European Science Editing

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From the editors' desks

Contributions for the journal should be sent to the Chief Editor or the appropriate section editor listed above. See Instructions to authors in the February issue and on EASE's web site (www.ease.org.uk).

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New EASE web site is up and running

If you haven't checked the EASE web pages for a while, do so now. You will find an altogether new look, one that both Council and the Publication Committee hope you will like. Thanks are due to Council member Linus Svensson for all his hard work in putting the new site together. Thanks also go to Emma Campbell, who has taken over as webmaster. Comments and suggestions for the site should go to her (mailtoemma_c @yahoo.co.uk).

Membership payments and fees

Our Treasurer says that payment transactions are finally going smoothly, so this year you can expect your invoice to be on time. In addition, an online payment system is under construction on the web site. Once it is activated, you will be able to pay your membership fee or buy the *Science Editor's Handbook* directly from the site. Non-members will be able to apply for membership and make the necessary payment at the same time.

The individual membership fee for 2006 will be GBP66. For corporate memberships the fees will be GBP192 for three people, GBP251 for four people, GBP304 for five people, GBP363 for six people, GBP416 for seven people and GBP59 each for eight or more members. The non-member subscription to this journal is GBP54.

Plans for Kraków: 9th EASE assembly and conference

Plans for the conference on 15–18 June 2006 are progressing. Jenny Gretton, chair of the Programme Committee, visited Kraków in the early summer with two other committee members and a new venue there is now under consideration. More information will be available either with this issue or very soon.

Requests from the Secretary

Several notices for the Annual General Meeting in the spring were returned with "Address Unknown" on them. If you have moved recently, or even not so recently, or feel that the Secretary may not have your correct address, please contact her.

Data protection requirements: if you do not want your e-mail address to be available in the EASE database or in an EASE publication, please notify the Secretary. In addition, if you inform the Secretary of a change of address, be sure to state whether your e-mail address can accompany the notice in *European Science Editing*.

Oversights/errors

We failed to note that James Hartley's article in the August issue of *European Science Editing* was based on his presentation at the EASE seminar "Habits in science communication and science publishing", held in Barcelona on 29 April 2005. There is more from Barcelona in this issue.

We apologise for the quality of the figure in Ana and Matko Marusic's Viewpoint (p. 82, August issue). We hope that the larger version on p. 125 of the current issue will be a little more legible than the previous one.

Contributions for February 2006

Contributions for the next issue of *European Science Editing* (due out in February) are invited and should be sent to the appropriate member of the Editorial Board (see left, and see "Instructions to Authors" on the EASE web site: www.ease.org.uk). The deadline for the February issue is **15 December 2005**.

Correspondence about EASE and applications for membership (see membership information/application form) should go to the Secretary.

Editorial

Peers on peer review: 5th International Congress on peer review and biomedical publication

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The first peer review congress I attended was in Prague in 1997, when the congress was first held outside the USA. Not only did it introduce me to the World Association of Medical Editors (WAME; www.wame.org) but it was also a fascinating experience for me as a new editor but an old researcher in the field of biomedicine. Suddenly, for someone used to experimental work with mice, cytokines, cell cultures and genes, a new world of research revealed itself. There really was much to be investigated, carefully studied and dissected in peer review and scientific publishing in general. But the research methodology I was used to in my medical training and my later basic science research seemed not to work for peer review. Peer review was not a medication you could test in a randomized clinical trial, and most intervention studies in peer review did not come with a definite answer [1–3]. Peer review is about how people understand, think, behave and report their opinions, and the approach to peer review must thus be very interdisciplinary [4], including methodologies from fields other than biomedicine, such as psychology, sociology, cognitive and behavioural sciences, and linguistics.

The fifth congress (held in Chicago, 16–18 September 2005) showed that research in peer review is going just that interdisciplinary way, offering a wide variety of methodological approaches. The congress was the largest so far, with 470 participants from 38 countries, and 42 oral and 53 poster presentations during the three days of the meeting. It was once again superbly organized by the founders of these meetings, Annette Flanagin and Drummond Rennie from *JAMA*, in collaboration with Fiona Godlee and Jane Smith from the *BMJ*.

On the first day I was anxious because my talk was scheduled right after the plenary lecture by the legendary Eugene Garfield, who again explained to journal editors and researchers the real meaning and purpose of the impact factor. Our own research explored psychological aspects of authorship, studying contribution disclosure forms as self-reports of behaviour. We showed that authors of scientific articles have problems with all cognitive aspects of survey methodology when they fill out contribution disclosure forms: 1) they may not understand the questions and may have views of authorship different from those formally prescribed in the biomedical community; 2) they may have difficulties in recalling relevant behaviour; 3) they have problems inferring and estimating the behaviour in question, or 4) with mapping the answer to the response format; and 5) they may edit the answer for social desirability.

A number of other studies explored the process of review and editorial decisions and the variability in how evidence is assessed. For example, the group headed by Lisa Bero (University of California, San Francisco) performed a prospective cohort study of articles submitted to major medical journals and reported on the editorial changes in the manuscripts before publication and the characteristics of accepted manuscripts. Other studies explored novel aspects of peer review and scientific publishing. I liked the study by Penelope Green (Harvard School of Public Health, Boston), who gave the same sets of original data to 12 statisticians and got statistically different interpretations. So much for kappa statistics!

In another study John Gilstad and Thomas Finucane (National Naval Medical Center, Bethesda) explored the rhetoric of scientific articles that reported clinical trials of the same intervention. They showed that, although experimental findings in the articles were consistent, the rhetoric varied greatly, possibly influencing the clinical interpretations.

There were many other great studies, presented either orally or as posters, all of high quality — which must have given the organizers a difficult task when sorting the abstracts into these two groups. These studies did an excellent job of showing the range of issues in peer review research: authorship and contributorship; journal guidelines and policies; the peer review process; scientific misconduct; publication bias; open access, indexing and impact factors; dissemination of scientific information to the public; reporting standards for trials and other studies; and trial registries.

This is a sketchy and personal account. The full list of abstracts is available at www.ama-assn.org/public/peer/program.html#predetail. Some presen- tations will be published as a joint effort of *JAMA*, the *BMJ* and the *Medical Journal of Australia*. A lot of research remains to be done in the three years until the sixth congress. But, to paraphrase Richard Smith, who gave a plenary talk on journals as agents for change or just mirrors of society, the research presented at the congress showed us not what to think but what to think about!

References

1. Callaham ML, Schriger DL. 2002. Effect of structured workshop training on subsequent performance of journal peer reviewers. Annals of Emergency Medicine 40:323–328.
2. Jefferson T, Alderson P, Wager E, Davidoff F. 2002. Effects of editorial peer review: a systematic review. JAMA 287:2784–2786.
3. Schroter S, Black N, Evans S, Carpenter J, Godlee F, Smith R. 2004. Effects of training on quality of peer review: randomised controlled trial. BMJ 328:673.
4. Shashok K. 2005. Standardization vs diversity: How can we push peer review research forward? Medscape General Medicine 7(1). Available at: www.medscape.com/viewarticle/498238_1. Accessed: 26 September 2005.

