuscule game which nobody has yet described” guides his hand to “impress on the paper this dot, here, this dot”.

Another remarkable piece is that by Carl Sagan, a palaeontologist, from *Pale Blue Dot*. The dot this time is Earth, “a very small stage in a vast cosmic arena where every human glory and tragedy has been played out”. In his introduction to this piece, Dawkins advises the reader to read Sagan’s words again and again for “that special kind of humility which only science can give”.

Emotion and humanness are, however, mostly conspicuous by their absence in the writings of today’s

scientists. Perhaps there is no time to be human any more, although Niko Tinbergen, who received the Nobel Prize in Physiology or Medicine in 1973, found the time – albeit in 1958, when describing his experiments and observations of solitary wasps: “It was remarkable how this simple trick of marking wasps changed my whole attitude to them ... they were transformed into personal acquaintances, whose lives ... became affairs of the most personal interest and concern to me.” He also says that it is worth observing oneself, disparaging “those who relish the satisfaction of their desire for power ... those who enjoyed seeing the wasps being misled without caring much for the question whether they used landmarks or not”.

Niko Tinbergen’s extract is allocated to the What Scientists Study section. An example from *Who Scientists Are* is a piece by Albert Einstein, in which he explains his concept of cosmic religion as the realization of the futility of human desires and aims and of the sublime and marvellous order of nature and the world of thought. He claims that “the religious geniuses of all ages have been distinguished by this kind of feeling”. As this precludes “dogma and a God conceived in man’s image”, no church teaching can be based on it. People with this highest kind of religion have been considered atheists or saints, epitomized by Democritus, Francis of Assisi, and Spinoza. Einstein quotes a contemporary as saying that in this materialistic age the serious scientific workers are the only profoundly religious people.

Jonathan Kingdon, writing on human origins in *Self-Made Man*, is another noteworthy inclusion in the Who Scientists Are section. He writes: “Fossil bones and footsteps and ruined homes are the solid facts of history, but the surest hints, the most enduring signs, lie in those minuscule genes. For a moment we protect them with our lives, then like relay runners with a baton, we pass them on to be carried by our

descendants. There is a poetry in genetics which is more difficult to discern in broken bones, and genes are the only unbroken living thread that weaves back and forth through all those boneyards.” As someone wrote on a listserve recently, metaphors have no place in scientific writing.

The width of Dawkins’ collection makes it inevitable that readers will encounter topics in the book that they might not have sought out, but the quality of the writing in the selected pieces draws readers to explore where they might otherwise not have ventured. Examples for me were Lewis Wolpert’s account of the physics of motion, the most natural state for an object being movement at a constant speed—not being stationary; and the writing of John Tyler Bonner, “who devoted his life to slime molds”.

The final section, What Scientists Delight In, sums up their *raison d’être* in a nutshell as beauty. The beauty of science is described as simplicity and inevitability and the elation of coming upon a law of mathematics, physics, astronomy, or biology that answers a question, that reveals the truth.

If there is any message in the book as a whole, it is probably to be found in Carl Sagan’s extract from *The Demon-Haunted World*, in which he refers to a kind of celebration of ignorance prevalent in modern society. He talks about how we have arranged things so that almost nobody understands the science and technology on which our global civilization depends: “There is a prescription for disaster ... sooner or later this combustible mixture of ignorance and power is going to blow up in our faces.” This perhaps sums up best why the combination of good science and of good science writing is so important.

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ALPSP Survey of Librarians on Factors in Journal Cancellation. Mark Ware. Association of Learned and Professional Society Publishers, 2006. 64 pp. £90; \$160. ISBN 978-0-907341-31-4.

The continuing debate on open access, self-archiving, and the role of publishers is dominated more by opinions and anecdotes and less by hard data. The report under review is a refreshing change in that it provides data collected from questionnaires completed by 340 librarians. Traditional libraries are increasingly threatened not only by rising costs of journals but also by such practices as bundling of journals on one hand and sale of single articles from journals in PDF on the other. A generation that takes reading on-screen for granted, treats the riches of the world wide web as given, and trusts printed matter about as much as electronic sources is sure to view bound volumes of journals as an anachronism. Against this backdrop, the report addresses the crucial issue of discontinuing subscriptions to some journals: caught between shrinking budgets and rising subscriptions, cancellations are inevitable; it is just a question of who gets the chop and why.

The survey chose seven factors and asked librarians to rate each as very important, important, a minor factor, or

not relevant. The seven factors were price, usage, availability of content in aggregated databases, free availability at the journal’s website after an embargo period, free availability in an open access archive, redundancy (faculty no longer requires it), and impact factor. The respondents could also add ‘Other’ and specify the factor. The questionnaire then probed some of the factors in greater detail.

The results were not surprising, but not clear-cut either. The two most important factors turned out to be redundancy and usage – after all, if the journals are no longer required, or are not used, why subscribe to them? The third factor was price, and it is here that the issue begins to be interesting. Is high price by itself the reason? Is it the extent of increase in the subscription? Or is it usage that is not commensurate with price – value for money, as it were? Many years ago, I analysed journal subscriptions in a government-funded research institute in an attempt to relate them to three measures: the proportion of different disciplines in the total research staff, the journals cited by

the staff in the papers they published, and the journals that published these papers. None of the three could be correlated with the subscriptions. In another institute, I suggested that each department be given a specific chunk of the overall budget for journals and come up with a list of journals to be subscribed – a suggestion that was welcomed neither by the administration nor by library staff.

Measuring and justifying the cost of library services is a broad issue, and this report does not claim to address it. Its brief was clearly defined: to assess the extent to which self-archiving is responsible for cancelled subscriptions. Overall, the conclusion is “not appreciably, at least at present, but may become more important in the years ahead”.

The report is clearly laid out and successfully distils the responses, both quantitative and free-text, to give readers a sense of what librarians think about the issue, and it captures the variety of ways in which different libraries confront the problem of reconciling budgets and demands. By itself, £90 (for non-members; ALPSP members pay only half of that) may seem a high price to pay, but as a proportion of the budget of even a small library, the document is good value for money – at least for members of ALPSP.

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Write Effectively: A Quick Course for Busy Health Workers. Tim Albert. Radcliffe Publishing, 2008. 140pp. £21.95; \$45.00. ISBN 9781846191350



Tim Albert worked as a journalist on health publications for years; then he dedicated himself to running courses on writing and editing skills for health professionals. Indeed, he states: “The ideas in this workbook have been tested over many courses, and many people have found them useful in demystifying the writing process” and “this book is on writing as a craft not an art”.

So, the starting point of this workbook is that many workers in the health services feel uneasy about writing, or they even avoid it: almost always their main problem is to write anything at all. In the telling prologue the author encourages the reader, and potential writer, “to stop messing about writing and to get on with it”.

A beginner can simply start to write through the informal short course provided in this book. It consists of 10 easy sessions (Part 1), so that at the end of the workbook, he/she not only should be able to write effectively, but also should have really done it. As a participant stated during a course run by Albert: “knowing the principles of writing takes the fear out of writing”.

The principal sessions of the book concern the process of writing: to reflect on writing generally; what the real problems of your writing are; and a model to measure whether writing is effective. The next three sessions give suggestions on how to prepare for writing, suggesting different planning techniques. Particularly interesting

is the Spidergram technique, which helps one to sort information. Session 7 regards writing the first draft; clear suggestions on what has gone wrong and how to identify it are given in session 8 (the “macro-editing process”); session 9 is on micro-editing tasks required to check details, and to revise whether what has been written is accurate enough; session 10 concerns receiving comments and improving the manuscript.

In this workbook you progress step by step, compiling schemes, short questionnaires, or parts in which you can freely write, with advice such as “Write down what you think your main writing problems are” and “Write down up to three things you want to achieve by the end of this workbook”. This is a useful support technique for potential writers, who can then better focus on their own major difficulties in writing and get rid of their blocks.

The author shows a confidential and informal style that is psychologically effective, sometimes even ironic, making learning easier and more pleasant. At the end of each session, a short paragraph entitled “What you have achieved so far” is a practical tool for monitoring every step you have taken in each specific session.

The book ends with a practical part about grammar and style, providing “Lists for the very keen”: parts of speech, grammatical terms, wasteful words, clichés, useful quotes, and exercises for the “committed writer”.

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EASE gets Wiki'd

We are delighted to announce that both European Association of Science Editors and *European Science Editing* now have Wikipedia entries.

We invite you to visit Wikipedia and comment and/or edit these entries, created by EASE webmaster, Emma Campbell.

Visit <http://www.wikipedia.org> and enter either of the above terms (in full) into the search facility.

