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Introduction

This book in the Easy Guide series gives the reader the basic skills and information to write well when contributing to peer-reviewed scientific or technical journals. All the information needed is contained within this book—how to write well, how to edit your work so that it is easy to read, how to structure your articles for submission to journals, and what to include and, probably more importantly, what to leave out. Editing is essential to any writing, and this book gives the basics of what to do in this stage of writing.

This book, like the others in the series, does not depend on endless exercises. The author considers many such exercises a waste of time, as it is most unlikely that any book, no matter how massive, will contain just the right exercises that a writer will need in writing a particular piece of writing. Instead, it concentrates on the writer's project—the actual article at hand, and helps the

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reader fine tune the result to meet the rigid standards applied to publishing in peer-reviewed journals. This book also assumes a certain degree of understanding of the English language—the normal grammar rules and so on.

This book shows you how to structure your article. There is ample guidance given in planning your article, breaking the material down by using headings, and the details that go into each section of your article—Introduction, Methods, Results, Discussion, Conclusion and so on. There is a guide to reviewers and their role in publication—what they will be asked to consider, and the process your article will go through before acceptance by a journal, as well as information about using references and compiling lists of references.

This book will show you how to edit your article, and there is a comprehensive checklist so you can ensure your article should be much closer to that goal—acceptance for publication in a peer-reviewed journal.

There is useful information about the use of illustrations, graphs and tables, and how to submit the data used to compile the graphs.

Introduction

Oh, how hard it is to sit at our computers and begin writing. There are those usual distractions because we don't know where to begin. There is more research to attend to, more conferences to attend, more meetings, more discussions with the university hierarchy. The cat needs patting ... the dog wants to go for a walk ... the washing up hasn't been done ... Anyway, our task is just too much. It's almost insurmountable. That manuscript is yet several years away.

So let's start putting the words down.

Something that often prevents the first words from coming is the intimidating thought of the sheer volume of words that have to be written. For instance, an article might require around 2000 words. Do you believe yourself capable of writing this much material, even on a topic of research you know so well? Probably not, and your screen will remain blank for a long, long time if you approach the task at hand in its entirety. With the use of headings—and lots of them—and sub-headings, your task immediately becomes easier. You don't write 2000 words about one subject, but perhaps 200 words about 10 related topics, or even 100 words about 20 related topics.

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These small units, added one to the other, will soon become a full-length article. How long have you thought about starting that article you feel so strongly about? A year? More than that?

Seeing yourself making progress with your work as each 'unit' is written, can make the difference between the struggle and the triumph. If you get stuck with one section, don't stop, work on another section that you feel more confident about. You will be in a better position to smooth any bumps and cracks when the larger part of the structure is in place. And towards the end of the large project, if you have made substantial progress, those difficult pieces you left out will seem to just fall into place. You will (or, at least, should) have the confidence now to add those hard bits.

These headings will form an outline of your proposed manuscript.

Sub-headings will make the task of writing more organised and easier. These can be removed later if you no longer need them. But in the early stages of writing, they can be arranged and rearranged many times so the logical flow becomes apparent. Also they serve as a guide

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to even the work out over a number of points rather than concentrating on one point more than the others.

An outline is merely a plan. Headings are the themes of topics and carry much of the supporting detail. The outline also suggests a tentative paragraph structure.

Get each segment of your article to blend with those before it and after it. Get into the habit of using linking or transition phrases. Link a paragraph to what has immediately preceded it. Join paragraphs where possible by implying ‘which leads me to say ...’ Such phrases can occur at or near the beginning of a paragraph or at the end of the previous paragraph—the last sentence can introduce the next angle of the article. You can also link paragraphs by words showing logical relationships, such as ‘therefore’, ‘however’, ‘even so’. Any transition should shift readers easily from one topic to the next without jolting them.

And good writing, clear writing, is the secret to getting your article published, and giving your career a push along.

This book will be suitable for anyone wanting to write for peer-reviewed science or technical journals.

Chapter 1 Getting Started

Publication in a reputable, peer-reviewed journal should be the goal of all researchers, as publication is the main means of disseminating the results or findings of what can often amount to years of research.

Career advancement these days is, to a large extent, dependent upon publication in peer-reviewed journals. It's the applicant with an impressive list of published journal articles who will be ahead of those with a meagre portfolio of published work, or none at all to their credit. This book will teach you the art of scientific and technical writing. It will teach you how to format your article, its structure, the use of references, tables, graphics, and many of the important elements of submitting an article to a scientific or refereed journal.

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The communication of scientific information is valued in our society. Technical information needs to be made readily available for market promotion. Results of clinical studies have to be conveyed to doctors and healthcare workers so they, and through them, their patients, can benefit from another's work. A botanist needs to report on a recent discovery—big or small—that will help other researchers in their work. Decision makers consider new findings in relevant fields. Government decisions are often based on reports of a finding or a recommendation. The examples go on.

WHAT IS TECHNICAL WRITING?

Technical writing, by definition, can include all writing that deals effectively with subjects within science and technology.

Technical writing usually contains fewer words in each paragraph, shorter sentences, and more paragraphs. And simple words. Good technical writing requires the choice of words that convey the exact meanings intended. This means that clichés are immediately abolished from

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all scientific and technical writing. Jargon is kept to a minimum except when its use is unavoidable.

Yet in some ways, technical writing is little different from writing for popular magazines, apart from a format that must be adhered to. As with all writing, without clarity the writing becomes nothing but a jumble of unintelligible words decipherable only to the writer. Just because you are writing mainly for professional biologists does not mean that your style should be so heavy that any interested person other than biologists cannot understand much of what you have written. These days, much of what is technical or scientific is taken up and popularised by the media through television programs aimed at the general public, newspaper reports of medical research, atmospheric deterioration, and so on.

Technical writing should be precise, concise and accurate. No such writing can get away from the use of technical terms. But a feature of good technical writing is the use of easily understood words. The term photosynthesis must be used—there is no way to avoid its use in many botanical articles. But that does not mean that the rest of the article must be full of terms that only

specialists can interpret. Too many words that a reader does not understand, means a reader lost. If necessary, it might be sensible (in some types of technical writing) to include a glossary, where technical terms are defined. (A glossary is a list of terms, so the heading needs only be 'glossary', not a 'glossary of terms').

The first sentence should be of literary brilliance. It should grab the reader's attention so he or she wants to read on. It is at this early stage that your readers have the opportunity to ask themselves: what's this all about? Is it interesting? Should I bother to read it? A bored reader would much rather do something else if your article is dull and the style flat.

Clever writing is not text that confounds even the experts. Clever writing is text that is easily accessible to any intended reader. If your intended reader cannot understand your article, there is nothing smart about what you have written.

An author should always aim for high standards of writing, in producing precise and tight writing. Because of the often professional nature of the readers, the standards of scientific or technical writing are generally higher than those set for the popular press.