Articles

Differences between the sciences in their handling of the research literature*

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Abstract
Editors are usually aware that there are differences in the way that research is communicated in different disciplines, but they may find it harder to pin down exactly what the differences are. The purpose of this contribution is to help clarify some of the differences — more especially, the ones that affect editors. The initial approach looks at general ways of dividing the sciences: for example, the need to differentiate between experimental and observational sciences. The discussion then turns to differences in research activity in different subjects and how these are reflected in the resultant publications. Finally, the question is raised of whether differences in presentation found in printed publications are likely to be modified when research is presented online.

We all feel intuitively that different disciplines operate within different frameworks, and that practitioners in each discipline often approach their research activities in different ways. The differences can sometimes be hard to pin down, though many have tried. Here, for example, is an American classification, which has the virtue of brevity:

> Those who think and get somewhere are mathematicians. Those who think and don't get anywhere are philosophers. Those who don't think and get somewhere are the natural scientists. Those who don't think and don't get anywhere are the humanists. (Machlup 1980)

As this summary suggests, differences arise both in the intellectual input and in the nature of the research output from different disciplines. Such differences can be classified in a variety of ways. An obvious one is to separate the physical sciences from the biological sciences. This division was used by an eminent 20th-century physicist: he classified scientific disciplines as being either physics or stamp collecting. Slightly less obvious is the division between experimental and observational science. The former are laboratory-based; the latter are concerned with recording natural phenomena. Different forms of classification typically produce different disciplinary groupings. In this case, for example, astronomy is associated with physics, but is an observational science, whereas biochemistry is an experimental subject, though associated with biology.

Another division, partly related to this one, is that between amateurs and professionals. Valuable contributions from amateurs usually come in the observational sciences, rather than the experimental sciences. There are many amateur astronomers, but few amateur brain surgeons. And, of course, there are other divisions — between science and technology, between pure science and applied science, etc. The question here is: to what extent do all these differences lead to differences in the way practitioners communicate?

Perhaps the easiest way of translating such generalities about classification into something concrete is to look at the characteristics of journal articles in different disciplines. Table 1 compares data from biochemistry, psychology and sociology (Lindsey 1978). What is listed is the percentage of papers in each subject that contain the specified component. Thus papers in biochemistry, a laboratory-based, experimental subject, are almost all concerned with quantitative analysis. Psychology, a mixture of experimental and observational studies, has significantly more papers devoted to qualitative analysis; while sociology, where observational studies predominate, is split more or less evenly between quantitative and qualitative analysis. This difference has implications for both the printing and the layout of material in the different subjects. The second column shows a similar trend in the use of graphics. Biochemical articles typically contain many graphs along with pictures (of specimens, etc.). Sociological articles usually need no more than a small number of graphs. Again there are obvious implications here for the layout, production and cost of articles in the different disciplines. By way of contrast, the percentage of tabular material is quite similar in the three different fields. This is hardly surprising — tables can be used to organize both quantitative and qualitative information, so they are useful across all disciplines.

Table 1. Percentages of journal articles in different subjects containing the specified component

Subject	*Graphics*	*Quantitative analysis*	*Tables*
Biochemistry	91	98	74
Psychology	42	75	71
Sociology	23	53	65

* Based on a presentation at the EASE seminar "Habits in science communication and science publishing", held in Barcelona, 29 April 2005.

Another subject difference that can impact on the appearance of a journal is the length of the articles. Chemists, for example, often find that they can write up their results in the form of a short paper, whereas some areas in the biological sciences need much more space in which to describe the work. In experiments done some time ago with synopsis articles — a hybrid between an abstract and a full paper — chemists were consequently able to adapt to the format more easily than others. The number of references attached to an article can also vary with subject, with papers in the physical sciences often having fewer than other subjects.

Areas of difference

Having, I hope, illustrated that disciplinary differences can affect what is published, I return now to the more general question of the different styles of research in different disciplines. One obvious difference is the extent to which researchers work in teams. The term "big science" has long been used to describe the sort of research, common in space science or high-energy physics, where very expensive equipment is utilized by large research groups. Increasingly over the past half-century, subjects that were originally classified as "little science" have come to follow this trend towards teamwork. Such collaborative research naturally leads to multi-author papers. One example is that important guide to biomedical publications, *Index Medicus*. This came under pressure towards the end of the last century because it was restricting the number of authors it listed for a given entry to six, and this was now felt to be far too few. Typically, in experimental science, over two-thirds of submitted papers have more than one author. Theoretical papers have a greater chance of having a single author; indeed, in mathematics, less than a quarter of submitted articles usually have multiple authors.

There are differences also in the geographical spread of authors in a multi-author paper. Some research areas — space science is an example — depend on international groupings. Others are more parochial — as with the geology of a particular local area. In the first half of the 20th century, papers with only one author were still the norm, but the move towards multi-authored papers grew rapidly in the second half of the century (and still continues).

The trend towards more multi-author papers is common across both pure and applied science. It can be found in papers submitted by industrial scientists as well as those by academics. Multi-author papers seem to be more widely cited than single-author papers, and the research they contain tends to be regarded as being of higher quality. It might be thought that multi-author papers would also be less likely to contain fraudulent data. In fact, this is not true, because authors may not have a detailed knowledge of what their colleagues are doing.

Multi-author papers are more likely to be accepted by referees, but, in any case, rejection rates from the average science journal are often quite low — usually no more than a third of the submissions. (This compares with the social sciences, where two-thirds are commonly rejected.) For example, one American study compared rejection rates of leading journals in astrophysics, zoology and sociology (Hargens 1990). The rejection rate was some 10% in astrophysics, 40% in zoology, and over 85% in sociology. The journals also varied, in the same order, in terms of the average number of revisions required from the authors, and in the average time between the submission of a paper and the final editorial decision on it.

Referees can basically make one of three recommendations — accept, make changes, or reject. Since most journals use two referees, it is possible to examine their level of agreement. This seems to be high in the physical sciences, but rather lower in the biomedical sciences. One study of psychology journals analysed the refereeing recommendations on a scale running from -1 (completely different assessments) to +1 (complete agreement). It found an average score of +0.27, implying moderate, but far from perfect, agreement between the referees (Marsh and Ball 1989). As editors are well aware, some referees tend to be harsher, and some kinder, to authors than most of their peers. Another study found 5–10% of the referees were consistently high in their gradings, and a similar percentage consistently low (Siegelman 1991). But there appears to be little systematic bias against particularly categories of author — for example, those attached to little-known institutions. This, presumably, is why "blind refereeing", involving removal of the author's name and affiliation from the submitted manuscript, does not seem to make much difference to refereeing assessments in the sciences. Where things can break down is when an author challenges some aspect of the accepted disciplinary framework. More often than not, such challenges prove to be wrong, but occasionally they may prove to be breakthroughs. The problem lies in differentiating the two. In consequence, pioneering work sometimes proves to be more difficult to publish than routine research. One interesting survey looked at the evaluation of chemical papers by referees and compared their evaluations with the assessments of readers (as measured using citation counts and informed opinion). It found that highly cited papers generally received lower referee evaluations than papers which were cited less often (Small 1973).