EASE-Forum Digest: December 2008 to March 2009

You can join the forum by sending the one-line message "subscribe ease-forum" (without the quotation marks) to majordomo@helsinki.fi. Be sure to send commands in plain text format because only plain text is accepted by the forum software; HTML-formatted messages are not recognised. More information can be found on the EASE web site (www.ease.org.uk). When you first subscribe, you will be able to receive messages, but you won't be able to post messages until your address has been added manually to the file. This prevents spam being sent by outsiders, so please be patient.

Discussions on the forum this quarter have focussed on change. Could the structure of abstracts be changed? What happens if a corresponding author changes address? How can the name of the author, and the time and date of changes to a document be removed in Word? Should the obligation to state the location of publishers in reference lists be changed? Have times changed to permit use of personal pronouns in scientific manuscripts?

Could there ever be an IMRAD revolution?

Abstracts of biomedical manuscripts are set out with the background first, followed by the methods, the results, and then the conclusion to mirror the structure of manuscripts, which are traditionally written under the headings introduction, methods, results, and discussion (IMRAD). This tradition started to emerge in the late 1940s. Before 1945, articles covered several topics and were organized under subject headings like a book.¹ The IMRAD structure, which facilitates browsing sections of the article for specific information, became the norm when the Vancouver Group adopted it in the first edition of the Uniform Requirements for Manuscripts Submitted to Biomedical Journals, published in 1979. It was therefore not authors or readers but editors who cast the IMRAD structure in stone.

Karen Shashok is an authors' editor currently working with AuthorAID in Iran. She had been working on a manuscript for a journal that required the abstract to be written with the conclusions first, followed by the background, then methods, and finishing up with the results. She wondered whether this structure might have advantages for readers but was concerned that departure from the norm would interfere with electronic information seeking and transfer. Mary Ellen Kerans, an applied linguist, could not envisage any problem with interference for searches made by the journal's community of authors and readers because once a structure had been established it would be the genre of discourse, accepted and expected by that community. "Proof of concept" type papers in the fields of engineering, mathematics, and physics, for example, start with the ultimate concept, continue with the device, and end with the heuristic, which is the theoretical argument and more like the conclusion/findings than like objectives. Rather than the past tense used in biomedical

papers, these papers are usually written in the present and present perfect tense: authors seem to unfold their thoughts for the reader as they come to mind. The fun starts when engineers and doctors cooperate to write a paper across their disciplines.

Diana Epstein, who manages a number of ophthalmology journals, pointed out that some journals have a *précis*, which is a short sentence summarising the whole paper. Editors have been known to reject a paper on this single sentence without ever reading the abstract. She thought that journals like the one Karen mentioned might find it quicker to assess their interest in the paper on submission by reading the conclusions first. Busy readers might also appreciate the time-saving structure.

However, Elisabeth Heseltine thought the conclusion-first structure countered Bradford-Hill's logical formula for constructing a scientific manuscript, namely to answer four questions in the order: What was the question? What did you do? What answer did you get? What does it mean? Elisabeth considered that readers would be unable to understand the remainder of the paper if they did not know what question was being asked.

Carol Norris compared abstracts with posters. She found that conference posters with the conclusions in a box immediately after the title appealed greatly to her physician students. Meanwhile Jim Hartley had been looking at journals and found one abstract in *Acta Oncologica* (2009;48 (2):192) with the conclusions first. He was surprised to find it read rather well and thought examples should be viewed before embarking on further discussion.

Ed Hull raised a new point about abstracts that caused a brisk exchange of ideas. He referred to a common rule against repeating lines in the abstract that also appear in the manuscript's text and asked what the objection was to repeating lines. For Will Hughes the objection was clear: stringing together sentences from the manuscript was not summarizing, which is what an abstract should be doing. But rephrasing is difficult for people who are not native speakers of English, for whom Sylwia saw no harm in including sentences in the abstract from the main text. John Taylor was more concerned that an abstract should be a stimulating invitation to read the manuscript and saw no objection to including a sentence from the article if this was a captivating focal sentence from the text. Indeed all discussants felt that if, as Will put it, the abstract is well-written, cogent, and pithy, then there could be no objection if the same sentence or part-sentence also appeared in the paper.

As a postscript I would like to add a view expressed by Nobel Prize winner Peter Medawar. He explained that the IMRAD format is based on the assumption that discovery is an inductive process arising from unbiased observations. In reality, however, observation is inevitably biased and scientific work starts with an expectation in the light of which choices are made as to the methods used and which results are relevant. Accordingly, he argued that

the discussion should come first, followed by the scientific facts and acts.²

Corresponding authors on the move

The affiliation given for an author in the manuscript should be that at the time the study was conducted. Mary Ellen Kerans asked forum participants what they did if the corresponding author had another address at the time of submitting the manuscript. The consensus was that the affiliation information should be that at the time of the study, and the current address should be used for the correspondence information.

When you don't want Word to tell all

Elisabeth Heseltine asked if anyone who edited on screen using Word with track changes knew how to remove the name, date, and time from the changes and comments that appear on screen when you hold the cursor over the side-balloon. She learnt from the answers that the name of the author can be changed easily by clicking on Tools - Options - Security and checking the box beside "Remove personal properties on save". Changing the time and date, however, is not so easy. You can change the clock and date or time zone on the computer temporarily by using the Adjust Date/Time at the right-hand bottom corner of the screen or, as Timothy DeVinney suggested, you can use a metadata removal tool to get rid of personal information in a Word file. He provided a URL from which the software could be downloaded (http://www.esqinc.com/products_iscrub.asp) and a reference to an article (http://www.theregister.co.uk/2004/02/02/microsoft_releases_metadata_removal_tool/) with a link to a Microsoft add-on for Office 2003.

Elisabeth thought changing the clock and date back and forth every time you work on a document over a number of days would be laborious, and metadata removal tools might not be the thing for the technologically challenged. She has resolved in future to make a copy of the document, edit it without track changes and then, just before sending the document, click "Compare documents" and compare it with the original. Then, all the changes will have the same date and time.

Are book publisher locations valuable or a waste of time in reference lists?

Standard styles for citing books in a scientific journal's reference list require that the publisher's location (city) be included in the citation. Lorna O'Brien asked the forum whether the publisher's location was really relevant in these days of global companies and online ordering. But Aleksandra Golebiowska from Poland pointed out that not all publishers are global and not everybody has access to the internet to order online.

John Taylor thought there were occasions when the location would be important. For instance, versions of a book published in different locations are not always identical, and a handbook on English might not have the same appeal published in New Delhi as the same one published in the UK. John suggested it would be useful

to include the ISBN as alternative or supplementary information.

Jim Hartley liked to see where a book was published as an indication of the relative cost and problems in obtaining a copy, whereas for Will Hughes it was an indication of where the author was coming from, geographically. He thought that within countries there was often quite a bit of autonomy so, for example, it made little difference where a book was published within the UK. He just puts London for all UK books, unless it is clear which city it comes from. But in other parts of the world, he did think it was useful to know the "home" of the book.

The point that Lorna was trying to make, however, was that you could spend a lot of time looking for an elusive location because the big publishers do not state the location in their "blurb", and large retailers like Amazon also keep it a mystery. Mary Ellen Kerans took up this point with alacrity, calling the practice of stating the location quaint but useless, especially as often the location that is given in a reference list is wrong because it is difficult to find this information. Yateen Joshi had found that the branch offices of some publishers had different lists. Nancy Boston agreed, adding that raising location queries with the author could dilute the effort that authors put into answering more important queries.

Use of personal pronouns in academic writing

John Taylor had always understood that personal pronouns are to be avoided in academic articles and felt that repetitive use of "I" and "we" gives the impression of an account of events rather than a presentation of research findings. He referred to one client who he felt, by his insistence on using "I" in his paper, gave the impression that it was God's gift to the field.

Nancy Boston agreed that once upon a time the use of personal pronouns had been frowned upon, but in her experience most journals allow and even preferred their use, except in the methods section. Here she saw some sense in avoiding their use because it was not important to know who performed each part of an experiment. She also tended to cut down use of the pronouns in the introduction, especially where the future tense was used – for example she would change "in the next section I will describe" to "The next section describes".

Marcin Kozak quoted Richard Webster's sentiments³ that assumptions, decisions, and choices should be in the active voice: "the research scientist is not a passive observer of Nature; he or she is an active instigator with all the subjectivity that that entails. Other assumptions, other decisions and other choices would have led to other results and perhaps different understanding...we scientists are human, and we are fallible therefore..." This in my opinion is an important point. It should be clear that the author accepts responsibility for the work, which is why I added to the discussion that when I receive a biomedical manuscript without personal pronouns in it (which is rare) I ask the author whether the Holy Ghost performed the experiments.

