

EDITORIAL

An author's editor reads the "Instructions for Authors"

Thomas A Lang

Associate Editor, *European Science Editing*; Tom Lang Communications and Training International; tomlangcom@aol.com

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Introduction

I've been a medical writer and author's editor for 45 years. I have read the instructions for authors in dozens of medical journals. I know what authors (and author's editors) think of these instructions, at least among those who know that journals actually *have* instructions for authors. For almost as long, I've been a member of four professional societies concerned with scientific publishing, and I know a lot of editors-in-chief of medical journals. I appreciate their desire to have authors follow the instructions when preparing manuscripts, at least among those editors who remember that their journals *have* such instructions and insist, at least occasionally, that they be followed.

A journal's instructions provide information on its purpose, readers, policies, and procedures; requirements for preparing manuscripts; and procedures for submitting manuscripts.¹ Here, I'm concerned only with requirements for preparing manuscripts and in why authors might ignore some of them. Mostly, I side with authors and marvel at what journals ask them to do to get published. (Besides, an editorial on *reasonable* requirements would not be nearly as interesting.) I do believe that authors should follow a journal's requirements for preparing manuscripts, but I also think that journals should realize how some of these requirements are perceived and should have more realistic expectations about what authors should be asked to do.

The examples here are word-for-word requirements that I have collected over the years. I've not identified the journals. I don't want to criticize specific journals, just to raise awareness about what appears to be a widespread concern. I do apologize for the bias toward English-language journals and for a certain amount of cynicism, which is an occupational hazard among those of us whose job is to find and fix weaknesses in other people's writing. It's a living.

Before I forget: links to the instructions for authors for 6,000 journals in the health sciences can be found at the website of the University of Toledo [Ohio] Mulford Health Sciences Library: <http://mulford.utoledo.edu/instr/>.

The Purpose of Manuscript Preparation Requirements

Rules are useful, but the understanding of the reason on which a rule is based is better.

Thomas Arthur Rickard,
author of an early book on technical writing, 1908²

Manuscript preparation requirements are intended to create articles that meet professional publication standards; provide a consistent appearance for all articles published by the journal and sometimes across journals; and promote the accuracy,

completeness, and clarity of the text, tables, and images needed to report research.

In general, instructions for authors are very small subsets of very large style manuals. Instructions are as accessible as the journal that publishes them, but style manuals are separate print or electronic books and are not generally consulted by authors. Journals usually specify the manual they prefer, the two most common in medicine being the *AMA Manual of Style*, published by the American Medical Association,³ and *Scientific Style and Format*, published by the Council of Science Editors.⁴ Journals can include relatively few requirements in their instructions, so those they select are those they find important.

Not all requirements are equally important. The more important ones—which if not met could be reason for rejection (by the cold, unfeeling, and complex, electronic submittal process)—include those for reporting clinical and epidemiological research designs and activities (eg from the EQUATOR network;⁵ word limits for abstracts and the body of the text; limits on the number of tables, figures, and references; bibliographic styles; and computer formats for text and image files.

The less-important requirements—which might result in mild-to-moderate swearing but not rejection—include information on the title page; the order of components in the manuscript (eg, where acknowledgements, figure captions, and tables are presented); the required type font and size, margin widths, line spacing, and line numbering; and copyediting rules, such as the bibliographic style (how references are formatted), whether subtitles, italics, and bolding are allowed, and of course, correct grammar and spelling.

Who should implement these requirements is debatable. Many authors are happy to leave copyediting to the manuscript editors at the journal (or to hire author's editors who provide copyediting as well as substantive editing before submittal), whereas some journals appear to be outsourcing copyediting to authors by including highly specific copyediting requirements in their instructions. (As an author's editor who charges authors by the hour to make journal editors happy, "highly specific copyediting conventions" are job security, but that's another editorial). In any event, irrespective of who is supposed to implement them, the requirements remain. But not all make sense.