It might be supposed that even authors whose papers are rejected benefit from the comments provided by the referees. Quite often this proves not to be the case. A study of papers rejected by the *BMJ* found that some three-quarters were subsequently published elsewhere. Of these, only a fifth were revised before their submission to the other journal. Another, broader, survey found that about 60% of authors whose papers were not accepted by their first-choice journals later resubmitted elsewhere. Only half carried out any revision, yet some 90% of these resubmissions were accepted (Garvey 1979). An interesting example that has been reported in some detail relates to a biomedical article dealing with the treatment of patients who had eaten a poisonous fungus. It was rejected successively by four journals, only the first of which gave detailed reasons. It was finally accepted by the fifth journal to which it was sent — still in the identical form which had been used for submission to the first journal (Shephard 1973). Persistence in trying to have a paper published can depend on the background of the author. Practitioners, such as engineers, tend to give up more easily than academics.

Authors obviously have a range of factors in mind when selecting a journal in which to publish their work. The two main ones usually prove to be the prestige of the journal and the sort of readership it has. Both factors take time to build up, so the most popular journals are typically those which are well established with a wide international readership. Indeed, it is such journals that receive the main share of citations in each discipline. A survey of the top-ranked journals in physics at the end of the 1960s found that all but two had been in existence for over 35 years. It is worth noting that, when the leading science publishers are examined in these terms, there is a fair correlation between the number of journal titles they produce and the share of overall citations that they achieve. This suggests that each publisher's stable of journals has a rather similar distribution of prestige. However, there are differences between subjects in terms of the range of journals used by authors and readers. For example, if we ask how many journals a reader needs to scan in order to cover (say) 90% of the papers on a given topic we find that if the relative scatter in physics/chemistry is taken as 1, then in mathematics it is 1.4, in geology 1.7 and in botany/zoology 1.8 (Meadows 1974). If the scatter in physics and chemistry is indeed the norm, then relevant articles are spread more widely in other subjects. In other words, authors dealing with a particular topic tend to publish in a wider range of journals in these subjects.

Speed of publication is usually important only in areas where competition is strong. Otherwise, authors tend to regard it as a less important factor than the prestige and readership of a journal (though this may be partly because authors often expect more rapid publication of their work than actually occurs). "Hot" research topics come and go, but some fields are particularly likely to want rapid publication. An example is theoretical physics, for which "letters" journals providing speedier publication of abbreviated accounts were established long ago. In parallel, theoretical physicists set up a network for the distribution of preprints, so that research results could be disseminated without having to wait for the appearance of the journal issue containing them. In more recent years, this need to publish rapidly has entered the biological sciences via the explosion of publication in biomolecular research.

Another difference between the sciences lies in the level of interest in them displayed by members of the public. An analysis of media reporting of science shows that some subjects are much more likely to be mentioned than others. Such subjects usually have one of two characteristics: either they are an observational science (as with meteorology), or they have implications for human life and health (as with the biomedical sciences). Several journals nowadays produce press releases concerning papers that they consider to be important; but press releases for topics with neither of these two characteristics usually show a low take-up. This differentiation means that some of the main fields of science — chemistry, for example — only occasionally warrant a mention in the media. Lack of mention is a matter of concern to scientists, since the public perception of their field may influence everything from student recruitment to allocation of funding.

Pressure on editors can also vary with the nature of the science. The obvious example is biomedical journals that publish pharmaceutical research. The pharmaceutical industry, via its advertising and purchase of offprints, can bring considerable pressure to bear on editors concerning the reporting of their products. Similarly, the growing emphasis on funding applicable research is increasing pressure for secrecy in the research areas most affected. Less obviously, editors in scientific societies with an appreciable number of amateur members have to consider their needs alongside the needs of the professionals. A journal that satisfies the publishing requirements of the latter may not satisfy the reading requirements of the former. When authors are publishing in their society's journal, they can bring more pressure to bear on the publishing policy than they can manage with commercial publishers. One result is that societies have tended to be rather more flexible in terms of electronic publishing policy and copyright than their commercial counterparts.

Electronic publishing

An obvious question is how the transition to electronic publishing has affected the different disciplines. The basic principles have remained the same, though the outcome may appear differently. For example, the desire to publish in journals with high prestige and readership means that any newly established journal has a tough fight on its hands. When the journal is electronic, the fight is harder, since many scientists are doubtful about such matters as the long-term availability of electronic journals. In consequence, a typical electronic journal currently is an electronic version of an established printed journal. An exception to this rule is when rapid publication is important; in this regard, electronic publishing is clearly a winner.

One of the success stories of electronic publishing has been the growth of what started as the high-energy physics preprint service in the early 1990s. It has developed and expanded to become one of the basic sources of research information for many physicists. Similar services have subsequently been set up in other areas of research where rapid communication is important. The interesting aspect of this type of approach is the question it raises about the refereeing process. Originally, a preprint was a copy of a paper that had been accepted for publication, and was now waiting in the queue. Now it is often a paper which has yet to be submitted for publication — in some instances, it may never be submitted. The refereeing process occurs, if at all, after the appearance of the paper on the web site. Readers can post their comments and criticisms, which act as a kind of retrospective assessment of the paper. In the electronic environment, these assessments can be attached directly to the paper, so that subsequent readers can see all the information together.

One type of subject difference not yet mentioned relates to the age distribution of the references attached to a paper. For some subjects, especially in the experimental sciences, the material cited is mostly quite recent; for others, especially in the observational sciences, the references usually include a somewhat higher percentage of older material. In terms of printed journals, this difference is not of great practical importance. For electronic journals, however, it implies that having only a short back-run of material available in electronic form can be more acceptable for readers (and authors) in some subjects than in others.

Another area of difference in electronic publishing is the amount of storage space available. In principle, papers in an electronic journal, unlike those in a printed journal, can be as long as the author wants. In practice, authors have to continue writing relatively short accounts if they wish to be read, but they can append to these accounts as much data as they wish. So sciences which collect large quantities of data — from astronomical observations to the genome — are finding electronic publishing beneficial. Physicists seem more devoted than molecular biologists to electronic preprints, but the latter attach more importance to the use of shared databases. From a publishing viewpoint, the difference is that electronic preprints tend to replace printed journals, whereas databases supplement them. In the early days of electronic communication, the sciences that employed it most were naturally those whose subject activities involved computers — mainly physical sciences and engineering. Now, researchers in all areas of science are accustomed to using computers, so differences in terms of using online communication are much smaller. From an editorial viewpoint, differences are probably most noticeable in terms of the software packages that authors in different fields use to prepare their papers.

In general, differences that are intrinsic to the individual disciplines will exert themselves regardless of the media in which they are published. An example is the distribution of research on a particular topic across different information sources. We saw that the extent of the scatter — the number of journal titles required to cover a given percentage of the papers on a specific topic — varied with subject area. Much the same thing seems to occur in the electronic world. The distribution of material across a range of databases is also dependent, in part, on the research field concerned (Hood and Wilson 2001). The virtue of electronic communication from the viewpoint of an investigator is that it is much easier to obtain quantitative data for analysis. For example, one study has looked at the geographical spread of online links from departments of chemistry, psychology and history in US universities (Tang and Thelwall 2004). In terms of international links, the profiles of the different departments were rather similar: links to Europe were by far the most common (followed by Asia and Canada). But in terms of the percentage of links that were international, there were differences: chemistry led with 19%, followed by psychology with 16%, and then history with 6%. Data of this sort can be correlated with already known differences, as in the level of research collaboration or the percentage of multi-author papers.

Will subject-based differences in the nature of research communication change in the future? A shift to electronic publishing can clearly modify publishing practices but will not necessarily alter the communication characteristics of practitioners in a given field. However, there are some indications that the reorganization of publishing activities (e.g. the implementation of open access) may lead to some convergence of the practices in different fields in the future (Kling and McKim 2000).