Although Angela Turner encouraged the use of personal pronouns in her animal behaviour journal, she thought

they could be used too liberally and a sentence could be more precise without them. She would write “This paper describes a case study”, instead of John’s example “In the following I describe a case study”, but she would change “The data analysis was performed with SPSS” to “We analysed the data with SPSS”. Angela also thought the situation might vary with the scientific area, because she had been told that chemistry journals discourage the use of personal pronouns.

Carol Norris gave examples of the *BMJ* and *Nature*, which ask authors to write in the active. *Nature Medicine’s* methods section has been devoid of the passive for years. Carol’s view was that clever writers could avoid a plethora of “we’s” through use of the innate agent. *Nature* claims that readers are able to grasp concepts more easily if they are conveyed directly. Carol also thought that another advantage for journals would be that active structures usually require fewer words than passive structures, resulting in the shorter texts so beloved by journal publishers.

An entirely different approach was taken by Mary Ellen Kerans. For a functional linguist, she said, the issue was flow of information rather than philosophical considerations of active versus passive voice. A linguist sees flow through “theme” (information which comes at the beginning of the sentence) and rheme (all the words that follow). Good writers instinctively think about what they should put at the start of a sentence so that it flows naturally from the preceding rheme. They “thematicize” information by starting the sentence with it and then use either active or passive voice, as grammatically necessary. Passive forms aren’t intrinsically a problem if the sentences start with logically flowing information. Passive forms only become a problem if they’re used repeatedly, with inappropriately “thematicized” information. Likewise, inappropriately thematicizing “we”, merely to make an

active-voice sentence for philosophical reasons, would call attention to itself if it didn’t help flow of information. Editors (or revisers or translators) should focus less on whether one voice is “better” than another and more on what information should naturally flow from the end of the last sentence.

The question arose as to whether “we” was appropriate when co-authors did not exist. Sylwia Ufnalska said that some of her clients in Poland claimed that this use of “we” was common practice. She did not like the practice but thought “I” could be awkward in a sentence and would prefer structures like “In my opinion”. Marcin Kozak viewed “we” as appropriate when the readers were included: “We will discuss the results”. Marge Berer discouraged use of “we” for anything except “we the authors” because of the difficulty of otherwise knowing whether the authors meant “we in the community” or, “we who agree such and such” or, “we right-thinking people”, etc.

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Lorna O’Brien: lorna@authorserv.com

John G Taylor: jgtaylor@c2i.net

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Technical Tips: Spelling out abbreviations in Word documents

You can use Autotext to easily spell out abbreviations – or add long chunks of text.

Say the abbreviation UTI has been abbreviated throughout your document. On first encountering it, highlight the spelt out form – if the author hasn’t spelt it out, type in the full version, and then highlight it.

Then press Alt+F3 – a box pops up, into which you type UTI, and then choose OK.

The next time you come to UTI in the text, put your cursor within or immediately after the “word” (you don’t even have to highlight the whole word), press F3 – and the abbreviation is spelt out for you.

This little manoeuvre is also useful for inserting bits of text you commonly use, for example certain queries

to authors. You just need to think of, and remember, an abbreviation or short phrase to type in, after which you immediately press F3.

If you do forget what abbreviations you’ve used for those chunks of text, check in the Autotext file (it’s one of the Autocorrect Options under Tools).

But it’s probably easier to keep a list of your abbreviations somewhere (maybe on yet another post-it note, which will join those already clustered around your computer screen). Over time, you can build up quite a list – and save a lot of time, trouble, and typing.

Margaret Cooter

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My Life as an Editor



Yateendra Joshi (yateendra.joshi@gmail.com) is a double-titled editor for WISE in Pune, India. He is a longstanding sponsored member of EASE and contributes regularly to discussion on the EASE forum and is the author of the chapter on designing tables in the *Science Editors Handbook*. We asked Yateendra some questions about his experiences of editing.

ESE: Yateendra, what is your current job title?

YJ: I have more than one: Senior Trainer, Cactus Communications, and Senior Fellow, WISE (World Institute of Sustainable Energy).

ESE: What was the career path that led you here?

YJ: While working as a scientist in agriculture, I became interested in information science and documentation. I was interviewed but was turned down because I lacked formal qualifications in documentation. However, the interviewer (and later my boss for 15 years, Dr R K Pachauri) hinted that I should consider editing – something that had never crossed my mind. I was lucky to win a place on an intensive, 14-week course on editing and publishing led by Ian Montagnes, who was then Editor-in-chief at the University of Toronto Press. This was a turning point: I not only benefited immensely from the course but was able to join the Tata Energy Research Institute, New Delhi. I worked with TERI for 15 years before moving to Pune to join WISE. It was while working part time with WISE that I got to know Cactus Communications in Mumbai. I joined the company in early 2007.

ESE: What does a typical day at work involve?

YJ: That depends on who I am working for that day. If for Cactus, currently it involves working on modules of a distance-education course on writing for postgraduate science students. If for WISE, it is copy editing manuscripts of book chapters and attending to routine correspondence.

ESE: What do you love about your job, and what do you dislike?

YJ: I love it when authors are obscure but I am able not only to understand them but also to put their message across clearly and elegantly; I am pleased if I can chase harmless facts to their lair (things like the missing bits in references and less common abbreviations and units of measurement); and I like being able to spot tiny irregularities (a decimal in place of the raised dot or a single letter of Garamond raising its head among a sea of Times New Roman).

I hate having to re-work copy-edited matter when authors make large-scale changes to their so-called final versions; I dislike seeking clarification from authors about missing figures and tables; and I am annoyed at being interrupted by telephone calls reminding me of my deadlines from those who have defaulted on theirs – yet, this is the copy editor's lot, and I end up doing it all nevertheless.

ESE: What changes would you make, given the chance?

YJ: I'd like authors and copy editors to understand a bit more of each other's jobs, and both to know more of the work involved in turning data, images, and word-processed text into published output, whether print or electronic.

ESE: In terms of your career, what is your ambition?

YJ: I believe that the ambitious rarely turn to copy editing! That said, I'd love to write a style guide for agricultural sciences (published by the CAB International in Oxford?) and to design a handbook that will allow people in Mumbai or Pune (or any large, populous, and chaotic Asian city for that matter) to use public transport with ease and confidence.

ESE: Why (and when) did you join EASE? What benefits do you get from your membership of EASE?

YJ: Joining a professional organization helps editors to become part of a community. In that respect, I have been singularly lucky. Members of EASE have been gracious to sponsor me as a member all these years (I became a member in 1989) and EASE helped me to participate – and even to lead a session or two – in three of its conferences. A member in India accepted me as an intern. These gestures have been immensely rewarding both personally and professionally.

ESE: Which is your favourite column in *ESE*, and why?

YJ: Hard to say, although Viewpoints, News Notes, and the Editor's Bookshelf and Webwatch are interesting and useful.

ESE: How do you think *ESE* can be improved?

YJ: I was amused by the polarized discussion on Copyediting-1, a virtual discussion group of copy editors, on which is right, "bring water to a boil" or "bring water to the boil", proving Bernard Shaw right about Britain and USA being two nations divided by a common language. It will be interesting if *ESE* were to start a column about debatable issues of style.

ESE: Do you have any interesting anecdotes to share with us?

YJ: I can recall two. The author (who also happened to be my boss) of a chapter in a book about global warming that I had carefully copy-edited pointed out, some months after the book was published, that throughout his chapter, carbon dioxide had been rendered as CO₃. Horrified, I checked all the printouts and soft copies and all were fine. This remained a mystery until one day, while taking printouts, I noticed that the title of a paper began with the word *Qricing* where it should have been *Pricing*. Immediate enquiries brought out a rueful admission from our IT group that sometimes, when two PCs are sharing a printer through a data sharer, such things are known to happen.

In a table showing how much wood was required annually for different uses (construction, packing, and so on), one row said "shoe laces". The author simply said that the table was being reproduced from another book but was gracious enough to admit that correction was needed. The answer occurred to me while discussing this problem later at home – for "shoe laces", read "shoe lasts".

