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REVIEW

EASE Guidelines for Authors and Translators of Scientific Articles to be Published in English

European Association of Science Editors (EASE)

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ABSTRACT

This concise and readable set of editorial guidelines was first published by the European Association of Science Editors (EASE) in 2010 and is updated annually. It is freely available in more than 20 languages at <http://ease.org.uk/publications/author-guidelines>. The document is aimed to help scientists worldwide in successful presentation of their research results and in correct translation of manuscripts into English. Moreover, it draws attention to ethical issues, like authorship criteria, plagiarism, conflict of interests, etc. Eight appendices provide examples or more detailed information on selected topics (Abstracts, Ambiguity, Cohesion, Ethics, Plurals, Simplicity, Spelling, and Text-tables). Widespread use of EASE Guidelines should increase the efficiency of international scientific communication.

Key words: EASE Guidelines, scientific communication, scientific translation, publication ethics.

To make international scientific communication more efficient, research articles and other scientific publications should be COMPLETE, CONCISE, and CLEAR, as explained below. These are generalized but not universal guidelines, intended to help authors, translators, and editors. Common sense is necessary when applying these rules, as perfection is impossible to reach.

First of all:

- **Carefully plan and conduct your study** (e.g. Hengl et al. 2011). Do not begin drafting the whole paper until you are sure that your findings are reasonably firm and complete (O'Connor 1991), allowing you to draw **reliable conclusions**.
- Before you start writing, **preferably choose the journal** to which you will submit your manuscript. Make sure that the journal's readership corresponds to your target audience (Chipperfield et al. 2010). Get a copy of the journal's instructions to authors and plan the article to fit the journal's preferred format in terms of overall length, number of figures required/allowed, etc.

Manuscripts should be COMPLETE, i.e. no necessary information should be missing. Remember that **information is interpreted more easily if it is placed where readers expect to find it** (Gopen & Swan 1990). For example, the following information ought to be included in experimental research articles.

- **Title:** should be unambiguous, understandable to specialists in other fields, and reflect the con-

tent of the article. Be specific, not general or vague (O'Connor 1991). If relevant, mention in the title the study period and location, the international scientific name of the studied organism or the experimental design (e.g. case study or randomized controlled trial). Information given in the title does not need to be repeated in the abstract (as they are always published jointly), although overlap is unavoidable.

- **List of authors**, i.e. all people who contributed substantially to study planning, data collection or interpretation of results **and** wrote or critically revised the manuscript **and** approved its final version and agree to be accountable for all aspects of the work (ICMJE 2013). The authors listed first should be those who did most. Names of authors must be supplemented with their **affiliations** (during the study) and the **present address** of an author for correspondence. E-mail addresses of all authors should be provided, so that they can be contacted easily.
- **Abstract:** briefly explain why you conducted the study (BACKGROUND), what question(s) you aimed to answer (OBJECTIVES), how you performed the study (METHODS), what you found (RESULTS: major data, relationships), and your interpretation and main consequences of your findings (conclusions). The abstract must **reflect the content** of the article, as for most readers it will be the major source of information about your study. You must **use all**

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keywords within the abstract, to facilitate on-line searching for your article by those who may be interested in your results (many databases include only titles and abstracts). In a **research report**, the abstract should be **informative**, including actual results. Only in **reviews**, meta-analyses, and other wide-scope articles, should the abstract be **indicative**, i.e. listing the major topics discussed but not giving outcomes (CSE 2014). Do not refer in the abstract to tables or figures, as abstracts are also published separately. References to the literature are also not allowed unless they are absolutely necessary (but then you need to provide detailed information in brackets: author, title, year, etc.). Make sure that all the information given in the abstract also appears in the main body of the article. (See *Appendix: Abstracts*)