References

Garvey WD. 1979. Communication: the essence of science. Oxford: Pergamon Press, p.190

Hargens LL. 1990. Variation in journal peer review systems: possible causes and consequences. JAMA 263:1348–1352.

Hood WW, Wilson CS. 2001. The scatter of documents over databases in different subject domains: how many databases are needed? Journal of the American Society for Information Science and Technology 52:1242–1254.

Kling R, McKim G. 2000. Not just a matter of time: field differences and the shaping of electronic media in supporting scientific communication. Journal of the American Society for Information Science 50:1306–1320.

Lindsey D. 1978. The scientific publication system in social science. San Francisco: Jossey-Bass, p.81.

Machlup F. 1980. Knowledge and knowledge production, vol. 1. Princeton, New Jersey: Princeton University Press, p.74.

Marsh HW, Ball S. 1989. The peer review process used to evaluate manuscripts submitted to academic journals: interjudgmental reliability. Journal of Experimental Education 57:151–169.

Meadows AJ. 1974. Communication in science. London: Butterworths, p.155.

Shephard DAE. 1973. Some effects of delay in publication of information in medical journals, and implications for the future. IEEE Transactions on Professional Communication 16:143–147.

Siegelman SS. 1991. Assassins and zealots: variations in peer review. Radiology 178:637–642.

Small, H.G. 1973. Characteristics of frequently cited papers in chemistry. Washington DC: National Science Foundation.

Tang R, Thelwall M. 2004. Patterns of national and international web inlinks to US academic departments: an analysis of disciplinary variations. Scientometrics 60:475–485.

Is there a demand for science communication courses? The experience of the *Croatian Medical Journal*

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Abstract
***Background*. The editors of the *Croatian Medical Journal* introduced short courses to provide training in planning scientific research and writing scientific articles for local authors.**
***Methods*. Practice-oriented, hands-on courses were conducted in Croatian. The main outcome measure was the number of attendees and their satisfaction with the course, assessed through answers to a questionnaire (from 1, totally unsatisfied, to 5, totally satisfied). Scientific output of course participants (n=85) was assessed by the number of those who published in Pubmed-indexed journals compared with their self-indicated peer controls (n=76).**
***Results*. Fourteen courses have been conducted since 2002, with a total of more than 300 attendees. The average scores were 4.5±0.2 for the usefulness of the courses, 4.5±0.2 for their interest, 4.5±0.1 for information provided, and 4.4±0.1 for the style of presentation. There was no significant difference in the proportion of participants and non-participants who published at least one paper, either before (P=0.146; χ^2-test) or after the course (P=0.156; χ^2-test).**
***Conclusion*. The interest in courses in planning scientific research and writing scientific articles among medical professionals in developing and transitional countries is considerable. Such courses should be established and conducted locally, using personal contacts as the primary means of advertising.**

Good research reports from developing, transitional, and newly emerged countries are recognized as an important contribution to solving global health problems [1]. Nevertheless, obtaining high-quality manuscripts from authors in these countries is not an easy task [2, 3]. As editors of an international medical journal representing a small scientific community we are painfully aware of the problems that arise from insufficient training of authors in scientific writing [4]. In order to avoid losing valid scientific data only because of poor presentation, the editors of the *Croatian Medical Journal* (CMJ) introduced an author-friendly policy [5]. That policy was a "curative" measure, but it became obvious that "preventive" measures could be equally, if not more, important. The CMJ therefore introduced a two-day workshop entitled "How to Plan and Write in Medical Research", with the purpose of educating physicians in the basics of research planning and writing a scientific paper. Our intention was to teach local authors how to prepare their research reports according to high professional standards, so that reports have more chance of getting published in international journals.

The CMJ workshops were preceded by five short courses held by distinguished journal editors and researchers from the international scientific community. The groundbreaking first workshop was given by Elisabeth Heseltine of EASE in 1997 [1]. Three years later we organized a three-day course on medical writing and publishing with the participation of three senior editors from *The Lancet* and the co-convener of the Cochrane Collaboration's Quality Improvement Advisory Group. In 2001, for a workshop entitled "Scientific communication in biomedicine", we were again privileged to have colleagues from *The Lancet* and the Cochrane Collaboration as speakers, this time joined by representatives of BiomedCentral and the Office for Research Integrity of the Department of Health and Human Services of the United States. The cooperation with *The Lancet* and the Cochrane Collaboration continued for a 2002 workshop on "Writing a research paper in public health and biotechnology". The last workshop with international participation was held in 2003, when Edward Huth (*Annals of Internal Medicine*), Annette Flanagin (*JAMA*), Trish Groves (*BMJ*), and Chris Palmer (University of Cambridge) were the guest speakers.

Methods

Programme
The CMJ course "How to plan and write in medical research" was first introduced in December 2002. It was distinctly practice-oriented, hands-on, concise and well-rounded (Table 1), and was run by a group of devoted teachers with solid knowledge and experience. The Zagreb School of Medicine provided the logistical support for the course. The classes were

Table 1. CMJ course programme

Programme	*Type of class*	*Duration (minutes)*
Research in health care practice	Lecture	45
Importance of publishing a research paper	Lecture	45
Responsible conduct of research	Lecture	90
Structure of research paper	Seminar	90
Research planning	Seminar	60
Study design	Seminar	60
Research planning	Practical	60
Searching for information	Practical	90
Statistical thinking	Practical	90
Technical editing of research paper	Practical	90
Writing an abstract	Practical	90

quite small (up to 25 participants), and each attendee worked individually on a computer. The lecture rooms were equipped with modern teaching tools. Meals and refreshments were provided.

Advertising
When continuing medical education was introduced at the Zagreb School of Medicine, the CMJ saw it as an opportunity to offer its own short course. We had the advantage of speaking the local language and working in an academic setting, so we could communicate directly with many physicians and scientists. That allowed us to advertise our short course continually, on a personal level. We also spread information about our course by sending leaflets to general practice offices, hospitals, and other health institutions. Announcements were placed on the web site of the School of Medicine and the CMJ. The Croatian Chamber of Physicians rated the course as contributing 11 licensing points, and advertised it in its monthly publication. The course also contributed 1.7 credits in the European Credit Transfer System of higher education, which made it attractive for graduate students.

Assessment
At the end of each course, all participants took a knowledge test. They also filled in an evaluation questionnaire in which they assessed four aspects of the course: usefulness, interest, information provided, and style of presentation (on a scale from 1, totally unsatisfied, to 5, totally satisfied).

Furthermore, each participant identified a peer to be taken as his or her control to compare the number of papers published in PubMed-indexed journals before and after the course. The participants were asked to name a colleague who was of the same sex and similar age, professional field, and academic status.

Results

Each of the five short courses with international speakers was attended by 30 to 40 medical professionals from Croatia and neighbouring countries.

The first course conducted solely by the CMJ editors was received enthusiastically and was followed by another only a few months later; a total of 14 courses have been conducted so far. On several occasions we were invited by individual institutions to teach their employees. Up to now, more than 300 medical and other professionals have attended the courses. The participants rated the course very positively: the average scores on the questionnaires from the last 10 courses were 4.5±0.2 on a scale from 1 to 5 for the usefulness of the courses, 4.5±0.2 for their interest, 4.5±0.1 for the information provided, and 4.4±0.1 for the style of presentation. In their written comments, participants frequently suggested that the courses should be longer, with more practical work and more instruction in statistical analysis.

