Book review

Writing for science journals: Tips, tricks, and a learning plan
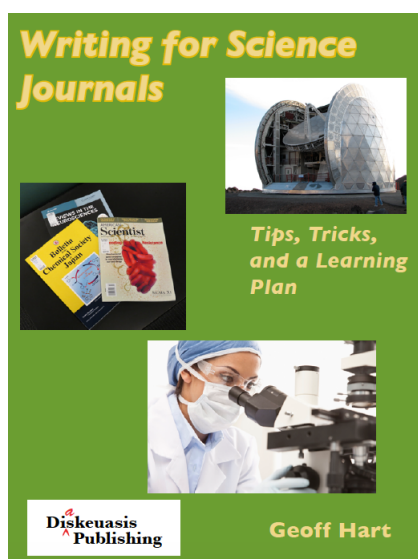
by Geoffrey Hart
Diaskeuasis Publishing
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Web: http://www.geoff-hart.com/index.html
Online bookstore: Printed version of the book

Two years ago I attended a short course on writing science publications, at which the presenter began with the premise: You have not really done the work until it has been *written*, and has been *read* and *understood* (Emeritus Professor David Lindsay, The University of Western Australia, Perth).

These three points form the basis of a comprehensive self-published book by Geoffrey Hart called *Writing for science journals: Tips, tricks, and a learning plan*. The work covers the whole spectrum of preparing science research for publication, including designing experiments to yield meaningful results, communicating with journal editors, responding to peer review, and every aspect of the process in between. At nearly 600 ebook pages (434 printed pages), it must be one of the most expansive books available on the subject.

Origins and aims

Hart is well qualified to write this book. After post-graduate work in forestry and forest biology, he moved into editing science writing. In nearly 30 years, he has worked with authors on thousands of papers submitted to peer-reviewed journals, and has had several hundred of his own articles published. In short, he knows thoroughly the process of writing and publishing science.

Why this book, now? Having research papers published is a competitive process and careers hang on it. It's important to convince journal editors that your manuscript is worth publishing, and it's equally important that your readers can get the most out of your papers. The book is for scientists of any discipline at any level of their career, but may be of greatest value for science graduates and those writing their first papers.

What's the book about?

The book covers an impressive array of subjects that reflects Hart's wide experience and knowledge. According to the back cover blurb (unfortunately not attached to the ebook), '…writing publication-quality manuscripts and guiding them through the peer-review process is difficult, time-consuming, and often frustrating.' There is a lot

to know and learn, but this book covers just about everything needed to reduce the chances of a manuscript being rejected.

There is sound advice on avoiding some of the ethical pitfalls waiting to ensnare the would-be published author. This is good stuff to know because there is nothing more embarrassing, or potentially career-limiting, than to have other researchers point out glaring flaws in method or statistical presentation, or level accusations of plagiarism. A list of subject-specific organizations, their publications and websites, that maintain guidelines for ethics in science publication, is a good start for anyone interested in keeping up to date with science-writing protocol.

Other aspects of good practice are covered in various chapters later in the book. There is a section dedicated to handling statistics, and another on preparing figures and tables. Hart acknowledges that valid presentation and interpretation of statistics is a book in its own right, and instead focuses on common misunderstandings of the significance of statistical results. Combining these subjects with ethics, experimental design, and advice on the peer review process, in one volume, lends the book depth and breadth. These, of course, are all alongside more usual subjects such as essential parts of the manuscript, writing style, and citation and referencing.

With so much to consider, however, I was left wondering if it is *too* much. Would users find it more approachable if the topics were divided into two volumes? In one could be ethics and topics more directly to do with writing process, writing style, referencing, and manuscript submission. In a second volume could be other topics, such as experimental design, statistics, and preparation of supplemental information. Certainly this division would make the first volume more like other publications on the market. However, the latter would usefully supplement a good working relationship between early-career researchers and their supervisors or mentors. Providing a clearer separation between topics — those related to writing compared with those directed towards how to do science — might make both parts more transparent, and less daunting to someone starting out in science writing.

Navigation

What is the best way to read this book? It is available in hard copy from Amazon.com, but most users will probably download the ebook or PDF. Browsing electronically makes navigation relatively straight forward because, in the table of contents, chapter and chapter section titles are hyperlinked to their destination. I viewed it in Apple iBooks, which provides a drop down contents list that is also hyperlinked, allowing navigation directly to chapters and sections of interest.