- **List of additional keywords** (if required by the editors): include all relevant scientific terms that are absent from the title and abstract. Keep the keywords specific. Add more general terms if your study has interdisciplinary significance (O'Connor 1991). In medical texts, use vocabulary found in the MeSH Browser.
- **List of abbreviations** (if required by the editors): define all abbreviations used in the article, except those obvious to non-specialists.
- **Introduction:** explain why the study was needed and specify your **research objectives** or the question(s) you aimed to answer. Start from more general issues and gradually focus on your research question(s).
- **Methods:** describe in detail how the study was carried out (e.g. study area, data collection, criteria, origin of analysed material, sample size, number of measurements, age and sex of participants, equipment, data analysis, statistical tests, and software used). All factors that could have affected the results need to be considered. Sources of experimental materials obtained from biobanks should be mentioned with full names and identifiers, if available (Bravo et al. 2013). If you cite a method described in a non-English or inaccessible publication, explain it in detail in your manuscript. Make sure that you comply with the ethical standards (e.g. WMA 2013) in respect of patient rights, animal testing, environmental protection, etc.
- **Results:** present the new results of your study (usually published data should not be included in this section). All tables and figures must be mentioned in the main body of the article, and numbered in the order in which they appear in the text. Make sure that the statistical analysis is appropriate (e.g. Lang 2004). Do not fabricate or distort any data, and do not exclude any important data; similarly, do not manipulate images to make a false impression on readers. Such data manipulations may constitute scientific fraud (see COPE flowcharts).
- **Discussion:** answer your research questions (stated at the end of the Introduction) and compare your new results with published data, as objectively as possible. Discuss their limitations and highlight your main findings. Consider any findings that run contrary to your point of view. To support your position, use **only methodologically sound evidence** (ORI 2009). At the end of the Discussion or in a separate section, emphasize your major conclusions and the practical significance of your study.
- **Acknowledgements:** mention all people who contributed substantially to the study but cannot be regarded as co-authors, and acknowledge all sources of funding. The recommended form is: "This work was supported by the Medical Research Council [grant number xxxx]". If no specific funding was provided, use the following sentence: "This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors" (RIN 2008). If relevant, disclose to the editors any other conflicts of interest, e.g. financial or personal links with the manufacturer or with an organization that has an interest in the submitted manuscript (Goozner et al. 2009). If you reproduce previously published materials (e.g. figures), ask the copyright owners for permission and mention them in the captions or in the acknowledgements. If you were helped by a language professional (e.g. author's editor or translator), a statistician, data collectors, etc., you should acknowledge their assistance for the sake of transparency (ICMJE 2013, Graf et al. 2009). It must be clear that they are not responsible for the final version of the article. You need to ensure you have the consent of all the people named in this section. (See *Appendix: Ethics*)
- **References:** make sure that you have provided sources for all information extracted from other publications. In the list of references, include all data necessary to find them in a library or in the Internet. For non-English publications, give the **original title** (transliterated according to English rules if necessary), wherever possible followed by its translation into English in square brackets (CSE 2014). Avoid citing inaccessible, coercive and irrelevant references. Wherever appropriate, cite primary research articles instead of reviews (DORA 2013). Do not include unpublished data in the list of references—if you must mention them, describe their source in the main body of the article, and obtain permission from the producer of the data to cite them.
- **A different article structure** may be more suitable for theoretical publications, review articles, case studies, etc. (e.g. Gasparyan et al. 2011).
- Some publications include also an abstract or a longer **summary in another language**. This is very useful in many fields of research.
- Remember to comply with the **journal's instructions to authors** in respect of abstract length, style of references, etc.

Write **CONCISELY** to save the time of referees and readers.

