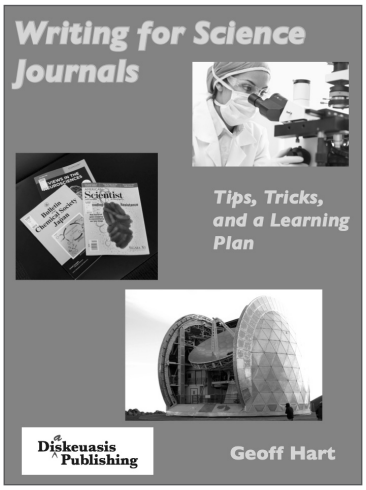
Book reviews

Writing for Science Journals: Tips, Tricks, and a Learning Plan

Hart, G. 2014, Diaskeuasis Publishing, Pointe-Claire, Quebec, Canada. Ebook, 639 pages



This book has been reviewed by Karen Shashok from Chapters 1 to 17 and by Andrew Davis from chapters 18 to 24. The present text has been truncated due to editorial constraints. More detailed comments and notes on Hart's book are available on request from Karen and Andrew.

The author introduces the book as "a practical hands-on manual" with advice based on "more than 25 years of personal experience working with researchers and journals." The chapters I read reflect G .Hart's vast expertise in different disciplines with researchers whose first language may or may not be English. The level of detail in most chapters means that readers will find an answer to almost any question imaginable – although it is also a potential drawback because most researcher-authors do not have time to read each chapter carefully to find the information they need. The author frankly notes its main potential limitation by stating that his expertise "derives from working in a small subset of the overall field of scientific research, and this means that some of my advice may be incorrect for certain specialized journals or areas of science".

Chapter 2, on ethics, is generally useful but overlooks well known sources of guidance, eg the AMA Manual of Style, CSE Scientific Style and Format, and the Good Publication Practice guidelines widely used in biomedical and health research. G. Hart's discussion of ghostwriting is inconsistent with current guidance from authorities on authorship and contributorship, and contains the troublesome statement, "Ghostwriting, in which a professional writer prepares a journal manuscript on behalf of a researcher, is not inherently unethical."

Chapter 3 contains good advice on choosing a journal, and Hart's imperative "*Never* do this" (ie submit a paper to more than one journal simultaneously) is a great lesson in how effective italics are when used sparingly.

Chapter 4 explains outlining, which G. Hart feels is necessary before authors begin to draft the text. This may not be the best approach for all writers, however, because it can lead some to procrastinate by endlessly tweaking the outline, and because the most efficient, effective writing and revision process will be different for everyone and will evolve as authors become more proficient writers.

Chapter 5, on word processor software, explains well why belaboring style and formatting details in a manuscript is a waste of authors' time and potentially counterproductive. Hart usefully (but briefly) hints at problems with Word's codes for language (and formats, outline styles, and other things). When copied over from different files, these codes can interfere with manuscript preparation and waste authors' time by necessitating multiple edits to find and remove.

From chapter 6 to 17, G. Hart's advice is framed to teach researcher-authors what they can do to 1) help gatekeepers understand their manuscript, and 2) help readers of published articles understand and interpret their information. In almost all cases his prescriptive do-it-this-way advice is bolstered by a good explanation of how his recommendations benefit readers and ultimately the trustworthiness of the research literature.

Hart emphasises complete, accurate reporting of the methods and results, and urges researchers to uphold the core scientific values of reliability, transparency and reproducibility. He notes the pitfalls of self-delusion, subjectivity and unconscious bias, and reminds readers to consult often with other experts such as librarians and information scientists, methodologists and statisticians. His focus on best research publication practices in terms of both technical content and research ethics is welcome, because it will hopefully dissuade authors from cutting corners.

The book will help enable authors to take direct control over the quality of their research publications – which they must do because the ability of peer review to catch honest but potentially invalidating errors seems to be declining, and because many publishers (at least in the experimental and health sciences) no longer copyedit accepted articles as carefully as they used to. Hart is wise to remind authors frequently to double-check everything themselves, especially their methods, data, statistics, figures and tables. He encourages authors to aim for standards of methodology, reporting and writing that are, in my experience, higher than what we currently see in many if not most published articles.