Different journals have different needs, which may be reflected in their instructions. Journals with limited resources might want authors to do more copyediting and formatting, and better-funded journals might provide copyediting in-house to assure quality. Some requirements may accommodate a journal's page design, and page designs may differ among archival journals publishing original research (*JAMA*, *Journal of Experimental Psychology*), practice journals describing how to diagnose and treat various conditions (*Cleveland Clinic Journal of Medicine*, *Postgraduate Medicine*), and major multidisciplinary journals (*Science*, *Nature*) that have a more

magazine-like design. There may also be good reasons for some of the requirements listed below and I'm just not aware of them. Maybe.

Unsupported Requirements

- Some requirements are just baseless. For example, "Do not use personal pronouns" and "Do not write in the first person; that is, adopt the passive voice." A variation is to have authors refer to themselves as "the author." (This practice may be left over from very early journals, which were often written entirely by their editors, not by contributors. The editors could hide that fact by using "the author," rather than personal pronouns.⁶ First-person pronouns were used in the very first journals, published in the late 1600s,^{6,7} and they have been specifically encouraged in medical journals since at least 1900, in influential books by George Gould, one of the founders of the Association of Medical Librarians (now the Medical Library Association⁸) Maude Mellish, head of the Department of Publications at the Mayo Clinic,⁹ and George Simmons and Morris Fishbein, longtime editors of the *Journal of the American Medical Association*.¹⁰ The passive voice was, for a while,¹¹ thought to be somehow "more objective" because it avoided the use of personal pronouns.⁶ Research has since established that both personal pronouns and the appropriate use of the passive voice improve the clarity of a text.^{12,13}
- Another baseless requirement is to avoid "split infinitives." The infinitive form of a verb has a "to" in front of it: "to edit." "Splitting the infinitive" means putting an adverb between the "to" and the verb: "to thoroughly edit." The "correct" form would be "to edit thoroughly." However, split infinitives have always been acceptable in English. The problem appears to have begun in 1864, with the publication of a popular book titled, *The Queen's English*, by Henry Alford, an English theologian and highly respected scholar.¹⁴ Oddly enough, Henry didn't make the rule. In the book, he answered a correspondent who defended the use of the split infinitive, and Henry just said there was no reason to use them.
- Some journals request that authors "Avoid the main title/subtitle arrangement," which means not adding information after a colon at the end of the main title. However, information in this position can be useful, for example, ". . . : A Randomized Trial," ". . . : or ". . . : Part 3 of Evaluating Journal Instructions."
- Others decree that a title "Does not contain punctuation." This requirement may prohibit colons, but it also prohibits commas, which are as useful as colons: "Studying Addiction: Conceptualization, Assessment, and Findings" or "A Study from Mzuzu, Malawi," or "Diabetes, Obesity, and Hypertension in Risk Stratification Models." More useful would be to know whether the journal requires or accepts "declarative titles," which state the results in a sentence, or "informative titles," which tell what was studied.¹⁵
- A similar requirement: "Please do not use any . . . subheadings" [other than the introduction, methods, results, and discussion] or the "Discussion does not

contain subheads." Subheadings indicate the organization of a text, help readers find information, and provide "visual relief" in long articles. In addition, three subheadings are common enough in clinical research articles to be considered established: "Statistical Methods," at the end of the Methods, and "Strengths and Limitations of the Study" and "Conclusions," at the end of the Discussion. Again, research has established the value of subheadings.^{12,13} Similar restrictions are sometimes applied to figure captions, which should be ". . . succinct (no more than 60 words)." I think figure captions are like titles: they should be as long as they need to be to identify the key aspects of the figure and as short as authors (and editors) can make them. A related requirement is that "All figure legends must be written in complete sentences." Why?

- Finally, another requirement that appears to be unfounded, is "Preferentially, the top left cell of a table should be kept empty." Other journals require that all columns have a heading, and I've never heard of any reason, much less a good one, why that particular cell should be left empty.

Unclear Requirements

- I cringe when I read that "The *Journal's* reference style follows that of the Uniform Requirements," sometimes called the Vancouver Style, that was introduced by the International Committee of Medical Journal Editors (ICMJE) in 1978.¹⁶ One problem is that the UR style is no longer found on the ICMJE's website; it's been moved to the National Library of Medicine's website.¹⁷ Another is that the ICMJE now recommends the slightly different format used by the American National Standards Institute¹⁸ and by the US National Library of Medicine.