- **Do not include information that is not relevant to your research question(s)** stated in the Introduction.
- **Do not copy** parts of your previous publications and do not submit the same manuscript to more than one journal at a time. Otherwise, you may be responsible for **redundant publication** (see COPE flowcharts). This does not apply to preliminary publications, such as conference abstracts (O'Connor 1991, see also BioMed Central policy). Moreover, **secondary publications** are acceptable if intended for a completely different group of readers (e.g. in another language or for specialists and the general public) and you have received approval from the editors of both journals (ICMJE 2013). A reference to the primary publication must then be given in a footnote on the title page of the secondary publication.
- Information given in one section preferably **should not be repeated** in other sections. Obvious exceptions include the abstract, the figure legends, and the concluding paragraph.
- Consider whether all tables and figures are necessary. Data presented in tables should not be repeated in figures (or vice versa). Long lists of data should not be repeated in the text.
- Captions to tables and figures must be **informative but not very long**. If similar data are presented in several tables or several figures, then the format of their captions should also be similar.
- Preferably **delete obvious statements** (e.g. "Forests are very important ecosystems") and other redundant fragments (e.g. "It is well known that...").
- If a **long scientific term** is frequently repeated, define its abbreviation at first use in the main body of the article, and later apply it consistently.
- Express your doubts if necessary but **avoid excessive hedging** (e.g. write "are potential" rather than "may possibly be potential"). However, do not overgeneralize your conclusions.
- Unless required otherwise by the editors, **use numerals for all numbers**, i.e. also for one-digit whole numbers, **except for zero, one** (if without units), **and other cases where misunderstanding is possible**, e.g. at the beginning of a sentence or before abbreviations containing numbers (CSE 2014).

Write **CLEARLY** to facilitate understanding – make the text readable.

Scientific content

- **Clearly distinguish your original data and ideas** from those of other people and from your earlier publications—provide citations whenever relevant. **Preferably summarize or paraphrase** text from other sources. This applies also to translations. When copying text literally (e.g. a whole sentence

or longer text), put it in inverted commas (e.g. ORI 2009, Kerans & de Jager 2010). Otherwise you could commit **plagiarism** (see COPE flowcharts) or self-plagiarism.

- Make sure that you are using **proper English scientific terms**, preferably on the basis of texts written by native English speakers. Literal translations are often wrong (e.g. so-called *false friends* or non-existent words invented by translators). If in doubt, **check the definition** in an English dictionary, as many words are used incorrectly (e.g. *trimester* with reference to animal pregnancy, see Baranyiova 1998). You can also search for a word or phrase in Wikipedia, for example; then compare the results in your native language and in English, and see if the meaning of putative equivalents is truly the same. However, Wikipedia is not always a reliable source of information.
- If a word is used mostly in translations and only rarely in English-speaking countries, consider replacing it with a commonly known English term with a similar meaning (e.g. *plant community* instead of *phytocoenosis*). If a scientific term has no synonym in English, then define it precisely and suggest an acceptable English translation.
- **Define every uncommon or ambiguous scientific term** at first use. You can list its synonyms, if there are any (to aid in searching), but later employ only one of them consistently (to prevent confusion). Formal nomenclature established by scientific organizations should be preferred (e.g. EASE 2013).
- **Avoid unclear statements**, which require the reader to guess what you meant. (*See Appendix: Ambiguity*)
- When reporting percentages, make clear **what you regard as 100%**. When writing about correlations, relationships, etc., make clear which values you are comparing with which.
- **Système International (SI) units and Celsius degrees** are generally preferred.
- Unlike many other languages, English has a **decimal point** (not comma). In numbers exceeding 4 digits to the right or left of the decimal point, use thin spaces (not commas) between groups of 3 digits in either direction from the decimal point (EASE 2013).
- To denote centuries, months, etc., **do not use capital Roman numerals**, as they are rare in English. Because of differences between British and American date notation (see below), preferably denote months as whole words or their first 3 letters (CSE 2014).
- If lesser known **geographic names** are translated, the original name should also be mentioned if possible, e.g. "in the Kampinos Forest (Puszcza Kampinowska)". Some additional information about location, climate, etc., may also be useful for readers.
- Remember that the text will be **read mainly by foreigners**, who may be unaware of the specif-

ic conditions, classifications or concepts that are widely known in your country; therefore, addition of some explanations may be necessary (Ufnalska 2008). For example, the common weed *Erigeron annuus* is called *Stenactis annua* in some countries, so in English texts the internationally approved name should be used, while its synonym(s) should be added in brackets.

