misunderstanding. This inefficiency and misunderstanding is increased when people from different cultures try to communicate. Non-native speakers of English make many typical errors in scientific writing – for example, they commonly write complicated sentences and then translate them literally, preserving the original sentence structure, so the outcome is incomprehensible. Moreover, they often do not realize that there are semantic differences between words that seem to be equivalent (the so-called false friends). Numerous manuscripts contain long digressions or repetitions, but fail to provide important details: these may be acceptable in some cultures but have no place in modern English science articles.

Many authors ask translators for help, but in all too many situations the translators have insufficient scientific knowledge to convey the message properly.[1] The authors lack sufficient knowledge of English to be aware of this, which closes the vicious circle. Journals publish guidelines for authors, and these may be short or extensive. Short instructions assume authors have experience in preparing scientific papers. Long instructions are hard for authors whose English is poor to understand. In both cases, authors may submit poorly prepared articles that require frequent revisions, most of which are concerned with the writing style and organization of the paper rather than the science itself. This wastes the time of authors, editors and reviewers.

For these reasons, I came to the conclusion that in order to promote research integrity successfully, we need to publicize the most important editorial guidelines for authors and translators of scientific articles to be published in English in many different languages. Authors and translators should fully understand and be familiar with the guidelines before they start writing.

Popularization of the guidelines can bring many benefits:

- researchers will understand editors better and spend less time on revising manuscripts;
- translators will be able more effectively to translate/edit scientific texts to be published in English;
- science editors will have more time to focus on the accuracy and scientific validity of submissions;
- editors and translators will be able to refer to the guidelines if authors object to their corrections (this is particularly important in countries where editors are not duly respected).

All this should facilitate and standardize the editorial process – consequently, international scientific communication will be more efficient. Last, but not least, the visibility of EASE will increase, particularly in non-Anglophone countries, giving more editors the opportunity of joining and of benefiting from all EASE's educational and networking activities.

In April 2009, I presented draft guidelines for authors on the EASE Forum. Some EASE members discussed the draft on the Forum, and we continued the discussion at the EASE conference in Pisa. All comments were very welcome and appreciated. The final version of the guidelines was approved by the EASE Council in February 2010. These are now displayed on the EASE website.

We have started to send links to the guidelines to scientific institutions worldwide and to promote the guidelines in the scientific community in other ways. All EASE members can help in their popularization, by including links to the guidelines on their journals' websites and asking authors to read the guidelines before submission. In the future, feedback from the scientific community may aid in refining and updating the guidelines. We are also planning to add appendices and useful links to the guidelines, to explain selected issues more precisely (within the Author Toolkit being prepared by EASE).

The next step is for these guidelines to be carefully translated into other languages. I encourage all volunteers interested in participating to get in touch with me. I would like to thank everyone who has contributed to the guidelines or supported this idea in other ways. I hope that you will continue to support the project and help to popularize the EASE guidelines in your countries. This will be crucial for their effectiveness.

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Effective presentation of data

In this age of mass communication and debate of complex scientific issues, it is vital to present data clearly, accurately, and so to provide maximum impact. Ehrenberg claimed almost 30 years ago that most data were badly presented,[1] and his words are just as relevant today. A common fault is the use of too many digits in tabulated data, which makes the numbers difficult to compare. For example, the three decimal digits in 214.465 and 241.645 neither facilitate comparison of the two numbers nor take any part in it; these are non-effective digits for this comparison. Ehrenberg therefore proposed that all numbers for presentation be rounded to just two or three effective digits – that is, those governing the major variation in the data.[2]

Sometimes, however, more exact values are desirable, for example when presenting data on official statistics, but such data are difficult to assimilate when they consist of numbers with many digits. To provide a clear data presentation and precise reporting of numbers, we need to emphasize the most important digits while still presenting some of the less important digits, albeit in a less prominent way.