More importantly, most journals requiring the Uniform Requirements, don't use it; they use a variation. The 1978 format was to list the first six authors and to add *et al.* for articles with seven or more authors. This format has not changed in 42 years. However, the most common modification is to list the first six authors (or 4, 5, or 10) unless there are more than six (or 4, 5, or 10), in which case, only the first three are listed, followed by *et al.* The *AMA Manual of Style*³ and the *New England Journal of Medicine*¹⁹ use the "first three" modification, for example; *Scientific Style and Format* uses *et al.* after 10 authors.⁴

- Other journals confuse authors by saying in one part of the instructions, "Authors are required to submit their manuscripts with the list of references displayed in the AMA style" and saying in another part to "Always list all authors, and do not use '*et al.*' when listing your references." Still other journals say to use the Uniform Requirements and then give examples in a different format.
- Many journals provide examples of references in the desired format. However, these examples are not always helpful. The one below doesn't tell authors everything they need to know:

Pasteur LB, Houser D, Osler W, Welby M. The Pediatric Cardiomyopathy Registry. *Cardio-oncology*. 2004;98:297-308.

When is "et al." used in listing the authors? Should titles be in sentence case or in title case? Are journal titles abbreviated? Are abbreviated journal titles punctuated (ie *J. Med. Writ. & Graffiti*)? Should issue numbers be included? Should terminal page numbers be duplicated (eg, 145-8 vs, 145-148)? A better example:

Pasteur LB, Houser D, Osler W, et al. It was readable the last time I saw it: the dark side of author's editing. *J Med Writ & Graffiti*. 2004;98(4):297-9.

From this example, it's clear that "et al." should be used after three authors, journal names should be abbreviated but not punctuated, issue numbers should be included, and terminal page numbers should not be repeated (and that subtitles are ok!).

Unusually Specific Requirements

- I'm sure there's a story behind this requirement: "Avoid excessive use of abbreviations solely to reduce the word count."
- I'm sure there's a story behind this requirement, too: "Abbreviations are permitted, but usually no more than five per manuscript (at the Editor's discretion), and then *they must be used on every page of the manuscript*. Abbreviations are *usually limited to terms in the manuscript's title*." [Emphasis added.] It would be easier to say, "Don't use abbreviations."
- Other "do and don't" requirements seem almost trivial and annoying. The do's sound like personal preferences:
 - In the acknowledgments: "'Dr.' should precede the name of each person with a medical and/or doctoral degree."
 - "All confidence intervals are expressed . . . with a comma instead of a dash between values"
 - "Key terms should be in alphabetical order and separated by commas."
 - "Adjectival key words should be changed to nouns."
 - "Put spaces between the [nonsequential] reference numbers (eg 8, 11, 32)"
 - "Put 2 spaces between sentences."
 - ". . . use a comma before the final item in a list." (This, the "serial comma," is important: "I like cooking, my family, and my friends" vs. "I like cooking my family and my friends." Seems like too small of an issue to put into instructions, however.)
- The don'ts sound like "pet peeves":
 - "Do not use 'level' when referring to a 'concentration.'"
 - "Do not use 2-letter US Postal Service abbreviations"
 - "Do not use "conclusion" as a heading."
 - "Don't use 'References' use 'Literature Cited'"
 - "Don't use "%tile" for "percentile" (from an annoying author, not a journal, but it belongs here and anyone who uses it should be fined heavily)

Unusually Demanding Requirements

- Some requirements, although reasonable, can nevertheless be demanding, especially if encountered at the last minute: "All references that are 5 years old or more should be replaced with current literature, unless the referenced publication is a classic work that underscores the core subject."