Text structure

- **Sentences generally should not be very long. Their structure should be relatively simple**, with the subject located close to its verb (Gopen & Swan 1990). For example, avoid abstract nouns and write “X was measured...” instead of “Measurements of X were carried out...” (See Appendix: *Simplicity*) Do not overuse passive constructions (e.g. Norris 2011). When translating, modify sentence structure if necessary to convey the message correctly or more clearly (Burrough- Boenisch 2013).
- **The text should be cohesive, logically organized**, and thus easy to follow. (See Appendix: *Cohesion*)
- Each paragraph preferably should start with a topic sentence, and the next sentences fully develop the topic.
- In contrast to some other languages, English allows parallel constructions, as they facilitate understanding. For example, when comparing similar data, you can write “It was high in A, medium in B, and low in C” rather than “It was high in A, medium for B, and low in the case of C”
- **Make figures and tables easily understandable** without reference to the main body of the article. Omit data that are not informative (e.g. delete a column if it contains the same values in all rows—you can write about it in a footnote instead). Apply abbreviations only if necessary for consistency or if there is not enough room for whole words. In captions or footnotes, define all abbreviations and symbols that are not obvious (e.g. error bars may denote standard deviation, standard error or confidence intervals). **Remember to use decimal points** (not decimal commas) and **provide axis labels and units** wherever needed.
- Consider using a **text-table** when presenting a small set of data (Kozak 2009). (See Appendix: *Text-tables*)
- In long lists (of abbreviations, etc.), preferably separate individual items by **semicolons** (;), which are intermediate between commas and full stops.

Language matters

- Wherever scientific terms are not necessary, preferably use **commonly known words**. However, avoid colloquial and idiomatic expressions, as well as phrasal verbs, (e.g. *find out*, *pay off*), which are often difficult to understand by non-native speakers of English (Geercken 2006).
- **Define abbreviations** when they first appear in the main body of the article (if they may be unclear to readers). **Do not use too many different**

abbreviations, as the text would be hard to understand. Do not abbreviate terms that are used only rarely in your manuscript. **Avoid abbreviations in the abstract.**

- In general, use the **past tense** when describing how you performed your study and what you found or what other researchers did. Preferably use the **present tense** in general statements and interpretations (e.g. statistical significance, conclusions) or when writing about the content of your article, especially tables and figures (Day & Gastel 2006).
- Unless required otherwise by the editors, **do not write about yourself “the author(s)”**, as this is ambiguous. Instead, write “we” or “I” if necessary, or use expressions like “in this study”, “our results” or “in our opinion” (e.g. Hartley 2010, Norris 2011). Note that you should write “this study” only if you mean your new results. If you mean a publication mentioned in a previous sentence, write “that study”. If you mean authors of a cited publication, write “those authors”.
- Remember that in scientific texts the word **“which”** should be used in non-defining clauses, while “that” in defining clauses (i.e. meaning “only those that”).
- When using **equivocal words**, make sure that their meaning is obvious from the text context. Check if all **verbs agree in number with their subjects** and if **the references for all pronouns are clear** (this is crucial in translated texts). Note that some nouns have **irregular plurals**. (See Appendix: *Plurals*)
- Read the text aloud to check punctuation. All **intonation breaks** necessary for proper understanding should be denoted with commas or other punctuation marks (e.g. note the difference between “no more data are needed” and “no, more data are needed”).
- Be **consistent in spelling**. Follow either British or American rules for spelling and date notation (e.g. “21 Jan 2009” in British, or “Jan 21, 2009” in American English; see Appendix: *Spelling*). Check whether the target journal uses American or British spelling, and then use that setting on your word and grammar check.
- Ask a thoughtful colleague to read the whole text, to see if there are any ambiguous fragments.

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Appendix: Abstracts

European
Association of
Science
Editors



Key elements of abstracts

Researchers are quite often in a “box” of technical details – the “important” things they focus on day in and day out. As a result, they frequently lose sight of 4 items essential for any readable, credible, and relevant IMRaD¹ article: the point of the research, the research question, its answer, and the consequences of the study.

To help researchers to get out of the box, I ask them to include 5 key elements in their article and in their abstract. I describe briefly the elements below and illustrate them with a fictitious abstract.