This Site I Like

EasyCalculation.com

The screenshot shows the homepage of EasyCalculation.com. The main heading is "Free Calculators and Converters". Below this, there is a list of various calculators and converters, including:

- Basic/Scientific Calculator**
- Basic Area Calculators:** Squares, Rectangle, Triangle, Rhombus, Trapezium, Polygon, Kite, Prism, Pyramid, Circle, Cone, Cube, Cylinder, Ellipse, Sphere, Hemisphere.
- Online Statistics Calculators:** Mean, Median, Mode, Standard Deviation, Geometric Mean, Grouped Data Arithmetic Mean, Class Interval Arithmetic Mean, Root Mean Square, Correlation Co-efficient, Regression, Harmonic Mean, Factorial, Permutation and Combination, Probability, Normal Distribution, Normal Distribution (PDF), Binomial Distribution, Negative Binomial Distribution, Poisson Distribution, Hypergeometric Distribution.
- Trigonometry Calculators:** Basic Trigonometry, Right Triangle.
- Analytical Geometry Calculators:** Distance between two Points, Ratio or Section, Mid Point, Centroid of a triangle, Point Slope Form, Slope Intercept Form, Two Point Form, Two Intercept Form, Length of Perpendicular, Distance between 2 Points(3 Dim), Ratio or Section(3 Dim), Mid Point(3 Dim).
- Numbers Calculators:** Math Expression, Square Root, Percentage, Decimal Fraction, Recurring Fraction, Prime Number, Prime Factor, HCF and LCM, Simple Interest, Compound Interest, Million Billion Converter.
- Online Matrix Calculators:** Matrix Addition, Matrix Subtraction, Matrix Multiplication, Matrix Inverse, Matrix Algebra.
- Algebra Calculators:** Quadratic Equation, Cubic Equation, Quartic Equation, Complex Number.
- Conversions:** Decimal to Hexa or Binary Converter, Hexadecimal to Decimal or Binary Converter, Binary to Hexa or Decimal Converter, String to ASCII or Hexa or Binary Converter.
- Color Converter:** HEX to RGB, RGB to HEX.
- Date and Day Calculators:** Age Calculator, Monthly Calendar, Day of Year, Days in Month/Leap Year, Days between Dates, Adding Days to Dates.
- Mortgage Calculators:** Simple Mortgage, Amortization, Loan Comparison, Adjustable Mortgage Payment, Down Payment, Interest Only Mortgage, Mortgage Prepayment, Pre-Payment Penalty, Mortgage Refinancing, Savings/Investment, Retirement.
- Unit Conversions:** Acceleration Converter, Area Unit Converter, Length Unit Converter, Volume Unit Converter, Weight Unit Converter.
- Conversion Factors And Tables:** Acceleration Conversion Factors, Area Conversion Factors, Length Converting Factors, Volume Converting Factors, Weight Conversion Factors.
- Health:** Body Mass Index(BMI), Pregnancy, Blood Alcohol Level(BAL), Water Requirement, Body Fat, Basal Metabolic Rate(BMR).
- Funny Math, Puzzles, Bandwidth Calculator, Love Calculator, Zodiac Calculator**
- Physics:** Classical Physics, Electromagnetism, Fluid Mechanics, Thermodynamics, Waste Management

I was once asked to calculate the geometric means for a large series of bacterial minimum inhibitory concentrations. Don't worry about what those are (for the purposes of this item), but the reality was that I was presented with 30 sets of data, each containing between 2 and 90 values. I did what every moderately sane editor would do – I panicked. Then I googled “geometric” means (you can always rely on Google to help you out in a crisis), and one of the first sites listed was EasyCalculation.com. Serenity returned. I calculated my means using the idiot-proof tool provided, completed the table as required, and

smugly sent it to my client. Another project was thus snatched from the jaws of disaster, and I suddenly had time on my hands. I started to look around the rest of the site.

This is truly an Aladdin's Cave of math tools. It has dozens of free online calculators (no registration or downloading is required) where you can enter data and output parameters as diverse as the area of a square through negative binomial distribution, factorials, ideal gas law, basal metabolic rate, and even what size air conditioning unit you need for a room of a given size and aspect and what temperature you want to achieve.

In addition, there are detailed explanations of what each parameter is and what it is used for, thus enabling you to sound very knowledgeable when reporting in to the boss or the client – and learning plenty along the way.

If you have some “study time” to use then there is a bank of tutorials for you to work through. Although they require you to have basic mathematical knowledge, anyone who did secondary school maths should have no problem.

On the lighter side the site includes brain-teasers and some calculators intended to entertain rather than inform. My favourite fun page is imaginatively entitled “Funny Math”, and here you can find all manner of little known mathematical facts. For example, who would know that 10 raised to the power 366 is called a Primo-Vigesimo-Centillion (and you might reasonably ask, “Why would anyone want to know?”). If you are interested in ancient number systems there is a wealth of information on those – did you know, for instance, that the Babylonians' numbering system had only two basic elements (\llcorner and \llcorner), meaning that anything bigger than three looks like a pyramid of martini glasses!

Take a look around this site, the property of HIOX in India, and I challenge you to not find something useful, of interest, or at least entertaining.

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News Notes

News Notes are taken from the *EASE Journal Blog* (<http://ese-bookshelf.blogspot.com>). Please email items for inclusion to Richard Hurley (rhurley@bmj.com), with "News Notes" as the subject.

Open access day 2008 . . .

In 2008, 14 October was international open access day, with the goal "to broaden awareness and understanding of open access, including recent mandates and emerging policies, within the international higher education community and the general public." The Open Access Directory compiled a wiki to help organise much of the world's material (http://oad.simmons.edu/oadwiki/Main_Page), and Greg Laden wrote a poem for the day (http://scienceblogs.com/gregladen/2008/10/a_poem_for_open_access_day.php). The Open Access Scholarly Publishers Association announced their formation. And the day's organisers published six videos (from a teacher, librarian, funder, student, physician scientist, and a patient advocate) on why open access matters (<http://vimeo.com/oavideos>). See <http://openaccessday.org>.

. . . and open access week 2009

Open access week has been declared for 2009. For the first time, this popular international event will be extended from one day only to a whole week, 9-23 October, to accommodate widespread interest in the movement toward open access (free online access forever) to scholarly research results. This event will present an opportunity to broaden awareness and understanding of open access to research, including access policies from all types of research funders within the international higher education community and the general public.

Weak pound hurts subscriptions

The fall in the value of the pound is damaging the budgets of UK university libraries. Costs of subscriptions to research journals from the rest of Europe and the United States have risen as a result of changes in the exchange rate. Since July 2008, the value of the pound has fallen by about 25% against the US dollar and the euro. The increased cost is a problem because libraries at large institutions typically spend 75% of their acquisition budgets on journals. (www.knowledgespeak.com, 05 Jan 2009, "Weak pound hurting journal subscriptions in UK, say associations")

Australian journal restricts access

From January 2009 the *Medical Journal of Australia* (www.mja.com.au) is restricting online access to general content, excluding research papers, to subscribed users only. The online edition of the journal has been free since its inception in 2001. All previously published articles will remain open access. Research articles will be freely accessible online for two weeks after publication, after which a subscription will be required. Twelve months after publication, all articles will revert to open access. (www.knowledgespeak.com/newsArchiveviewdtl.asp?pickUpID=7415&pickUpBatch=1066#7415, 6 Jan 2008, "Online edition of Medical Journal of Australia retreats from OA")

They underestimated me!

To celebrate the end of George Bush's presidency of the United States, the *Guardian* newspaper has published online a random generator of Bushisms, his infamous gaffes. For such delights as "Free societies are hopeful societies. And free societies will be allies against these hateful few who have no conscience, who kill at the whim of a hat", "You know, one of the hardest parts of my job is to connect Iraq to the war on terror," and "I've been in the Bible every

day since I've been the president" try www.guardian.co.uk/world/interactive/2009/jan/09/bushism-random-generator. *Pikestaff*, the newsletter of the Plain Language Commission, also marks the change in US president by sending readers to www.dubyaspeak.com. The latest *Pikestaff* is at www.clearest.co.uk/newsletter/newsletter.php?id=30.

Societies investigate journals' future

The European Respiratory Society and the American Thoracic Society have been selected for a pilot to test the application of semantic web and Web 2.0 technologies to journal articles, from a large number of applications. The project will explore the potential of these tools to help society publishers increase readers' and members' engagement with the society and its publications. These two societies were selected because they publish "a significant proportion of high quality articles" in their field, and their content is highly structured. They hope that the experiment will help them better understand what the next generation of online journals might look like. (*UK Serials News*, 23 Jan 2009, www.ringgold.com/UKSG/si_pd.cfm?AC=2244&Pid=10&Zid=4289&issueno=187)

Talking about older people

"The terminology used to describe older persons varies considerably, even in international documents," a United Nations report says. "It includes: 'older persons,' 'the aged,' 'the elderly,' 'the third age,' 'the ageing,' and, to denote persons more than 80 years of age, 'the fourth age.' The committee opted for 'older persons' (in French, *personnes âgées*; in Spanish, *personas mayores*), the term employed in General Assembly resolutions 47/5 and 48/98." In the United Nations' statistical services, these terms cover people older than 60. The statistical service of the European Union considers "older persons" to mean people aged 65

or above, because 65 is the most common age of retirement and the trend is towards later retirement still. See United Nations Committee on Economic, Social and Cultural Rights. *The economic, social and cultural rights of older persons*. Geneva: UN High Commissioner for Human Rights, 1995 (<http://www.unhcr.ch/tbs/doc.nsf/0/482a0aced8049067c12563ed005acf9e?Opendocument>) and *BMJ* 2007;334:316, doi:10.1136/bmj.39111.694884.94.