Each chapter is subdivided into specific and digestible sections with informative subheadings and cross-references to other parts of the book. Early chapters make good use of hyperlinks to published sources of further information. At the end of each chapter is a useful bullet-pointed subsection called 'Key points to learn' that summarises the take-home message from that chapter.

The chapter sequence is a little counterintuitive. Chapter 19 English difficulties, and Chapter 20 Writing style, are sandwiched between chapters on how to prepare experimental, numerical and supplemental material, and chapters on review and publication. On Hart's website, the chapters are grouped into parts, and Chapters 19

and 20 belong to Part III: Details and style problems. The ebook could probably be improved if it also used these part headings.

More use could have been made of internal hyperlinks to take the reader from one part of the book to another. In Chapter 16 Figures, (more on this below), hyperlinked cross-references could have been used to jump to (and back from) Chapter 17 Tables, and links could have been created between figure citations and the example figures to which they refer. Although each figure is only a page or two from its first citation, if the figure is cited later, it's useful to be able to jump back to it, rather than having to remember where it was or use the search tool. Internal hyperlinking is a feature we have come to expect in digital publications.

Style and accessibility

The large text and generous line spacing make reading in ebook form fairly stress free. The writing style is conversational, and flows easily without undue repetition. The text is studded with useful examples to illustrate principles, and the judicious use of bullet points helps the reader focus.

However, some of the sentences are long and complicated and a simpler, shorter sentence structure would be more effective in some instances.

Examples, illustrations and learning points

In most cases, Hart demonstrates principles well with the use of good examples.

In Chapter 5 Using your word processor, we are introduced to some of the peculiarities of different versions of Microsoft Word on both Mac and PC platforms. This is worth knowing because precious hours can be wasted trying to format a document that has been opened in a new version of MS Word, only to find the function has been moved or replaced with something even more complicated.

Chapter 6 Structure and format of a journal manuscript, is a valuable introduction to the essentials of how to prepare a paper for the target publication. The chapter opens by comparing a journal manuscript to a mystery novel, which is apt insofar as setting out to make discoveries in science is a bit like solving a mystery, but novice authors beware: it's usually unwise to write a paper while keeping the results a secret until the twist at the end!

Figures and tables are key elements of publications in almost every discipline of science. Readers will value the guidelines Hart provides in Chapters 16 and 17 for preparing figures and tables. Descriptions and examples of figure and table captions he uses are effective and usefully illustrate points made in the text.

By the same token, I would have liked to see more figures used elsewhere in this book. Only Chapters 16 and 17 appear to use figures and tables to illustrate their points, and more use could have been made of line diagrams or process flow charts to graphically illustrate sequences of steps described elsewhere in the text. For instance, in Chapter 14 Experimental design and statistics, could the process of choosing a suitable experimental design have been presented in a flow chart with decision points? Overall, the book is very text rich and the visual impression might have been lightened by breaking it up with non-textual elements.

An element that does enhance the visual appearance is the use of pullout boxes of information. Scattered through the book every three or four pages, these provide useful and interesting extra snippets of clarification, websites or other sources of information, or notes and tips about exceptions to the rule or traps for the unwary.

Verdict

With *Writing for science journals*, Hart has put his soul into a project he cares about very much. And rightly so, because much of the debate we're subjected to from the media and scholarly institutions — about climate change, genetic modification of food, medical 'breakthroughs' — depends on us being able to distinguish good science from bad. That task relies on science being written well.

There is plenty here to help authors plan, write and submit their research to science journals. I highly recommend this book for scientists at any level of their career, but especially those in the early stages. The topics covered offer expert and informed pointers for turning journal publications from 'just another paper about…', into work that influences other scientists.

There are excellent sections on writing style, and on effective, as well as scientifically valid, ways to present figures and tables. Chapters on the review process are a boon to early-career scientists who may have had little exposure to the publishing world, and these are balanced with good advice about preparing research results for publication. In short, all aspects of writing for science journals are covered.

The book is attractively priced and easy to download, or order from Amazon, and is a valuable addition to the science writer's toolkit.

About the reviewer

Stephen White holds a PhD in geology from the University of Otago, New Zealand. He completed a postdoctoral position in Germany in 2001 and taught geology for two years at The Petroleum Institute, Abu Dhabi. Since 2008, he has worked as a geoscience editor at the Geological Survey of Western Australia, editing books, maps and digital data releases. Outside work, Stephen maintains an occasional blog where he writes on diverse subjects such as philosophy and physics, and keeps a record of his recent foray into small boat building.