- Here's a journal that takes references seriously: "With your revised manuscript, send a copy of the title page of any work cited that was published before 1970 in the US and for all work cited published outside the US, regardless of year. For books, send copies of the copyright page and the first page of any chapters referenced."
- The purpose of an abstract is to help readers decide whether to read the article.¹⁵ Thus, information that does not help readers make this decision should not be included. My Award for Best Unrealistic Requirement goes to this one: "Manuscripts reporting original research must include a structured abstract of 250 words or less. . . In the *materials and methods*, please give information regarding institutional review board approval, informed consent, and HIPAA compliance (U.S. studies). For studies involving animals, indicate appropriate committee approval. Briefly state what was done and what materials were used, including number of subjects, sex, and age. *Also include the methods used to assess the data and to control bias, along with the statistical analyses performed.*" [Emphasis added.] Besides the fact that putting all this information into a 250-word abstract would be challenging, the information in italics is irrelevant in deciding to read the article.
- "Include sufficient technical information to allow the study to be repeated." Although I believe the intent of this requirement is sound, I think it is increasingly unrealistic and is included more out of habit than value. The typical article in clinical medicine is 3,000 words, which is long enough to summarize the problem being addressed, the general methods used to address it, and the key findings, but rarely long enough to allow accurate replication. Supplemental information can be submitted on-line, and clinical research protocols are now available in trial registries. However, the published article is more often than not inconsistent with the protocol.²⁰ In addition, the article itself is an idealized account of the research. As Nobel Laureate Richard Feynman describes it: "We have a habit in writing articles published in scientific journals to make the work as finished as possible, to cover up all the tracks, to not worry about the blind alleys or to describe how you had the wrong idea first".²¹
- Word limits may help production managers fit the text into templates that standardize the look of the journal. These limits may also force authors to say what they want to say in fewer words, which is a very good idea, and skilled editing can often shorten many texts by up to 30% without losing content.^{22,23} But I've never understood why journals want to limit the size of the sections *within* an abstract or *within* an article. For example, "A structured abstract should have no more than 480 words. The aim should be no more than 20 words, the methods no more than 140, the results no more than 294, and the conclusion no more than 26 words." Aside from the fact that 480 words is an unusually long abstract, why are these limits important? Why the specificity of 140, 294, and 26 words? Is someone going to count the words in each section? What happens if a section goes over the limit?

Also, the above abstract is not a structured abstract; it's a typical informative abstract with a heading for each of the 4 standard sections (background, methods, results, and conclusions) instead of a single paragraph. The original structured abstract for an article reporting original research (especially randomized trials) has 8 headings; it contains more information than a typical informative abstract.²⁴

Likewise, "The Introduction should not exceed 750 words" or "should be limited to 1.5 manuscript pages"; "The Discussion should not exceed 1500 words" or "not exceed 4 typewritten pages except . . . when approved by the Editor." A similar, if slightly less-arbitrary approach, was based on the average length of each section in a sample of articles. The researchers concluded that articles should consist of 30 to 32 paragraphs to "simplify scientific writing."²⁵ As a guide for newer authors, the recommendation may have value, but I think it is too simplistic, given the variability in documenting research activities, providing context, presenting data, reviewing the literature, and so on.

The "recommended" length of the sections of a scientific article based on the mean lengths of each section in 54 articles from 2 cardiology journals²⁵

| Section | Paragraphs, n | Words, n |
|--------------|---------------|----------|
| Introduction | 1 to 4 | 400 |
| Methods | 6 to 9 | 750 |
| Results | 4 to 9 | 1,000 |
| Discussion | up to 10 | 1,500 |
| Total | up to 32 | 3,650 |

Unwise Requirements

- The title is the most important part of an article.¹⁵ It's the primary link between the topic and potential readers and is the part most often read and often the only part read.^{6,15} Thus, it should be long enough to accomplish its purpose, which is to help readers decide whether to read the article. A good title for an article reporting clinical research ideally identifies: the study Setting, Patients, Intervention, Comparison group, Endpoints, and study Design and sometimes a Time period. (A useful mnemonic for these points is SPICED-T,¹⁵ which is my version of the truly dreadful, "PICOTS"—Patients, Intervention, Comparator, Outcome, Time, and Study.²⁶