Birmingham abandons apostrophes

Road signs and street names in Birmingham will no longer include apostrophes. The city council has decided that the areas such as “Kings Heath” and “Druids Heath” should be apostrophe-free, citing a need to avoid confusion and prevent emergency services from getting lost. In the *Birmingham Mail*, the councillor Len Gregory said, “I don’t see the point of them.” But the Apostrophe Protection Society said that the decision was “absolute defeatism” and sets a bad example. John Richards, founder of the society, said, “Teachers are trying to teach children correct grammar and punctuation. Now children will go around Birmingham and see utter chaos” (www.birminghammail.net, 30 Jan 2009, “Battle to save Birmingham’s apostrophes”).

Do blogs break embargoes?

Scientists are uncertain if blogging is part of science, journalism, or public discourse, says an editorial in *Nature* (2009 Feb 26;457:1058, doi:10.1038/4571058a). Embargoes rest on the principle that work should be peer reviewed and published before being covered by the press. To promote scientific communication, however, work can be presented at scientific conferences ahead of publication, and its authors can answer journalists’ questions—so long as they don’t actively promote media coverage. The same considerations apply in disseminating new scientific results in the blogosphere. *Nature* adds that researchers would do well to blog more than they do: societal

debates have much to gain from the uncensored voices of researchers.

Students armed with subediting skills

A former editor of the *Daily Mirror*, Roy Greenslade, has said that subeditors are disposable in these days of highly educated journalists and straight-to-screen copy. An article in *THES* disagrees: subs are almost always underpaid but they are only rarely underappreciated by the writers whose reputations they safeguard. Excellent subs are not disposable relics of a bygone era. They are the keyhole surgeons of journalism – fast, precise, and adept at ensuring that prevention averts the need for expensive or embarrassing cures. At best they write attention-grabbing headlines and turn convoluted codswallop into plain, comprehensible English. To abolish subbing would risk inflicting on journalism damage comparable to that imposed on team sports by the sale of school playing fields (www.timeshighereducation.co.uk, 5 March 2009, “Students armed with sub-editing skills are given tools for life”).

Clarity is everything

If something is easy to read about, it seems easier to do. The simplicity or complexity with which a task is described affects our attitude towards the task itself and our willingness to do it. Psychologists gave college students information about exercise in either an easy-to-read font (Arial) or an unfamiliar “brushstroke” font; they found that those who read the instructions in Arial were subsequently more willing to make exercise a part of their day. Another way to introduce simplicity is to use simpler words and sentences. Commentators on the article in *Scientific American Mind* say that this points to the value of both clear textual presentation and graphic design (<http://www.sciam.com/article.cfm?id=a-recipe-for-motivation>).

COPE launches newsletter

The Committee on Publications Ethics (COPE) has launched a newsletter to tell its members what

the organization offers. The editor, Jeannie Wurz, hopes to “produce eight pages that other editors will actually want to read.” The inaugural newsletter, *Ethical Editing*, includes an interview with Tim Feest, the new operations director, and Harvey Marcovitch, the outgoing chairman (Liz Wager has now taken the reins). Since large publishers, such as Elsevier, Wiley-Blackwell, Springer, and Taylor and Francis, recently joined, COPE’s membership has swelled to more than 5000 journals, in disciplines including law, earth science, and economics, as well as the physical and biomedical sciences. See <http://publicationethics.org/newsletters>.

JAMA gags whistleblowers

Whistleblowers who spot undeclared competing interests in papers in the top medical journal *JAMA* will be told that they must “not reveal this information to third parties or the media while the investigation is under way,” according to an editorial coauthored by *JAMA*’s editor, Catherine DeAngelis (2009 Mar 20, doi:10.1001/jama.2009.480). The gagging policy comes after Jonathan Leo, a professor of neuroanatomy, divulged a dispute over competing interests to the *BMJ* (www.bmj.com/cgi/eletters/338/feb05_1/b463#208503). He had written to *JAMA* last May (*JAMA* 2008;300:1757–8) to criticise a study for being unduly favourable to a drug (*JAMA* 2008;299:2391–400, doi:10.1001/jama.299.20.2391), and the journal took five months to publish the letter. In a subsequent internet search, Leo found that one of the original authors had a further undeclared connection with the drug manufacturer. The *Wall Street Journal* reports that the journal’s reaction to Leo’s criticism was “angry” (<http://blogs.wsj.com/health/2009/03/13/jama-editor-calls-critic-a-nobody-and-a-nothing/tab/print/>). See http://online.wsj.com/public/resources/documents/leo_statement_for_WSJ.htm

Thanks to Francoise Salager-Meyer, Paola de Castro, Emma Campbell, Margaret Cooter, and Sheila Evered

The Editor's Bookshelf

A big thank you to all those who have been in touch with regard to collaborating to improve and enhance the bookshelf section of ESE. We are still looking for volunteers to find new items for inclusion in the bookshelf or to regularly search just one journal out of a list and work as a team with us.

Please write to paola.decastro@iss.it or pennyhubbard@gmail.com if you wish to send new items or become a member of the EASE journal blog (<http://ese-bookshelf.blogspot.com/>) and see your postings published online and in the journal.



ECONOMICS AND FUNDING

Salager-Meyer F. **Scientific publishing in developing countries: challenges for the future.** *Journal of English for Academic Purposes* 2008;7(2):121–132.

(doi:10.1016/j.jeap.2008.03.009)

Addresses the center-periphery dichotomy in terms of scientific output, placing emphasis upon the relation between science and technology development on the one hand, and social and economic development on the other. Outlines the main problems faced by most peripheral journals, as well as the role nation states play in scientific activities in developing countries. Gives suggestions how to help scientists in periphery countries to become fully integrated members of the worldwide network of science and to contribute to the promotion of scientific multilingualism, a means for science to be truly universal, as it should be.



EDITORIAL PROCESS

Grozier J. **Yours anonymously.**

Physics World 2009;22(2):20.

Letter commending *Physics World* for including an edited selection of comments that originally appeared on its website (physicsworld.com) but regretting that the website allows the use of pseudonyms, since anonymity brings out the worst in people. This is not allowed for letters to the editor, so why does a different rule apply to online comments? This is followed by an “Editor’s note” that points out that this is a convention of most websites and to ask for full names and addresses could discourage people from entering a debate. They are retained in the published comments so readers can easily go back and read the original comments in full.

ETHICAL ISSUES

Fava GA. **Preserving intellectual freedom in clinical medicine.**

Psychotherapy and Psychosomatics 2009;78:1–5.

The journal’s editor notes that the drug industry has full control of many scientific societies, journals, and clinical practice guidelines. Members of special interest groups act as editors, reviewers, and consultants to medical journals, scientific meetings, and non-profit research organizations, with the task of systematically preventing the dissemination of data that may be in conflict with their interest. Censorship may be the result of direct prevention of publication and dissemination of findings by the pharmaceutical company itself. The paper provides several suggestions

for preserving intellectual freedom in medicine, based on research evidence.

Lenzer J, Brownlee S.

Antidepressants: an untold story?

BMJ 2008;336:532–534.

(doi:10.1136/bmj.39504.662685.0F)

This story about antidepressants highlights the ongoing problem of how study results are often distorted by a failure to access full datasets. In fact, the analysis of published and unpublished data from studies of antidepressants in adults shows that only a very small subset of patients seemed to benefit. The problem of publication bias is pointed out through the tendency to publish only positive studies and file away negative studies. On the contrary, all data should be made available to both patients and researchers.

Redman BK, Yarandi HN, Merz JF.

Empirical developments in retraction. *Journal of Medical Ethics*

2008;34:807–809.

(doi:10.1136/jme.2007.023069)

This study confirms that the rate of retractions remains low but is increasing. The most commonly cited reason for retraction was research error or inability to reproduce results; the rate from research misconduct is an underestimate, since some retractions necessitated by research misconduct were reported as being due to inability to reproduce. Retraction by parties other than authors is increasing, especially for research misconduct. Although retractions are on average occurring sooner after publication than in the past, citation analysis shows that they are not being recognized by subsequent users of the work. Findings suggest that editors and institutional officials are taking more responsibility for correcting the scientific record but that reasons published in the retraction notice are not always reliable. More aggressive means of notification to the scientific community appear to be necessary.



