

Writing abstracts

Abstracts *matter*. They are used for journal papers, conference papers and submissions, grant applications, and theses. For editors and conference organisers, abstracts help to provide a basis for evaluating your work. They also help readers to decide whether to continue reading your work and help them to understand your research. And writing abstracts can help you to clarify the story of your research.

An abstract has to work as an independent text. Often, readers will read only the abstract, not the full text. The abstract therefore has to make sense in itself. For that reason, avoid phrases that cross-refer to the main text – phrases such as ‘in this article’, ‘this paper argues’ or ‘below’. Think of the abstract as a *crystallization* of your research.

How to write your abstract – and how not to

- I. Authors often leave the writing of abstracts until the end of the writing process. They write their paper, proposal, or thesis first and then write the abstract afterwards. This causes two problems. It means that authors are unable to consult their own abstracts as they are writing their research – that is, they fail to take advantage of clarification that an abstract can provide to its author. And leaving the abstract to the end often leads to a rushed job. To avoid these problems, write the abstract early in the process – ideally, before you start writing your main text. You can then revise your abstract as your main text develops – and again at the end of the writing process.

II. Here is a list of components that you might consider including in your abstract:

- 1) the context of your research (the scientific or practical context)
- 2) the research problem that motivated the research
- 3) the research question
- 4) the aim of the research
- 5) the methodology
- 6) the results
- 7) practical implications
- 8) theoretical implications or implications for further research.

I'm not entirely happy with the word 'theoretical' in point (8). Perhaps 'cognitive' would be better. The key point is that (8) is concerned with the way we think, whereas (7) has to do with how we behave.

Not all abstracts need include all of these. In particular, #2, 3, and 4 often overlap with each other. #5 and 6 are usually essential. If you do decide to omit any of the above, it is usually best not to change the relative order of those that remain: for example, it is better not to place # 5 before 4.

III. For the purposes of composing your abstract it is helpful to convert point II into a series of questions for you to answer, as follows:

- 1) What is the background to your research? Whence does it come? What does it grow out of?
- 2) What's the problem you're investigating or seeking to solve? What motivated this research?
- 3) What question does the research seek to answer?

- 4) What is the aim of the research? What were you trying to do?
- 5) How did you do this research?
- 6) What did you find? What data did your research produce?
- 7) How should we do things differently as a result of your research?
- 8) How should we think differently as a result of your research? What needs researching next?

For ready reference, points II & III are summarised in the appendix below.

- IV. One common error is to make an abstract too ‘crunched up’. Authors sometimes simply ignore some of the components listed in point II above, especially #1 (context) and #7 & 8 (implications). Of course, sometimes it is appropriate to omit these (indeed, in some settings scientific abstracts may include nothing more than the methodology and results). But decisions about which components to exclude should be made *deliberately*, not by default. Note that context and implications may be particularly helpful for readers in interdisciplinary settings.
- V. Another common error is to devote too much space to the first few components in the abstract, with the result that the later components (typically, results and implications) get squashed. Consider redrafting your abstract to get the balance right – ensure that the results and implications have, as it were, room to breathe.

Note that some settings require *structured* abstracts. That is, they provide you with headings (e.g. ‘Method’, ‘Results’) to include within the abstract. Research by James Hartley has suggested that structured abstracts work better for, and are preferred by, both readers and authors.¹ Hartley suggests that, if you are not required to provide a structured abstract, it may be best to start by writing your abstract in this

way and then simply delete the headings. If you do this, you can use items from the list of components given above (see II) as your headings.

Key words

Along with an abstract, you will often be asked to supply a list of key words or phrases. These matter: since they affect the searchability of your work and, hence, its retrievability. If you want your work to be cited, select your key terms carefully. Ask yourself: what terms do I want my research to be associated with? And which terms are readers likely to use in their searches? If you are given a maximum number of terms, make use of the full entitlement. Consider employing synonyms (i.e., use more than one term to refer to the same concept).