To assess the possible impact of the course on scientific output, we searched PubMed for papers published by participants in the first four CMJ courses (n=85) and their peer controls (n=76). Nine participants did not name controls. The proportion of participants who published at least one paper did not differ from that of controls either before (P=0.146; χ^2-test) or after the course (P=0.156; χ^2-test). Before the course, 20 out of 85 (17%) participants published a total of 38 papers; after the course 25 (21%) published a total of 46 papers. Among the peer controls, 10 out of 76 (8%) published 38 papers before and 15 (11%) published 29 papers after their counterparts attended the CMJ course. There were no statistically significant differences in number of published papers before and after the course, neither within the group of participants (P=0.359; McNemar test) or in the group of peer controls (P=0.424; McNemar test).

Discussion

In spite of the fairly high fee (130 Euro), demand for the CMJ course has been steady during the past three years, and we already have a waiting list for the next course, planned for December 2005.

The high demand for the CMJ's courses in Croatia can be explained by several factors (Box 1). First, we believe that our course is of high quality. It provides instruction on research planning, which is a prerequisite for any scientific work. The satisfaction of our "clients" is the best advertisement we can have.

Box 1. Characteristics of a successful science communication course

- High quality course programme
- In local language
- Good logistics
- Connection with a medical journal
- Official recognition — licensing points
- Continuity

Second, the course is given in Croatian and is therefore suitable even for people with a poor knowledge of English, which is the usual language of international speakers and workshops.

Third, the course has good logistics, ensuring an adequate learning environment and teaching tools. As there are few institutions that can provide a computer for each participant, our mobility is limited. Nevertheless, good logistics are necessary to maintain the high quality of the course.

Fourth, the course is conducted by the editors of a locally recognized medical journal, which adds a unique dimension to the teaching and gives the participants the feeling that they are personally connected to the journal. They are encouraged to use the knowledge and skills they have gained and to submit their manuscripts to the CMJ. During the course, we sometimes discuss concrete problems that they face in their research, and offer help when needed. The course is a confidence-building process aiming to yield long-lasting results. It is always gratifying to receive a well-written paper from a researcher who attended one of our courses.

Furthermore, it is easier for authors to send their manuscripts to editors whom they know personally.

Last, but not least, the course is officially a part of continuing medical education for Croatian physicians. The significance of this formal administrative recognition should not be underestimated.

We found no difference in the output of scientific publications between course participants and controls, as measured by the number of papers published in PubMed-indexed journals. This could be explained by the low dynamic of research and publishing in small scientific communities such as Croatia [6]. Since our courses were established less than three years ago, a significant increase in the scientific output of participants might be expected several years from now, as was shown in a study of the effect of editorial tutoring on the publishing activity of authors 8–12 years after tutoring (M Marusic, personal communication).

In contrast to the highly encouraging results in our country, attempts to give the course in neighbouring countries have been somewhat disappointing. Although there is practically no language barrier for us in any of the countries of the former Yugoslavia, we have succeeded in organizing only one workshop outside Croatia, in Mostar (Bosnia and Herzegovina), made possible mainly because of an existing close partnership between the schools of medicine in Zagreb and Mostar.

In conclusion, we suggest that science communication courses should be established and conducted locally, by local experts, using personal contacts as the primary means of advertising and increasing the demand. We believe there is much interest in such educational programmes in developing and transitional countries (e.g. in southeastern Europe). The European Association of Science Editors could play a crucial role in training teachers and helping them to start courses in their own scientific communities. Continuity and formal recognition of such local courses should be given high priority. The keys to the success of such courses are embedding them in the local environment and ensuring their structure and outcome.

Acknowledgements
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References

1. Heseltine E. 2005. EASE workshops on science communication. European Science Editing 31(2):41–45.
2. Marusic M. 1997. Life of an editor-in-chief: first five years. Croatian Medical Journal 38(1):5–8.
3. Marusic M, Marusic A. 1999. Small scientific journals from small countries: breaking from a vicious circle of inadequacy. Croatian Medical Journal 40(4):508–514.
4. Marusic A, Marusic M. 2003. Teaching students how to read and write science: a mandatory course on scientific research and communication in medicine. Academic Medicine 78(12):1235–1239.
5. Marusic M, Marusic A. 2001. Good editorial practice: editors as educators. Croatian Medical Journal 42(2):113–120.
6. Petrak J, Bozikov J. 2003. Journal publications from Zagreb University Medical School in 1995-1999. Croatian Medical Journal 44(6):681–689.

From the literature

What do we know about peer review?

By the time you read this, a major congress on peer review will have taken place in Chicago (see p 112 and p 128). Doubtless much new research will be presented which I hope may form the basis for future columns, but the congress (the fifth in a series held roughly every four years) seems a good opportunity to summarize the state of peer-review research.

One major problem with peer-review research is evident from the congress title: it focuses on biomedical journals. Perhaps because of the growth of evidence-based medicine, these journals have been at the forefront of examining their practices to see whether medical editing, as well as medicine itself, is underpinned by rational scientific evidence. Much less research has been published from other scientific disciplines.

The state of the evidence

Even within biomedicine, the evidence base is less than ideal. A systematic review of the effects of peer review on the quality of reports of clinical trials concluded that, if peer review were a new drug, it would not get a licence [1]. This systematic review, and an accompanying one on the effects of technical editing [2], are currently being updated but, unlike the clinical trials whose reporting they seek to improve, the literature on peer review has not expanded significantly over the last four years. While lack of evidence of peer review's effects should not be confused with proof that it does not work, this situation is troubling, considering the resources devoted to it.

One problem with peer-review research is that the process is so enmeshed in the system of academic assessment (both for funding decisions and personal career progression) that it is unthinkable to many scientists that alternatives might be experimented with. Peer review has become a sacred cow, considered so essential to the dissemination of research findings that we dare not tamper with it.

Problems with peer review

Several commentators have drawn attention to the shortcomings of peer review [3]. Richard Smith, former editor of the *BMJ*, suggested that throwing a pile of papers from the top of a flight of stairs and publishing those that reached the bottom might be just as effective as peer review. As far as we can tell, even he never tested this sytem at the *BMJ* [4].

We do know that the ways in which peer review is organized differ both within and between disciplines. For example, a few medical journals now reveal reviewers' identities to authors, but most biology journals prefer anonymous reviewing. The evidence of the effects of revealing or masking reviewers' and authors' identities, at least among medical journals, is inconclusive [1]. It is possible that such variations do not materially affect the quality of the review process, but we cannot assert this with certainty because it has not been properly tested.

Future directions in science publishing

Electronic publishing has presented great opportunities for science publishing and, in theory at least, the possibility of wider participation in the review process. A few disciplines, notably physics, now use preprint servers, but this model has not caught on widely in other areas and preprint servers have not replaced traditional peer-reviewed physics journals. An experiment in public, electronic post-publication review at the *Medical Journal of Australia* concluded that this was no substitute for commissioned prepublication review [5].