INFORMATION RETRIEVAL

Darnton R. **Google & the future of books.** *New York Review of Books* 2009;56:2.

This article is a valuable piece of history of culture pointing out that the power of Google is now changing the way people approach to information all over the world. It considers the role of libraries, publishers, and new technologies facing copyright issues from different points of view. Google will continue to make books in the public domain available for users to read, download, and print, free of charge, but can we talk of a new monopoly?

Suber P. **Open access in 2008.** *SPARC Open Access Newsletter* 2009 129:2.

Clear and complete review of the open access development in 2008, including open access policies at funding agencies and universities, and data on growth, open access archiving, and open access journals. It also considers books and humanities, and is rich in data, numbers, useful reflections, and links

Tenopir C, King DW, Edwards S, Wu L. **Electronic journals and changes in scholarly article seeking and reading patterns.** *Aslib Proceedings* 2009;61(1):5–32.

(doi:10.1108/00012530910932267) By tracking the information-seeking and reading patterns of members of science, technology, medical, and social science faculties from 1977 to the present, this paper seeks to examine how faculty members locate, obtain, read, and use scholarly articles and how this has changed with the widespread availability of electronic journals and journal alternatives. The analysis was based on questionnaires. Results show that the average number of readings per year per science faculty member continues to increase, while the average time spent per

reading is decreasing. Electronic articles now account for the majority of readings, though most items are still printed on paper for final reading.

LANGUAGE AND WRITING

Journals aim to improve access for the blind. *APS News* 2008;17(11):4–7. APS journals are developing ways to improve the journals' accessibility to blind people and others with print disabilities while adding enriched content for all users. The journals currently use XML/MathML formatting for text and equations, with figures in Postscript. They are now working on making equations and images in a universally accessible format (DAISY, Digital Accessible Information SYstem). They hope to offer one of their journals with this option in 2010.

Kekale T, de Weerd-Nederhof P, Cervai S, Borelli M. **The “dos and don'ts” of writing a journal article.** *Journal of Workplace Learning* 2009;21(1):71–80.

(doi:10.1108/13665620910924925) Gives guidelines on typical problems that lead to rejection, and how to avoid these. If authors follow these guidelines the review process of articles will be smoother and the amount of rejects should diminish. Young researchers can find good suggestions about how to write a paper.

Salager-Meyer F, Alcaraz Ariza MA, Pabón Berbesi M. **Backstage solidarity in Spanish- and English-written medical research papers: publication context and the acknowledgment paratext.**

Journal of the American Society for Information Science and Technology 2009;60(2):307–317.

(doi:10.1002/asi.20981) Analyzes the acknowledgment paratext of medical research articles written in English and Spanish in three geographical contexts: Venezuela, Spain, and the United States of America. 150 research articles from leading medical journals in each country were randomly selected. Results show that

acknowledgments from the English-language corpus are significantly more frequent and longer than those from both the Spanish and Venezuelan samples. The number of persons acknowledged and the number of grants received also were significantly greater in the US sample than in the two Spanish-language corpora. Technical/instrumental assistance was more frequently acknowledged than was peers' ideational input. The communicative and sociocultural conventions of academic contributorship are not only discipline-dependent but also language- and context-dependent.

Uzuner S. **Multilingual scholars' participation in core/global academic communities: a literature review.** *Journal of English for Academic Purposes* 2008;7:250–263.

Reviews 39 empirical studies that investigated multilingual scholars' participation in core/global academic communities through article and research publication. These studies were analyzed in terms of multilingual scholars' reasons for publishing in English, the obstacles that stand in their way of international publication, theoretical assumptions about their socialization and/or participation in core disciplinary communities, and suggested conditions for helping them contribute more to the global intellectual voice. The paper also sets out the conditions under which novice multilingual scholars (graduate students) may best be inducted into the mainstream disciplinary culture and suggests avenues for future research.



PUBLISHING

Björk B, Hedlund T. **Two scenarios for how scholarly publishers could change their business model to open access.** *Journal of Electronic Publishing* 2009;12:1. (doi.org/10.3998/3336451.0012.102)

The internet has made possible the cost-effective dissemination of scientific journals in the form of electronic versions, usually in parallel with the printed versions. At the same time the electronic medium also makes possible totally new open access distribution models. Although more than 2000 new open access journals have been founded in the last 15 years, the uptake of open access has been rather slow, with currently around 5% of all peer-reviewed articles published in open access journals. Established journals and publishers have not had strong enough incentives to change their business models, and the commercial risks in doing so have been high. Two scenarios for how scholarly publishers could change their operating model to open access are presented and discussed: the first is based on an instantaneous change and the second on a gradual change.

Fairlie D. **Debating open access and arXiv.** *Physics World* 2009;22(1):20. Letter suggesting that the enormous numbers of papers posted on arXiv indicates that too many papers are being published and that there is at present little motive for authors to publish their material in peer reviewed journals; arXiv should be regarded as more like a daily newspaper, not a place for final publication.

Fry J, Schroeder R, den Besten M. **Open science in e-science: contingency or policy?** *Journal of Documentation* 2009;65(1):6–32. (doi:10.1108/00220410910926103) Discusses the question of “openness” in e-Science. The study is based on 12 interviews with principal investigators, project managers, and developers involved in UK e-Science projects, together with supporting documentary evidence from project web sites. Although there is a widely shared ethos of openness in everyday research practice, there are many uncertainties and yet-to-be resolved issues, despite strong policy imperatives towards openly shared resources.

Jefferson T, De Fiore L. **BMJ pico: a window into the future?** *BMJ* 2009;338:b392. (doi:10.1136/bmj.b392) Pico is a test publication format (sort of extended abstract) proposed by *BMJ* and reducing the length of printed research papers while retaining the full electronic version. This allows them to accept and publish more articles. One of the foreseeable effects of pico and the publishing of more research would be to decrease the *BMJ*'s impact factor by increasing the denominator. This may or may not be compensated by an increase in readership, circulation, and citation (the impact factor numerator).

Nielsen MA. **The future of science: building a better collective memory.** *APS News* 2008;17(10):8. Discusses the relative failure of science to improve the long-term memory and short-term use of the internet to enhance science communication beyond that of using conventional journals. Most attempts to create comment sites where scientists can share their opinions of scientific papers have failed, while the open scientific culture is struggling to succeed; top-down efforts such as open access may be boosted by the National Institutes of Health insisting that every paper they have supported with grants must eventually be made open access, while bottom-up attempts such as the physics preprint arXiv and the particle physics SIPRES-HIV are producing a small but genuine cultural change. The problem of collaboration with initially unknown collaborators is discussed; what is needed is a collaboration market that would ensure ethical behaviour by participants.

Prentice J. **Debating open access and arXiv.** *Physics World* 2009;22(1):20. Letter pointing out that transferring the cost of publishing to the author may make whether to publish a management decision rather than a scientific one.

Ramlagan N. **APS copyright revision expands author rights.** *APS News* 2009;18(2):8.

A recently revised copyright transfer form for APS journal articles allows authors to make and hold copyright for “derivative works” that contain at least 10% new material and not more than 50% of the published article. Otherwise the author must obtain explicit permission from APS. Articles' ideas and material can be reused in conference proceedings and classroom lectures, but the posting of full articles on open content encyclopedia projects like Wikipedia or Quantiki presents a copyright issue. APS gives authors the right to post and update a paper on their (or their employer's) website and on free e-print servers such as arXiv. Authors are entitled to provide full copies of their paper, for research purposes, to a colleague or third party as long as a fee is not charged. Third parties can use copies for teaching, but incorporation into course notes for more than one semester requires permission from APS.

Taylor RI. **Licence to publish better than copyright transfer.** *APS News* 2008;17(10):4.

Letter advocating the policy of the author's employers, a commercial organization that never transfers copyright but only deals with journals prepared to accept a Licence to Publish agreement, which allows the publisher to print the article in their own format and to distribute electronically, while retaining the copyright on the content allowing future use of the text, pictures, etc.

Wiley S. **No to negative data: why I believe findings that disprove a hypothesis are largely not worth publishing.** *Scientist* 2008;22(4):39. Some scientists have become so concerned about negative data that they have created journals dedicated to publishing negative results. Negative results don't seem to advance science, therefore they are not worth publishing. Science is a set of ideas that can be supported by observations. A negative result does not support any specific idea, but only

tells you what isn't right. Negative results can be biased and misleading in their own way, and they are often the result of experimental errors, rather than true findings.