Key element 1 (BACKGROUND): the point of the research – why should we care about the study? This is usually a statement of the BIG problem that the research helps to solve and the strategy for helping to solve it. It prepares the reader to understand the specific research question.

Key element 2 (OBJECTIVES): the specific research question – the basis of credible science. To be clear, complete and concise, research questions are stated in terms of relationships between the variables that were investigated. Such specific research questions tie the story together – they focus on credible science.

Key element 3 (METHODS): a precise description of the methods used to collect data and determine the relationships between the variables.

Key element 4 (RESULTS): the major findings – not only data, but the RELATIONSHIPS found that lead to the answer. Results should generally be reported in the past tense but the authors’ interpretation of the factual findings is in the present tense – it reports the authors’ belief of how the world IS. Of course, in a pilot study such as the following example, the authors cannot yet present definitive answers, which they indicate by using the words “suggest” and “may”.

Key element 5 (CONCLUSIONS): the consequences of the answers – the value of the work. This element relates directly back to the big problem: how the study helps to solve the problem, and it also points to the next step in research.

Here is a fictitious example.

Predicting malaria epidemics in Ethiopia

Abstract

BACKGROUND Most deaths from malaria could be prevented if malaria epidemics could be predicted in local areas, allowing medical facilities to be mobilized early. **OBJECTIVES** As a first step toward constructing a predictive model, we determined correlations between meteorological factors and malaria epidemics in Ethiopia. **METHODS** In a retrospective study, we collected meteorological and epidemic data for 10 local areas, covering the years 1963-2006. Poisson regression was used to compare the data. **RESULTS** Factors AAA, BBB, and CCC correlated significantly ($P<0.05$) with subsequent epidemics in all 10 areas. A model based on these correlations would have a predictive power of about 30%. **CONCLUSIONS** Meteorological factors can be used to predict malaria epidemics. However, the predictive power of our model needs to be improved and validated in other areas.

This understandable and concise abstract forms the “skeleton” for the entire article. A final comment: This example is based on an actual research project and, at first, the author was in a “box” full of the mathematics, statistics, and computer algorithms of his predicting model. This was reflected in his first version of the abstract, where the word “malaria” never appeared.

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(for more information, see Bless and Hull 2008)

¹ IMRaD stands for Introduction, Methods, Results and Discussion.

Appendix: Ethics

European Association of Science Editors



Publication ethics checklist for authors

EXPLANATION: obligatory declarations applying to all manuscripts are printed in bold.

Original or acceptable secondary publication

- No part of this manuscript (MS) has been published, except for passages that are properly cited.
- An abstract/summary of this MS has been published in.....
- This MS has already been published in but in language. A full citation to the primary publication is included, and the copyright owner has agreed to its publication in English.
- No part of this MS is currently being considered for publication elsewhere.**
- In this MS, original data are clearly distinguished from published data. All information extracted from other publications is provided with citations.**

Authorship

- All people listed as authors of this MS meet the authorship criteria, ie they contributed substantially to study planning, data collection or interpretation of results *and* wrote or critically revised the MS *and* approved its final submitted version *and* agree to be accountable for all aspects of the work (ICMJE 2013).
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- The study reported in this MS involved human participants and it meets the ethical principles of the Declaration of Helsinki (WMA 2013). Data have been disaggregated by sex (and, whenever possible, by race).
- The study reported in this MS meets the Consensus Author Guidelines on Animal Ethics and Welfare for Veterinary Journals² about humane treatment of animals and has been approved by an ethical review committee.
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- Results of this study have been interpreted objectively. Any findings that run contrary to our point of view are discussed in the MS.
- The article does not, to the best of our knowledge, contain anything that is libellous, illegal, infringes anyone’s copyright or other rights, or poses a threat to public safety.

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Conflict of interest

- All authors of this study have signed a conflict of interest statement and disclosed any financial or personal links with people or organizations that have a financial interest in this MS³.

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² See www.veteditors.org/ethicsconsensusguidelines.html

³ See www.icmje.org/coi_disclosure.pdf