Calls for greater transparency in the pharmaceutical industry, coupled with those for clinical trials to be registered, have recently led to an increase in the amount of information provided directly on company web sites [6]. Such material has not undergone peer review by journals although, for clinical trial findings submitted to regulatory authorities, the material is likely to have undergone rigorous internal review and must conform to strict quality standards. It is interesting to consider what effect this could have on peer-reviewed medical journals and, in particular, their future role in publishing results of clinical trials. Once again, Richard Smith has proposed a radical solution, in which journals no longer publish commercially sponsored clinical trials but serve to critique them [7].

As long as academic promotions depend on authors achieving a certain number of publications in journals with a known impact factor, the supply of papers to such journals is unlikely to dry up. Commercial companies also appreciate the benefits of independent publications and the assumption that peer review ensures fair reporting is built into some regulatory frameworks. In many countries the distribution of articles from peer-reviewed journals by drug companies is less restricted than the distribution of company-produced marketing material. Therefore too much is at stake to experiment with radically different forms of assessing and disseminating scientific research. While this situation continues, peer-review research will probably continue to focus on testing the effects of relatively minor procedural changes, but the scientific community will continue to ignore the big question of whether peer review itself is the best system we can devise.

References

1. Jefferson TO, Alderson P, Davidoff F, Wager E. 2001. Editorial peer-review for improving the quality of reports of biomedical studies. Cochrane Database of Methodology Reviews, Issue 3. Art. No. MR000016. Chichester: John Wiley.
2. Wager E, Middleton P. 2003. Technical editing of research reports in biomedical journals. Cochrane Database of Methodology Reviews, Issue 1. Art. No. MR000002. Chichester: John Wiley.
3. Wager E , Jefferson T. 2001. Shortcomings of peer review in biomedical journals. Learned Publishing 14(4):257–263.
4. Smith R. The inside view on writing for medical journals. http://bmj.bmjjournals.com/talks/wjournal/tsld001.htm.
5. Bingham CM, Higgins G, Coleman R, Van Der Weyden MB. 1998. The Medical Journal of Australia Internet peer-review study. Lancet 352:441–445.
6. Anon. 2004. Drug company to make its trial results public [News item]. BMJ 329:366.
7. Smith R. 2005. Medical journals are an extension of the marketing arm of pharmaceutical companies. PLoS Med 2(5):e138.

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EASE-Forum digest: July–September 2005

The Forum has seen some interesting debate recently, more than can be summarized in this column. Therefore I have had to be selective and I apologize to those contributors who made valuable contributions which I have not been not able to squeeze in.

The "ic" and "ical" debate

Do we attribute too much of the variation in the English language to the British English–American English divide? The immediate reaction to Helle Goldman's question about when to use "morphologic" and when to use "morphological" was "ic" for Yanks and "ical" for Brits/Europeans, with a postscript that there are exceptions. "Economic" and "economical" have different meanings, as do "historic" and "historical". But Mary Ellen Kerans cautioned against assuming there is such a divide. Rather she championed idiosyncrasy as the culprit. Using the AntConc (freeware) concordancer (www.antlab.sci.waseda.ac.jp/software.html), she had found that "biological" occurs in American and in British journals, as do both forms in text written by American and British authors. "Biologic" is more common in the informal corpus of text from reputable web sites but "biological" is more frequent overall in the corpora. She thought there may be a tendency for "biological" to collate more often with words like "sample", "specimen" or "material", especially in scientific articles. What's more, wracking our brains could sometimes be avoided by abandoning the adjectives. For instance, in some sentences rephrasing to "changes in morphology" might work better than either "morphologic changes" or "morphological changes".

Norman Grossblatt confided that he had been preoccupied by the "ic/ical" question for over 35 years. He is no clearer about it now than he had been when this preoccupation began while he was editing the proceedings of a workshop on "electrical hazards in hospitals". "Electric" and "electrical" had been used inter- changeably in the text. His dictionaries assumed there was a difference but none explained what it was. Fowler's classic *Modern English Usage* advised that "ic" was preferable where words with these endings meant the same. The *CBE Style Manual*, which has become stronger in its recommendation of "ic" over the years, offered the same advice in its 1994 edition (CBE-6), instead of advising "biological, preferred to biologic" as it had in its 1960s editions. Norman concluded that there are three kinds of people when it comes to "biologic" versus "biological": those who think that using "biologic" is cool, those who think it's an outrage perpetrated on the English language, and those who have no idea what he is talking about. The whole affair had been the most irritating nuisance of his editorial career. "Biologic" itself was the chief offender. Authors who were unperturbed by "histologic" or "bacteriologic" would go crazy as soon as he used "biologic" or "botanic" in the same context. The usual argument against "biologic" was that people in the field would find it unprofessional or ignorant. Although he still makes "-ical"-to-"-ic" changes in manuscripts, he won't argue if authors want to change it back (after all, "scientists know best"). In sum, he wrote, "this is largely an editor's, not an author's or scientist's, problem; there seems to be no national or trans-Atlantic distinction; most authors don't care or aren't aware; and most authors who are adamant favor '-ical'." He added that perhaps half the world's major botanic(al) gardens (including some big ones in the United States and the UK) use "-ic" and half use "-ical" in their names.

Aleksandra Golebiowska was able to find an explanation at least for "electric/electrical" in the Collins COBUILD (Lingea Lexicon v. 3.1) dictionary. "Electric" is used before nouns when particular machines or devices that use electricity are referred to, e.g. an electric motor or electric fire. "Electrical" is used when talking in a more general way about machines, devices or systems which use or produce electricity. "Electrical" is typically used before nouns such as "equipment", "appliance", and "component", e.g. dishwashers, washing machines, electrical fittings. "Electrical" is also used to refer to people or organizations connected with the production of electricity or electrical goods, e.g. electrical engineers.

The unique Collins COBUILD dictionary, Mary Ellen Kerans added, reflects the principles of corpus linguistics. It contains entries based on evidence from the very large Bank of English corpus hosted by the University of Birmingham (www.titania.bham.ac.uk) and is useful for checking widespread usage in an objective way, although, because it comprises only highly frequently used words in English, it would not cover all questions in science editing.

In a postscript on the -ic/-ical pickle Joy Burrough-Boenisch mentioned that in the *New Fowler's Modern English Usage* Robert Burchfield added a nice piece about these suffixes, based on his experience as compiler of the *Oxford Dictionary*. Though he does not specifically refer to scientific(al?!) jargon, he discusses the patterns and idiosyncrasies of the suffixes and comes up with some useful conclusions. Joy also provided a web source about differences in American and British English (www.wordiq.com/definition/American_and_British_English_differences#Se).

Chuck Hollingworth, going back to Greek, saw it all as a question of using the proper formation of an adjective indicated by "al" from a noun ending in "ology". Furthermore, similar adjectives are constructed similarly, so living things are not normally referred to as "biologic" but rather "biological".

Plagiarism lost in translation?

Iain Patten presented this scenario. An author writes an article in a language other than English, say Spanish. In writing it he uses sources written in English. These he translates directly into Spanish with little distinction between the English author's thoughts and his own. A translator is then asked to translate the Spanish article into English and realizes that the exercise is becoming a back-translation. The original English articles have been cited in the Spanish article. Are there any issues here for the translator? Judy Baggott had encountered this problem with Italian authors. She would ask the author to supply the original text and "quote" it as such. Otherwise she would paraphrase the quote. Iain accepted this solution for something that lends itself to a quote but what if large sections had been cut-and-pasted, albeit translated into another language? Irene Hames had no doubt that this would be plagiarism. The authors should be contacted by the journal (not the translator) and an explanation requested. If the authors might not have appreciated that what they had done was unacceptable, they would need guidance on publishing practice and how to rewrite the review — or, if they were authors who should have known better, the journal would have to decide on the measures to be taken, depending on the authors' response.

