

Some considerations when abstracting

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My dictionary (Urdang, 1973) defines the abstract as "something that concentrates in itself the essential qualities of anything more extensive or more general, or of several things; essence." As it applies to writing, Houghton (1975) says, "An abstract can be defined as a summary of the *information in a document*." Although these definitions are clear and direct, they sometimes get muddled or lost during the writing of a manuscript. As a result, the abstract falls short of its function and the manuscript is greatly weakened. The reviewing, editing, and possible publication of the manuscript can be substantially delayed because of its weak and insufficient abstract. To help expedite matters, I offer the following comments concerning abstracts. I offer these for your benefit, for the benefit of your readers, and for the benefit of editors, reviewers, and publication staffs everywhere.

Except for review articles, we usually write an article paralleling what we did. We follow the rules of logic and the scientific method both to perform and to present our work. However, in this exercise, the abstract is unique. Logic, clarity, development and the scientific method are no longer the sole guidelines. They have to be merged with condensation, compaction, and summarization. It is probably obvious, but writing a good abstract requires repacking your multipage manuscript into a single paragraph.

Good abstracts are not difficult to write, especially if you have written a good manuscript and avoid some pitfalls. Remember, unlike the situation when you began, your manuscript should contain the requisite content for the abstract. What you have to do is reformulate, evaluate, extract, and recast. This leads to a basic recommendation: write the abstract after the manuscript has been completed, edited, and has rested untouched in a desk drawer for a reasonable amount of time. This fermenting period allows closer empathy with a knowledgeable, but one-time reader.

The following is my attempt to give a helpful, albeit incomplete, set of observations and some dos-and-don'ts of abstracting. It is not my intent to provide a manual on how to write an abstract.

Read Gopen and Swan's article.—Gopen and Swan (1990) have written a very unique and enlightening article on scientific writing. It discusses the science of writing science from the perspective of the needs and requirements of the reader. If this is the only advice you take, please read that article!

Read Landes's article.—Abstracts are not new and seem to date back to cave painting. However, in 1951 K. K. Landes, having had enough of poor abstracts, published, and 15 years later, revised and again published a wonderful and helpful one-page article on his annoyance's with inadequate abstracts. Landes's article is universal, applying to all scientific disciplines. Make it a hard-and-fast rule: before writing, take 10 minutes and refresh yourself with Landes's article. It is time well spent and may greatly improve your abstract.

Considering my high praise of Landes's article, why do I feel the need to say more? Simply stated, I don't feel that Landes touched on enough of the pitfalls of modern abstracting.

Stress content not intent

An abstract should summarize the content of the article not the intent of the writer(s). It should contain only that which you are specifically reporting in the manuscript. Based on Day's (1983) recommendations, the abstract should have at most one or two sentences on each of the four foundation points of your work. These are: (1) principal objectives and scope of the work, (2) methodology, (3) results, and (4) conclusions.

Leave out extra baggage

Too many abstracts are filled with extras. Stick to the four foundation points. Background references, literature surveys, and setting; justification and motivation; global definition of the problems and discipline; needs, benefits, claims, recommendations, opinions, and utility of the work are not part of the abstract. They may qualify as intent, motivation, bulwark, etc. and appear in the main body of the work, but they are not part of, nor are they needed in the abstract.

Assume a knowledgeable reader

In all writing there is always the question of the knowledge level of the reader. In writing the abstract assume a knowledgeable reader. The level of knowledge assumed should be that of a good supervisor, one who understands the type of work, but is not active in that area and may not remember the more esoteric nomenclature. Note, this level of knowledge may not be the same as what you have assumed throughout your manuscript. Again, this points out that writing the abstract is not simply a continuity task strapped to the end of writing the manuscript. Abstracts require rethinking and reformulating.

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Write the abstract last

After you write your manuscript and let it ferment, you should be able to write a terse, but exact, description of each of the four foundation points based on the content of the written manuscript. If you cannot formulate a four-to-eight-sentence abstract, maybe you should reexamine your manuscript. It may not be doing its job and should be revised.

Avoid passive voice

To avoid a conflict between intent, content, and extra baggage, it is very helpful to write in the active voice. Sentences structured with "is presented," "was done," "is given," "is developed," etc. are easy to write, terrible to read, and convey essentially nothing to the reader. Despite how they sound, they provide no useful content; they show only intent, while giving no content.

Keep it short

As indicated above, your abstract does not need to be longer than an eight sentence maximum. If it is, it's either not doing its job and you have excess baggage or you have a very rare exception. I stress rare. You should complete your abstract in one paragraph only. It should not have multiple paragraphs. If it does, again, you probably have excess baggage.

Because of this length restriction, your abstract may not be smooth and flowing. That's OK. It may be very terse, staccato sounding, and not particularly easy to read. That's OK, too. Ease of reading is not a requirement; conveying content is. Because of its short length, a reader can easily read through it a second time.

Make quantitative not qualitative statements

It is very annoying to read that A is bigger or smaller, faster or slower, longer or shorter, more or less porous or permeable, etc., than B without knowing how much or to what extent.

Don't use equations or other mathematical notation

It should be obvious that equations and mathematical notation have no place in an abstract, but some writers refuse to recognize this. Remember, the abstract must be able to stand alone. Give names to parameters not mathematical symbols. If required, name common equations (e.g., the wave equation, Laplace's equation, etc.) and summarize your contribution and findings from them.

In the end, empathize with the first-time reader

Your abstract is short and can be edited easily. As an editing tool, read your abstract and imagine that it is being read for the first time and that it is the only portion of the article that is read. Answer honestly, "what have I conveyed to the reader? With what does he/she walk away?" If, for example, it is a compendium of "is presents" and "was done," this is not an abstract.

In the end, remember that your intent in writing an abstract is to showcase your work in a direct and lean manner. The abstract should give the casual reader a bit of useful information and the interested reader a prod to continue and read the article. It's a marketing tool, but not a platform for salesmanship or filibustering. Also remember that there are many services that copy and publish abstracts. An abstract must be structured to stand alone. It should not require leaning on the main body of the article.

Finally, my reason for writing this note is not completely altruistic. All past and present editors, associate editors, reviewers, editorial staff members, and readers in general, who, like Landes, are tired of poor abstracts, are eager to read well written abstracts.

Remember, your abstract is your showcase.

References

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