Nevertheless, many journals put limits on titles: "Titles should be less than 12 words" or "No more than 15 words" or "Titles should be no more than 80 characters and spaces." These limits seem arbitrary and unwise. Consider a title: "Low-Air-Loss Beds vs. Foam Mattresses for Treating Pressure Ulcers in Nursing Home Patients: A Randomized Trial." This title has 16 words, 111 characters, and includes 6 SPICED-T criteria. The original title was "A Randomized Trial of Low-Air-Loss Beds for Treatment of Pressure Ulcers," which has 11 words, 72 characters, and 3 SPICED-T criteria. Are the additional 31 characters really that objectionable?

- The most objectionable requirement I've collected is this one: "When applicable, refer to papers published in *The Journal of Wishful Thinking* from the past 2 years." Such a requirement appears to be "forced citation," a practice used by some journal editors to artificially increase the number of citations to the articles it publishes.²⁷ Often, such citation is an implied condition of acceptance, which pressures authors to comply. Forced citation is usually implemented in the editor's correspondence with authors, so to read it in the published instructions is unexpected and an unwise admission on the part of the journal.
- Another less-common but dysfunctional requirement is asking authors to "Please write the aim as the form of "To investigate or to study." However, "to investigate" says *how* the authors did in the study, not *why* they did it; it doesn't indicate an outcome. Readers know the authors investigated something, but so what? What they want to know is whether the authors determined or confirmed or predicted or explained something. It's the difference between "My purpose was to *wrestle* the alligator" and "My purpose was to *capture* the alligator." "Wrestle" is a "process" verb; capture is an "endpoint" verb (although, I suppose the actual "endpoint" depends on how well one wrestles with alligators).

Examples of verbs indicating why a study was done in contrast to those indicating how it was done

| Why the study was done | How the study was done |
|------------------------|------------------------|
| "To ..." | Resolve |
| | Determine |
| | Confirm |
| | Explain |
| | Predict |
| | Estimate |
| | Describe |
| | Differentiate |
| | Predict |
| | Select |
| "We ..." | Characterized |
| | Compared |
| | Tested |
| | Measured |
| | Dissected |
| | Reviewed |
| | Observed |
| | Interviewed |
| Replicated | |
| | Prayed |

Recommendations

I recommend that journals review their instructions periodically to make sure they know what they are asking of authors and to keep the instructions current. I also encourage them to open their "eyes": standardize, minimize, and summarize.

Standardization happens in fits and starts. Many of the conventions followed today by most journals come from early journals and printing conventions. The IMRAD format (introduction, methods, results, and discussion) was adopted only the late 1970s⁶ Recent style committees updating the *AMA Manual of Style* and *Scientific Style and Format* have a general agreement to reduce the differences between manuals. Personal preferences need to be replaced by evidence-based or consensus-based guidelines, such as those introduced by the ICMJE.

I also suggest minimizing the number of instructions. Focus on the most important ones and leave the lesser ones for later, after conditional acceptance.²⁸ The more requirements, the more details, and the more seemingly arbitrary instructions become, the less authors will follow them.

Finally, I suggest summarizing the instructions; make them easier to find, if not easier to implement. Pre-submittal checklists for authors are an example, as is the Proposed Universal Framework for More User-Friendly Author Instructions developed by EASE.²⁹

As computer software becomes more sophisticated, many instructions will undoubtedly be implemented or revised automatically, which should make life easier for everybody. Until then, and probably even after, author's editors and manuscript editors at journals and publishers will continue to implement these requirements. Editors are neither authors nor readers, nor publishers, but they work on behalf of all of them, to keep everybody happy.

Publication really is the final stage of research.³⁰ If the research process begins with an idea and ends in publication, the shortest, least-expensive, and arguably most important stage of that process is manuscript preparation. Once the article is in the literature, it is there essentially forever, where it is often the only lasting record of the research. Instructions for authors (and author's editors ...) are thus critical in preserving and advancing the quality of the scientific literature.

Competing interests

Tom Lang is an associate editor of *European Science Editing* and self-employed as Tom Lang Communications and Training International.

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