Translators might be in a better position than reviewers to spot such iniquities. Mary Ellen Kerans pointed out that, although at one time experts in the field might have recognized plagiarized work through familiarity with all the literature in the field, there are so many journals now that this is no longer possible, added to which review articles are sometimes commissioned and here vigilance might be lower rather than higher.

Questionnaires: to back-translate or not to back-translate?

Mary Ellen Kerans presented another scenario regarding research conducted using a questionnaire that is well known in English. The researcher did not use the English version but translated it into the language of those questioned. The translated version was attached to the article as an appendix. Do readers want to see the original English version of the questionnaire or a back-translation reflecting the exact content?

If the questionnaire was not validated in its translated form, Iain Patten would expect to see the translated version used in the study provided in an appendix, with a reference to the questionnaire used for the translation. He felt that any back-translation verged on manipulating the materials used in the study. Providing the original would enable readers to make their own assessment of the validity of the material used and whether it was sufficiently faithful to the equivalent questionnaire in the other language (English in this case). Helen Burford on the other hand would back-translate the author's text and provide it in an appendix, using the author's title but pointing out (either in brackets after the title or as a footnote) that it was based on the original English questionnaire. This would acknowledge what the article owes to the original questionnaire, but would avoid any confusion if the findings reported in the article did not correspond to the questions asked in the original.

Patients' consent statement an irreducible minimum component?

Margaret Cooter wondered if, with the opportunity of longer articles published online being condensed in the print version, there is a temptation to save space by consigning some details such as the patients' consent statement to the longer version. Is patients' consent part of the irreducible minimum of components of a properly presented paper or is it something a journal needs to know happened (like compliance with CONSORT) but does not necessarily publish? In short reports Liz Wager tends to remove statements that drug industry trials comply with Good Clinical Practice and/or the Declaration of Helsinki, on the basis that readers should feel confident that the journal has checked compliance but do not necessarily need a reference to it. Jeremy Theobald thought that, like a conflict of interest statement, readers must know and trust that the authors have provided such information but do not need to see it in the manuscript if space is limited. A general statement in the journal to this effect would suffice.

Joining the forum

You can join the forum by sending the one-line message "subscribe ease-forum" (without the quotation marks) to majordomo@helsinki.fi. More information can be found on the EASE web site (www.ease.org.uk).

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Book reviews

Elizabeth Wager. 2005. **Getting research published: an A to Z of publication strategy**. Oxford: Radcliffe Publishing Ltd. Paperback 138 p. GBP21.95. ISBN 1-85775-687-8.

There is a prevailing view of medical publishing, espoused by some of the more extreme Cochranistas, that it is a largely neutral activity carried out by high-minded researchers for the benefit of humankind. There are one or two faults with the system (so the argument goes), but these can be eliminated by a bit of evidence-based tinkering here and there, such as early registration of trials and conflict-of-interest statements. Ultimately reason will triumph and a system will emerge that is fair, objective and beyond reproach.

An alternative view, which I must confess I find more seductive, is that the good intentions of medical publishing have foundered on self-interest. Publishers are in it to make large amounts of money. Researchers are in it to keep their jobs and grow their departments. Pharmaceutical companies are in it to sell their products. Citation (and the power and benefits resulting therefrom) has eclipsed communication as the primary goal.

For those who sympathize with the latter position, Elizabeth Wager's book is a godsend. It starts with the assumption that if you want to get published and don't have influential friends, you don't have a chance without good information and a sound plan.

The format is unusual. As Wager writes, one of the problems with an A–Z is that people often find it difficult to know what to look up. She therefore starts with five chapters giving an overview of the various stages that authors need to go through, which introduces the reader to the various concepts that appear elsewhere (in bold) in the book.

There are 92 pages of entries, from Abstracts to Zealots and Assassins (a neat solution to that troublesome last letter), passing on the way such varied concepts as the "big five", copyright, data dredging, ghost authors, hot topics and personal communications.

There is plenty of good information, mixed with sound advice. Have clear plans and communicate them to other people. Identify your message at an early stage and choose your target journal wisely. Spell the editor's name correctly, and make sure you have references to your target journal. If you make an appeal about your rejected article, "do not spend so much energy . . . that you have none left to implement your back-up plan."

I have one or two minor quibbles, and using Wager's recommended route to the EASE web site sent me instead to a picture of a charming Swedish homestead with assorted farmyard animals. But since the overall messages are similar to those I have been expounding for years, mentioning my quibbles here would put me in Wager's useful (but unwelcome) category of nitpicker.

Wager's great contribution is that, as the blurb signals, information about publishing is scattered and some conventions seem never to have been written down (curiously, bearing in mind the protagonists' usual obsession with "evidence"). This oral tradition has been one reason why newcomers and outsiders have found it so difficult to break into the system and get their papers published.

Knowledge is power. Subvert the system. Buy the book. Put it with the other reference books on your desk. And use it to get published.

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John Seely. 2005. **Oxford guide to effective writing and speaking**, 2nd ed. Oxford University Press. viii + 312 p. Paperback. GBP11.99. ISBN 0-19-280613-0.

This guide was first published in 1998. Most changes in the new edition are small updates, but there is a new chapter on e-mails, and the chapter on job applications has been revised to acknowledge changes in modern practice.

John Seely's focus is on the overall process of communication, not just on the handling of English. The book begins with an overview of what happens in an act of communication, emphasizing five factors that influence the effectiveness of the act: the speaker/writer, the situation, the chosen format, the language used, and the audience/readers. He then examines each of these factors in turn, discussing how to think about aim, audience, and context, about various modes of communication such as business letters, essays, reports, and presentations, about sensitive choice of language, and about tactics for preparing written and spoken presentations.

Each chapter begins with a summary of the points that will be made. A detailed discussion of those points is then followed by a "You Try" box, which invites readers to practise using the advice in the main discussion. The main points of the chapter are then reiterated in a list of "Guidelines", and the chapter ends with a "Key" to the material in the You Try box.

Since most readers of *ESE* are (I assume) professionally engaged in writing and editing, most of the advice will be familiar to them, and some sections, such as the advice on interviews, organizing meetings, or dealing with "The media" will be of marginal use. Nevertheless, Seely's book is refreshing in layout and tone, and the marginal sections will be surplus to requirements but not unhelpful. The very good chapter on presentations will be useful even to people whose work routinely involves giving talks, if only for his warning against inept use of Microsoft™ PowerPoint.

The chapter on e-mails is a valuable resource that contains some useful warnings. The author urges us to be careful about accuracy and tone in messages composed hastily, and this comment should be pinned up in every editorial office: "There is a strange theory that in emails spelling, punctuation, and grammar do not matter. The fact is that many people will judge you by these external signs, just as they do in letters or speech, so there is no reason to be slack just because it's an email."

In his section on different ways of communicating, Seely discusses narrative, description, exposition, and argument, but ignores instruction. That is an unfortunate omission for readers concerned with scientific protocols and procedures.