RESEARCH EVALUATION

Banks M. **Elsevier challenged over journal operations.** *Physics World* 2009;22(1):10.

Reports concern about the Elsevier journal *Chaos, Solitons and Fractals*, whose editor-in-chief has published 334 papers since 1991, 290 of which appear in his own journal – including 58 papers in the last year, 53 of which are in the journal itself, and whose papers have received 39,540 citations, 35% of which were by himself.

Experts still needed: there are good reasons to be suspicious of metric-based research assessment [editorial]. *Nature* 2009;457:7–8. (doi:10.1038/457007b)

There are different kinds of metrics for research, but they do not always prove to give robust results. This is the case of the Research Assessment Evaluation in UK. Expert review is far from a problem-free method of assessment, but policy-makers must recognize its indispensable and central role.

Falagas ME, Lerodiakonou V, Alexiou VG. **At what age do biomedical scientists do their best work?** *FASEB Journal* 2008; 22(12):4067–4070.

(doi:10.1096/fj.08-117606)

Several human characteristics that influence scientific research performance, including set goals, mental and physical abilities, education, and experience, may vary considerably during the life cycle of scientists. Is high-quality research productivity is associated with investigator's age? On the basis of a bibliometric analysis, highly cited research productivity plotted a curve that peaked at age 31–35 years and gradually decreased with advancing age. A considerable proportion of this highly cited research was produced by older scientists. High-quality scientific productivity in the biomedical fields as a function of investigator's age plots an inverted U-shaped curve, in which significant decreases take place from around 40 years of age and beyond.

Levitt JM, Thelwall M. **Citation levels and collaboration within library and information science.** *Journal of the American Society for Information Science and Technology* 2009;60(3):434–442.

Examines the Web of Science subject category of Information Science & Library Science and finds that collaboration varies with citation. Collaboration is clearly associated with higher citation, whereas the collaborative rates and levels of the un-cited articles remained low and stable. Influential information scientists had high collaborative levels, but their more highly cited articles on average are not more highly collaborative than their less highly cited articles, even if, they tend to be published earlier. The article introduces a new indicator of collaborative level: the average partner score, which can be used in other investigations of collaboration.

Van Leeuwen T. **Testing the validity of the Hirsch-index for research**

assessment purposes. *Research Evaluation* 2008;17(2):157–160. (doi:10.3152/095820208X319166)

Describes the results of a recent bibliometric study conducted in the Netherlands focusing on the level of the individual researcher, in relation to an academic reward system. The Hirsch index is compared with various bibliometric indicators and other characteristics of researchers, and its usefulness in particularly research assessment procedures is tested. Results show a strong bias towards the research field(s) in which a researcher is active, thereby limiting the validity of this indicator for the specific interest of evaluation practices.

Cassi L, Corrocher N, Malerba F, Vonortas N. **The impact of EU-funded research networks on knowledge diffusion at the regional level.** *Research Evaluation* 2008;17(4):283–293.

(doi:10.3152/095820208X364535) Research networks foster the dissemination of innovation-related knowledge. The structure of collaborative networks and of knowledge transfer between research, innovation, and deployment activities is evaluated in the field of information and communication technology for the European Union as a whole and for several European regions. Results show that research networks complement diffusion networks by increasing the number of links and organizations involved in exchanging knowledge. Two types of actors are key players in these networks: hubs maintain the bulk of ties in the networks also helping the smaller and more isolated members remain connected; gatekeepers bridge research and diffusion networks.

Thanks to Emma Campbell, Eleonora Lacorte, Françoise Salager-Meyer, John Glen, James Hartley, and Renata Solimini.

The next Annual General Meeting of EASE will be held in the Palazzo dei Congressi, Pisa, Italy at 3 pm on Wednesday 16 September

Forthcoming Meetings, Courses, and BELS Examinations

28th EMWA Conference

26–30 May 2009; Ljubljana, Slovenia
www.emwa.org/

NASIG (North American Serials Group) Conference 2009

4–7 June 2009; Asheville, NC, USA
www.nasig.org/conference_registration.cfm

International Conference on Health and Science Communication

17–20 June; St Louis, USA
www.hesca.org/stlouis/

Science Communication Conference

British Science Association with the Wellcome Trust
22–23 June 2009; London, UK
www.britishtscienceassociation.org/sciencecommunicationconference

6th World Conference of Science Journalists

30 June–3 July 2009; London, UK
www.wcsj2009.org/

International PKP Scholarly Publishing Conference

8–10 July 2009; Vancouver, Canada
http://pkp.sfu.ca/ocs/pkp/

International Symposium on Peer Reviewing: ISPR 2009

10–13 July 2009; Orlando, FL, USA
www.iiis2009.org/wmsci/website/AboutConfer.asp?vc=27

International Professional Communication Conference

19–22 July 2009; Honolulu, USA
http://ewh.ieee.org/soc/pcs

6th International Congress on Peer Review and Biomedical Publication

10–12 September 2009; Vancouver, Canada
www.ama-assn.org/

SfEP 20th Annual Conference – Editing in the 20th Century

14–15 September 2009; York, UK
www.sfep.org.uk

10th EASE Conference: “Integrity in Science Communication”

16–19 September 2009
Pisa, Italy

METM09 - Mediterranean Editors and Translators Meeting 2009

29–30 October 2009; Barcelona, Spain
MET pre-meeting workshops: 28–29 October
www.metmeetings.org

10th European Molecular Biology Organization (EMBO) and European Molecular Biology Laboratory (EMBL) Science and Society Conference

6–7 November 2009; Heidelberg, Germany
www.embo.org/events

11th Latin American Colloquium of English for Specific Purposes and 1st Latin American Colloquium of Languages for Specific Purposes

9–13 November 2009; Mérida, Venezuela
http://eventos.saber.ula.ve/coloquiolf2009

COURSES

ALPSP training courses, briefings and technology updates

Half-day and one-day courses and updates.
Contact Amanda Whiting, Training Coordinator, Association of Learned and Professional Society Publishers, Tel: +44 (0)1865 247776; training@alpsp.org; www.alpsp-training.org

Publishing Training Centre at Book House, London

Contact: The Publishing Training Centre at Book House, 45 East Hill, Wandsworth, London SW18 2QZ, UK. Tel: +44 (0)20 8874 2718; fax +44 (0)20 8870 8985, publishing.training@bookhouse.co.uk
www.train4publishing.co.uk

Society for Editors and Proofreaders SfEP runs one-day workshops in London

and occasionally elsewhere in the UK on copy-editing, proofreading, grammar, and much else.

Training enquiries: tel: +44 (0)20 7736 0901; trainingenquiries@sfep.org.uk
Other enquiries: SfEP, Riverbank House, 1 Putney Bridge Approach, London SW6 3JD, UK. Tel: +44 (0)20 7736 3278; administration@sfep.org.uk; www.sfep.org.uk

Society of Indexers workshops

The Society of Indexers runs workshops for beginners and more experienced indexers in various cities in the UK. Details and booking forms can be found at www.indexers.org.uk; admin@indexers.org.uk

University of Chicago

Medical writing, editing, and ethics are among the many courses available. Graham School of General Studies, The University of Chicago, 1427 E. 60th Street, Chicago, IL 60637, USA. Fax +1 773 702 6814.
http://grahamschool.uchicago.edu

University of Oxford, Department for Continuing Education

Courses on effective writing for biomedical professionals and on presenting in biomedicine, science, and technology.

Contact Leanne Banns, CPD Centre, Department for Continuing Education, University of Oxford, Littlegate House, 16/17 St Ebbs Street, Oxford OX1 1PT, UK. Tel: +44 (0)1865 286953; fax +44 (0)1865 286934; leanne.banns@conted.ox.ac.uk
www.conted.ox.ac.uk/cpd/personaldev

BELS - Board of Editors in the Life Sciences examination schedule

www.bels.org/becomeeditor/exam-schedule.htm
1 August, Abbott Park, IL (AMWA meeting); register by 11 July
8 August, Washington, DC; register by 18 July
17 September, Pisa, Italy (EASE Conference); register by 27 August
21 October, Dallas, TX (AMWA meeting); register by 30 September

EASE Business

Nominations for members of Council to serve 2009-2012

Each member of EASE was sent by either email or post a letter dated 14 March 2009 setting out the Nominations Committee's proposed members of Council to serve for three years from the Annual General Meeting to be held in Pisa on 16 September 2009:

President: Joan Marsh (United Kingdom)
 Vice-President: Alison Clayson (France)
 Vice-President: Reme Melero (Spain)
 Treasurer: Roderick Hunt* (United Kingdom)
 Secretary: Sheila Evered* (United Kingdom)
 Members:

Eva Baranyiová (Czech Republic)
 Mare-Anne Laane (Estonia)
 Moira Johnson* (United Kingdom)
 Ana Marusic** (Croatia)
 Petter Oscarson** (Sweden)
 Edward Towpik** (Poland)
 Sylwia Ufnalska** (Poland)

* In attendance *ex officio*

** New members of Council – a short curriculum vitae for each new member follows

(If you received a letter in the post, it means the Secretariat does not have an email address for you or your email address does not accept group emails. If you were one of these and

you have an email address, could you please send it to the Secretary (secretary@ease.org.uk). Many thanks.)