The method we propose involves two font amendments: to reduce the size of the less important ("minor") digits while keeping unchanged the size of the most important, ("major") digits; and to italicize the minor digits. Font reduction has been used to present standard errors and confidence intervals[3,4]; we are here extending and strengthening it for more general comparison of data values. Consider the four numbers in column on the left below, which we wish to represent using two major digits. The middle column shows the minor digits with reduced font, and the column on the right shows them with both reduced and italicized font.

987.2	987.2	9*87.2*
3563.2	3563.2	35*63.2*
3599.9	3599.9	35*99.9*
4563.0	4563.0	45*63.0*

We believe that italicizing minor digits improves the presentation because of the additional distinction between the minor and major digits, so we consider this to be the optimal presentation. Note that "major digits" include any leading zeros implied by the size of the other data values. Thus 987.2 is in effect 0987.2, so has just the one major digit 9 – but had all data values consisted of three non-decimal digits then it would have the two major digits 9 and 8.

There is a particular advantage when there are no non-zero major digits, as for example with the two numbers: 0.099 and 0.012. Since the difference between the numbers lies in the minor digits, for comparison purposes the values may be considered roughly equal. However, they both differ from zero, and this information is easily caught by eye from the minor digits. We believe this to be preferable to rounding, in which for example 0.051 and 0.049 would respectively become 0.1 and 0.0, suggesting a bigger difference than actually exists.

By way of illustration, consider the populations of Poland's provinces on 30 June 2007, taken from the Polish Central Statistical Office web page (http://www.stat.gov.pl), shown in the table below. The values are presented in four ways: as exact numbers; in millions rounded to two decimal digits; in millions presented with three major digits (Version 1 of the proposed technique); and in millions rounded to two major and two minor digits (Version 2).

The numbers in column 1 are large, and difficult to compare, despite being arranged in decreasing order. The values in column 2 are much better for comparison purposes, but up to 5000 units of information on the populations can be lost (4942 units for the Łódzkie Voivodship, for example). Up to twice this amount of information can be lost when comparing two numbers (7926 units for the difference in the populations of the Łódzkie and Pomorskie Voivodships). Note that using only two effective digits (as Ehrenberg claimed was best[2]) gives potential losses of 50,000 units in a single number and 100,000 units when comparing two numbers! We would therefore favour using Version 1, as this is the presentation that provides exact values while still facilitating the number comparison, but for a simpler summary Version 2 would be acceptable.

There is, of course, much room for subjectivity with any visual presentation, but we would argue that there are better ways of presenting data than just by rounding values, and what we propose is one possible way of doing this.

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	Population			
			Using technique proposed (in millions)	
Province	**In units**	**In millions**	**Version 1**	**Version 2**
Mazowieckie	5,170,786	5.17	5.17*0786*	5.17*08*
Śląskie	4,662,615	4.66	4.66*2615*	4.66*26*
Wielkopolskie	3,377,725	3.38	3.37*7725*	3.37*77*
Małopolskie	3,260,358	3.26	3.26*0358*	3.26*04*
Dolnośląskie	2,877,519	2.88	2.87*7519*	2.87*75*
Łódzkie	2,565,058	2.57	2.56*5058*	2.56*51*
Pomorskie	2,202,984	2.20	2.20*2984*	2.20*30*
Lubelskie	2,175,325	2.18	2.17*5325*	2.17*53*
Podkarpackie	2,106,259	2.11	2.10*6259*	2.10*63*
Kujawsko-Pomorskie	2,066,440	2.07	2.06*6440*	2.06*64*
Zachodniopomorskie	1,691,059	1.69	1.69*1059*	1.69*11*
Warmińsko-Mazurskie	1,429,670	1.43	1.42*9670*	1.42*97*
Świętokrzyskie	1,285,101	1.29	1.28*5101*	1.28*51*
Podlaskie	1,197,483	1.20	1.19*7483*	1.19*75*
Opolskie	1,038,204	1.04	1.03*8204*	1.03*82*
Lubuskie	1,009,381	1.01	1.00*9381*	1.00*94*