Some practical tips

1. Read lots of abstracts, get used to 'hearing' them.
2. Collect examples of good practice into a resource bank. Analyse them. Ask yourself which components they include and which words are associated with which components.
3. Draft, redraft, re-redraft again, and so on. A good abstract may require numerous iterations.
4. Remember that every word counts. Each time you redraft, start by deciding how you can save words; then spend those words wisely. Be tough on padding and anything trivial.
5. Decide what is significant – then make the significance clear.
6. Be explicit. Remember your readers may have less specialist knowledge than you

do.

7. Ask lots of people to read your draft abstracts. They don't all have to be specialists – in fact, it is better if your respondents include some non-specialists (even non-scientists). Then ask them detailed questions (e.g. “Is the aim of the research clear?”) and seek detailed advice (e.g. “If I had to change one word, which should it be?”).
8. Check that the main text and the abstract harmonise. Does your main text actually say what your abstract implies it does?
9. Be perfectionist. Not everything you write need be perfect, but your abstracts should be.

Resources to help you

In *Planning, Proposing, and Presenting Science Effectively*, Jack P. Hailman & Karen B. Strier outline their approach to writing abstracts as follows:

The first sentence of your abstract should be a topic sentence that identifies the area of your research and the ‘why’ of the study. The second sentence often indicates your research question or perspective, often beginning with ‘This study...’ followed by a clear statement of what your paper will be about. The next few sentences of an abstract should indicate the source of your data, sample sizes, and critical methods employed. The final few sentences summarize your most important results and should conclude with a summary statement describing your conclusion or your approach to analyzing the results. Many abstracts also indicate the funding sources for the research they will present.ⁱⁱ

You may consider using this approach, which was designed for (to quote the book's sub-title) 'graduate students and researchers in the behavioral sciences and biology'.

In *The Chicago Guide to Communicating Science* (a book that focuses on communicating science to wider audiences), Scott L. Montgomery outlines his approach to writing abstracts as follows:

A good abstract is more than an executive summary or a series of generalizing statements. It is much closer to a mini-paper, a compressed version of an article or talk..., minus figures and tables. Think of the abstract, therefore, not as an add-on but instead as a stand-alone, an entity that, if decapitated from the rest of the paper, would convey its bodily substance ... Try to follow the basic order of points in your article ... Be sure to include scope and importance of topic, basic approach used, some specific data, and most important conclusion(s). Keep abbreviations to an absolute minimum. Don't include too much hard data (it clots the narrative) – select only the data that help establish the 'problem' or support the main conclusion. Perhaps the most common problem in creating abstracts is the urge (doubtless felt by all) to cram everything in and get it over with – an impulse that...will lead to long, heavily burdened, sentences.ⁱⁱⁱ

It is useful to compare and contrast Montgomery's approach to Hailman and Strier's.

Appendix: Summary of content

The table below sets out eight types of content that may feature in an abstract. It isn't necessary to include all eight in any one abstract, unless you wish to. The ones that I suggest are essential are nos. 2, 5, and 6.

COMPONENT	PROMPT QUESTIONS
1. The context of your research (the scientific or practical context)	What is the background to your research? Whence does it come? What does it grow out of?
2. The problem that motivated the research [Essential]	What's the problem you're investigating or seeking to solve? What motivated this research?
3. The research question	What question does the research seek to answer?
4. The aim of the research	What is the aim of the research? What were you trying to do?
5. The methodology [Essential]	How did you do this research?
6. The results [Essential]	What did you find? What data did your research produce?
7. Practical implications	How should we do things differently as a result of your research?
8. Theoretical implications or implications for further research	How should we think differently as a result of your research? What needs researching next?

ⁱ James Hartley, *Academic writing and publishing: a practical handbook* (Routledge, 2008), Chapter 2.3.

ⁱⁱ Jack P. Hailman & Karen B. Strier, *Planning, Proposing, and Presenting Science Effectively* 2nd edn (CUP, 2006), pp137-38.

ⁱⁱⁱ Adapted from Scott L. Montgomery, *The Chicago Guide to Communicating Science* (University of Chicago Press, 2003), pp. 83-84.