There is no need for any further action at this stage unless you wish to make additional nominations, which of course you are welcome to do. These should be sent to:

Nominations Committee
 EASE
 PO Box 6159
 Reading RG19 9DE, UK.

Each nomination must be submitted with signed letters (NOT emails) from two members of EASE who support the nomination, and a signed letter (NOT email) from the nominee giving his or her agreement to stand for election. A brief curriculum vitae will also be required. Nominations must be received by the Nominations Committee not less than 90 days (**18 June 2009**) before the Annual General Meeting, to be held on **Wednesday 16 September 2009**. Nominations received after that date will not be considered.

In the event of further nominations being received a ballot will be held. Voting papers will be sent to all members of good standing, along with the notice and agenda for the AGM, towards the end of June.

Curricula vitae of candidates for 2009-2012 Council

Ana Marusic, MD, PhD, is Professor of Anatomy at the University of Split School of Medicine, Split, Croatia. Her primary research interest is focused on the interactions between the immune and bone systems. Apart from teaching anatomy, she also teaches medical students the structure of a scientific article in a mandatory course on scientific communication, which her journal – the *Croatian Medical Journal* – introduced into the Croatian medical curriculum. Ana Marusic has been Co-Editor-in-Chief of the *Croatian Medical Journal* since 1994, and her editorial team is very active in peer review research, especially authorship issues and moral reasoning as prerequisites for responsible conduct of research. She is a member of the International Committee of Medical Journal Editors (ICMJE) and has been president of the World Association of Medical Editors (WAME) and of the Council of Science Editors (CSE). She joined EASE in 1993.

Petter Oscarson, PhD, is working at the Oikos Editorial Office in Lund as Technical Editor of *Oikos* (Ecology) and Managing Editor for *Hereditas* (Genetics) and *Lindbergia* (Bryology). He has been there for eight years. He graduated with a PhD in Plant Physiology in Stockholm in 1989, then worked as a scientist with Plant Breeding at the Swedish Agricultural University until 2000. He started his career as

an editor with *Hereditas*, which in 2004 was converted from a regular subscription journal to an author-financed, open access, electronic-only journal. His major interest in this business is the rapid evolution of science journals in the face of electronic development: everything from writing, producing, distributing and reading scientific journals is changing almost faster than we can grasp. It is a challenge for each and every journal, small or big, and whatever the market, to keep up with this development! Petter Oscarson joined EASE in 2001.

Edward Towpik, MD, PhD, is Professor of Surgery and Head of Department at the National Cancer Center in Warsaw, Poland, with primary clinical and research interest in breast cancer and reconstructive surgery. He was a Research Fellow at Harvard Medical School (1983-1985) and Visiting Fellow in Oxford. He is Editor-in-Chief of the Polish oncological journal *Nowotwory* (established in 1923), which is also published in English. His other field of interest is medical history and old and rare books. (He is currently President of the Society of Polish Bibliophiles.) He has been a member of EASE since 1997. In 2000 he joined the Editorial Board of *European Science Editing* (later Publications Committee of EASE) and served for two terms, until 2006. Edward Towpik organized several

EASE Workshops on Scientific Communication in Poland and was a member of the Committee organizing the Ninth EASE Conference in Krakow.

Sylwia Ufnalska graduated from the Adam Mickiewicz University in Poznan, Poland, and majored both in Biology (Master's thesis on plant taxonomy, 1993) and in English Studies (Master's thesis on translation, 1996). She also studied in Trinity College Dublin (Botany, 1990-1991) and at the Central European University in Budapest (Environmental Sciences and Policy, 1994). Thanks to a CEU

scholarship, in February 1995 she visited Oxford University to consult with lexicographers from Oxford University Press. She has worked as a freelance translator and editor of biological texts for 15 years. After the first EASE Workshop in Scientific Communication in Poland in 1999, she and Dr Waleria Mlyniec wrote a short handbook on scientific writing and editing. In 2006, Sylwia Ufnalska attended the EASE Conference in Kraków and became a member of EASE. She is interested in popularization of editorial guidelines among editors, translators, and authors.

Pisa, here we come: an update

Your Programme Committee can report some new developments concerning our Integrity in Science Communication conference in Pisa, 16 - 19 September.

Registration is now on-line! Sign up soon to take advantage of the "Early Bird" discount. It applies until June 30th. When you do, you'll find a "buddy box" on the form as well as a box to tick if you're willing to volunteer to help staff the EASE desk (look under Optional Activities). Please join us in making everyone feel welcome, but especially our new members.

Badges: Everyone will get a name tag this year. We're experimenting with colour-coding to distinguish EASE Council and Committee members from regular members. New members will be identified by a special sticker on their badge.

The **sessions** are shaping up well. We've accepted 23 abstracts, including three for posters so far – and we are still accepting abstracts for posters as there is plenty of space in the conference centre.

The new Plenary speaker on Physical Integrity is Professor Paola Gargiulo, who is an expert on electronic information resources and currently responsible for CASPUR, a digital platform that aggregates over 4000 current academic e-journals.

We have added a new parallel session on Authorship, to be led by Elise Langdon-Neuner and Linus Svensson.

Thursday is a free afternoon, with several activities to choose from: An *excursion to Lucca*, the beautifully preserved walled medieval city where Puccini was born; a *free walking tour* of Pisa for the first 25 people to sign up at the conference centre, and a second tour has been arranged for another 25 people on Saturday afternoon after the close of the conference.

Or you may attend the optional **Workshop on Managing a Journal Office**, to be led by Joan Marsh and Linus Svensson, or take the **BELS examination** (register before



27 August 2009 by contacting 1neistadt@hughston.com).

The **Palazzo dei Congressi** is a pleasant space with well-appointed meeting rooms, comfortable informal sitting areas, outdoor terraces, coffee bar and a very long counter where you can place your flyers and catalogues. We hope you'll take full advantage of these facilities. Tourist information will be available on-site at certain hours.

Sightseeing. For those of you who may be bringing family or friends along, be assured there are sights and excursions to delight the most discerning visitor, whatever their age. Besides the splendid monuments of Pisa itself, there is all of Tuscany to explore – charming hilltop towns overlooking great expanses of vineyard and olive groves; a craggy coastline of small sandy beaches bordered by summer villas, terraced gardens and umbrella pines; and magnificent views.

So have a good summer and join us in Pisa in September. We look forward to seeing you there.

Programme Committee

Posters for Pisa

Although the deadline for receipt of abstracts for presentations has passed, the Programme Committee is happy to receive abstracts for posters up to 31 July. The size of the poster boards is 95 cm x 135 cm. All abstracts should be sent to secretary@ease.org.uk.

Membership changes

New members

- *Individual*

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New member of Publications Committee

Marcin Kozak is an agricultural statistician with a background (Masters, doctorate, and habilitation [a postdoctoral teaching qualification still used in science in Poland]) in agriculture and some experience with official statistics. His current work at the Department of Experimental Design and Bioinformatics of the Warsaw University of Life

Sciences is focused on statistics and information graphics, with a special emphasis on agriculture and biology. Among the editorial boards for science journals on which he has served, he has especially enjoyed those for the publisher Model Assisted Statistics and Applications, where he was a Co-Editor-in-Chief for 18 months and now is an Associate Editor; Global Science Books, where he is a Statistics Advisor for 31 journals; and *Scientia Agricola*, for which he is an Associate Editor. In addition to statistics and graphs, Marcin enjoys writing. He hopes to write at least one article that he himself will like, but this still seems to be just a fixation beyond his skills. So, somewhere in between reading a lot and drawing a lot of graphs, he thinks a lot of writing a lot.

Where do visits to the EASE blog come from?**Percentage of views of
<http://ese-bookshelf.blogspot.com>**

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4% – Canada

3% each – Malaysia, Italy, Australia, Ireland

2% each – Denmark, China, Spain, South Africa, Turkey, Venezuela, New Zealand

1% each – Philippines, Hong Kong, Zimbabwe, Japan, Sweden, Croatia, Vietnam, Czech Republic, Cyprus, Russia, South Korea, Argentina, Poland, Brazil