Although the book was written for researchers it is equally useful to those who train them in writing and publishing. Principal investigators who oversee publication by members of their group will also find the book valuable because it provides good guidance in areas where peer reviewers sometimes provide insufficient feedback or make unhelpful requests. Even journal editors and publishers would benefit from a careful reading since the author explains many methodology, data reporting and technical editing points that publishers handle inconsistently and often provide no guidance on.

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The book includes the whole field of scientific writing and publishing. These aims cannot be contained, despite such a huge number of pages, in a single book without some sections being superficial or truncated. And a single author cannot be an expert in all of the areas encompassed by the whole field of scientific writing and publishing. The intended readership is not in a position to know which sections are superficial or truncated. Neither are they able to detect the errors produced by superficiality or lack of expertise, or to know that points firmly stated in the book as correct are, in fact, very debatable.

There is much of good sense in the book, of course.

It is very important, for example, to stress, as G. Hart does (page 423) how very rapidly science publishing is developing. Science publishers are already implementing his description (pages 424, 432) of the future. Interactive figures and datasets are planned to be the norm by 2020 so G. Hart is right to inform the intended readership of these developments.

G. Hart is also good on the problems facing scientists from non-English language backgrounds (page 436). Though it would be useful to point out that such scientists often know apparently complicated scientific terms better than simple English alternatives. Thus "tree diameter" better than "tree girth", "gradient" better than "slope".

It is also fundamental that authors write for their readers who don't know the material (page 487). This should be a major theme of any course on scientific writing (and certainly is of mine). Why is this so hard for authors to grasp? Clearly identifying your audience helps authors remember to write for their readers and not for themselves. A clear idea of the audience you're writing for is the best way of guarding against writing for yourself.

Likewise, it is good to point out that the prose of authors is often unclear (page 488). Yes indeed – but this seems to be difficult for many authors to accept their prose is opaque but they insist they need no help!

The problems in this book unfortunately hide and obscure the many good things.

I'm worried, for example, by an Ethics section that doesn't even mention the ICMJE recommendations or COPE (let alone EASE!). And on statistics, G. Hart repeats the often believed but erroneous view that the Kruskal Wallis test is some kind of equivalent of one-way analysis of variance. It isn't, it doesn't partition variance and doesn't test similarity of means but of medians. Recommending statistical blocking without warning about appropriate scale is dangerous. It is likely to produce incorrect results.

Other problems are more insidious.

The best recommendation about genitive 's', for example, would be not to use it rather than to give such a short and incomplete explanation (page 445). It's an English peculiarity and often misunderstood. Even English native speakers misuse it frequently:

We measured soil's moisture.

Possessive 's' should simply be excluded from scientific English. It's never necessary as it can always be replaced by a prepositional genitive or nouns in apposition, eg *We measured soil moisture*. Or *We measured the moisture of the soil*.

G. Hart's statements on peer review will greatly mislead authors. He believes (page 540) that the "primary purpose of peer review is to ensure that you publish the strongest possible manuscript". But this is fundamentally in error, the primary purpose of peer review is to ensure that the **journal** publishes only manuscripts that contribute to the **journal's** good reputation. Authors need to have this clearly in their mind or they will fail to focus their manuscript on the journal's requirements.

Furthermore (page 542), it's difficult to accept G. Hart's statement that "reviewers will usually work hard to find ways to make it possible for you to publish your paper". This is not at all my experience. Reviewers are short of time and spend on a manuscript the minimum of time needed to reach their decision on what to recommend to the journal editor. It is not the job of a referee to edit or revise a manuscript and in the 30 years of my experience I've not known any of my colleagues do so.

In summation, there is much good in Hart's book, but also much that's problematic including a fog of minor errors and debatable points. The intended readership of this book, through lack of experience, may not be able to separate the good from the problematic.

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