Who is the book aimed at? (I think Seely would allow that *who*.) There is no statement at the start, and by the time I had finished reading it I was still unsure. Much of the content, such as the chapters on planning and research, and on writing, drafting, and revising, is elementary, and the chapters on the English language assume little background knowledge. Overall, therefore, though the book might be helpful to people faced with their first professional writing tasks, I think it would not be a high priority purchase for readers of *ESE.*

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Neil M Davis. 2005. **Medical abbreviations: 26,000 conveniences at the expense of communication and safety,** 12th ed. Warminster, PA: Davis Associates. viii + 472 p. USD24.95/GBP13.61. ISBN: 0931431123

Medical abbreviations seems to contain a contradiction in terms. It provides a very large number of medical abbreviations, laboratory values, numbers and symbols — enlarged from the 1700 included in the first edition — and their meanings (sometimes many different meanings). This might lead you to suppose that the author is keen to expand our knowledge and use of such abbreviations. However, the subtitle and the whole of chapter 2, entitled "Dangerous, contradictory, and/or ambiguous abbreviations", implies just the opposite.

A meaning can be found for almost any combination of letters in medicine, it seems to me. Some of the "meanings" included here seem to be contrived and some of the obvious ones that I come across every day are missing. For instance, CE is, in the UK, a commonly occurring abbreviation for conjugated estrogen; the term is not included in this text: CES is given instead, for conjugated estrogen substance — not something I have come across in medical texts here. CE in this book has 17 meanings — one of them being "continuing education"; I would expect to find CME — continuing medical education.

Perhaps this illustrates perfectly the best reason for writing something in full instead of using an abbreviation: you can never guarantee that the person reading the text has the same set of contexts as the author; so misunderstanding may result. Writing with abbreviations is always sheer laziness and should never be encouraged. If they are used, there must be a clear and comprehensive list of all the abbreviations used in the text, with the meaning of the abbreviation in that context.

I have been using this book alongside my UK-published book of medical abbreviations for the last month or so. It has been interesting to see the variations and I have found that it is very handy to have a US-based set of abbreviations for when I am editing texts originating in the States.

If you buy the book, you are also entitled to a single-user licence for access to the internet version of the book. This is a valuable addition. The site is updated monthly and the search facility works well.

I don't think that I would buy this book as my sole resource for abbreviations, as it is very much a US-biased publication. However, it is a valuable addition to the library of any editor who works with US texts on a regular basis.

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Sean Brennan. 2005. **The NHS IT Project: the biggest computer programme in the world . . . ever!** Oxford: Radcliffe Publishing. 225 p. GBP29.95. ISBN:1-85775-732-7.

The very ambitious plan to record, eventually, all the activities of the National Health Service in the UK as electronic records is the subject of this book. If this huge project can be done effectively, the advantages will be great: good quality information for management generated by staff involved at the time the work is done, saving of time spent searching for missing records and reports, timely reports available to hospital and general practice staff, decision support software for functions such as choosing drug treatments and reducing dispensing mistakes, assistance with the problems associated with the "fat file" (so thick that it is hard to find any relevant notes and easy to miss significant ones), and much else.

The content consists of hopes for the future and detailed historical accounts of past projects, successful and unsuccessful, and then proceeds to electronic records and an explanation of the tasks that the main project aims to realize, with brief outlines of the decisions already taken. The intended readership includes NHS managers, health care workers and anyone else who may be interested. The book is written in a lively style that will suit all categories.

The book is a well presented paperback, with 15 chapters, a glossary and an index, references and citations, and four appendices. The illustrations are sparse, monochrome and nearly all diagrams; there are no tables, but the language is very accessible and interesting. The paper quality and size is pleasant in the hand, the font is large enough for clear reading, and the binding is fairly sturdy.

The author began his career as a Medical Scientific Laboratory Officer and has had several senior NHS appointments that are relevant to aspects of the NHS IT Project. His depth of knowledge is impressive; I saw very few factual errors. He knows that such a large project must be subdivided and that not every part will be solved successfully first time. Brennan may be over-optimistic, but over 20–30 years a lot of progress has been made and it seems unreasonable to be entirely gloomy about eventual success. He describes very interesting successful past projects. I am sure that hospital managements have benefited greatly from many of these and others are already clinically apparent. A recent article by Drummond et al. about patients in a study of care after stroke, who had been followed up at five years after entry and again at ten years, said: "Improvements in databases [hospital and general practice] meant that more participants were identified at 10 years than at five years" (Drummond AER, Pearson B, Lincoln NB, Berman P. 2005. Ten year follow-up of a randomised controlled trial of care in a stroke rehabilitation unit. BMJ 331:491–492). Readers whose general practice has electronic records will have noticed that short consultations with first one and then another doctor in a group practice are much more satisfactory than they used to be, because the information gleaned at the first consultation is presented clearly and usefully on the screen to the second doctor.

Participants in an earlier NHS project were inclined to be confused by the copious acronyms and abbreviations, often without explanations. This book is no exception — neither the glossary nor the index is comprehensive.

The book meets the author's aims well. The project is developing and, as parts are still exploratory, the book will not remain completely up-to-date, but some of the accounts of past projects offer encouraging counter examples to compare with the failures that we read about in the newspapers. At nearly £30 the book is expensive for a 225-page paperback, much of which will soon become obsolete, so I hesitate to recommend it as an addition to the personal library. However, the price seems to be within the going rate for this type of publication; so perhaps hospital libraries could afford a copy.

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Larger version of Fig. 1 in the Viewpoint by Ana and Matko Marusic in *European Science Editing* 2005;31(3):81–83.

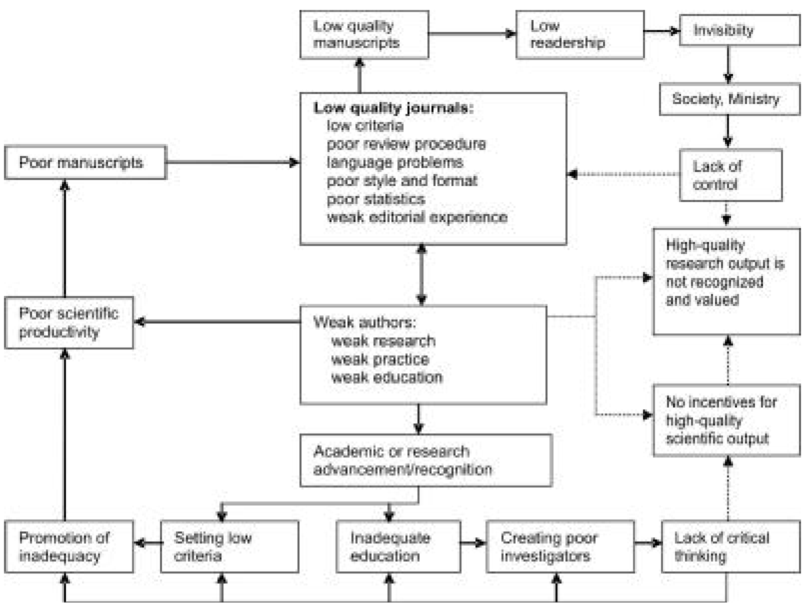

Fig. 1. Low quality scientific journals as the central factor in perpetuating low quality criteria in a scientific community. Dotted lines represent inhibitory loops. (Marusic M, Marusic A. 2001. Good editorial practice: editors as educators. Croatian Medical Journal 42(2):113–120)