

Writing for Publication

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I would like to propose thirteen rules — a Baker's dozen — that you might find useful in helping prepare manuscripts for publication in the scientific literature. These rules are based on experience as an editor, and as a writer of a number of scientific articles.

Rule Number One: Have something worth reporting. All good medical writing begins with an idea that the author wishes to communicate. Sometimes poor articles in the literature are traceable to ideas which were poorly developed or ideas which were not worth reporting to begin with. There are many different ways to publish a good idea worth sharing; these may take the form of case reports, reports of research projects and clinical trials, editorials and review articles. Usually the last two are solicited by editors from authorities in a particular field and are not appropriate for the occasional writer or the person who is first beginning to publish. **Statistical validity** is also another pertinent point, namely are the conclusions reached by the author statistically valid? If they are not, sometimes it is worthwhile enlarging the study rather than report something which may ultimately prove to be meaningless. There is no doubt that because of the "publish or perish" attitude held by the academic community and by the purveyors of grants, many articles appear in the scientific literature which otherwise probably ought not be published. It should be incumbent upon the **author** rather than the editor to determine whether something is worth reporting, and consultation with a statistician prior to undertaking a project should help insure its validity.

Rule Number Two: Begin to write. This is often the hardest part of all. With busy schedules we are short of time, and sitting down to actually put pen to paper may be hard. But one must simply start, however poorly, and then revise. Rare is the man, like Henry Sigerist, the great medical historian, who can spin out superbly finished writing at one sitting, or like Anthony Trollop, the prodigious 19th century novelist, who can repeatedly sit down each morning and grind out 10,000 words! No, I rather have in mind the admonition of Peter Quince, who in a delightful article entitled "How to Write an Article" says:

Seize your pen and start writing at once. Do NOT begin at the beginning. Choose some aspect of the subject which is uppermost in your mind at the moment and write fully about it. I repeat do NOT begin at the beginning. The beginning will come later and will come unexpectedly. Beginnings need that flash of genius

which you cannot conjure up to order; and endings need damnably hard work for which you are not yet ready. So begin anywhere in the middle, and within an hour or two you will have a nice sized chunk of good easy writing; and surely it can be fitted in somewhere? Well, we'll see. It may; or it may eventually have to be scrapped. In either case, it will have exercised your mind. Probably it will have exposed gaps in your material, you will find the whole subject opening out in many directions. This is natural growth and must not be interfered with yet. A time will come when selection will be imperative in order to keep the article within bounds.¹

Rule Number Three: Read a good book on style. Start with one of the short inexpensive ones such as Strunk and White² or King and Roland.³ Preferably the medical writer should have these superb, little texts in his own library. Both are available in paperback. Other classic works are Morris Fishbein's *Medical Writing*, Clifford Hawkins' *Speaking and Writing in Medicine*, Sir Ernest Gower's *Plain Words* and Richard M. Hewitt's *The Physician-Writer's Book*. These are more expensive, but are excellent reference works. To consult them during the actual writing of the manuscript will help you avoid many pitfalls.

Rule Number Four: Use the active, not the passive voice. It seems that persons who write for scientific journals feel that the passive construction sounds more "scientific". It is not, and should be avoided. Consider these two sentences, the first 15 words long in passive voice, the second 5 words in active voice:

It was not felt advisable that any further therapy should be given at this time.

We considered further treatment inadvisable.

It is also quite permissible to use the personal pronoun, and I feel that stylistic awkwardness such as "This author believes . . ." should be avoided.

Rule Number Five: Avoid long sentences. Thomas Jefferson could carry it off, but most of us lose the reader. Consider this 74 word sentence from a recent scientific publication:

While the American Society of Internal Medicine (ASIM (Resolution No. 28 in 1973, and statement on PEER review, 1970), the American College of Physicians (ACP) and the American Medical Association (AMA) (statement, 1969), like the APA, acknowledge the "primary role of education," as the ASIM puts it, none of the three finds it primary enough to merit further exploration and each organization, again affirms at length the common standard of detailed regulatory control.

Unfortunately, this type of long and involved sentence requires several rereadings to get the meaning, and I believe it only alienates the reader.

Rule Number Six: Avoid big words and gobbledygook. When I was small, my father, a Philadelphia cardiologist, occasionally would bring home physicians who were visiting from other parts of the country or other countries. They would usually come for dinner, and there was a rule in our family that children should be seen and not heard at the dinner table, at least when such guests were present. My father and this particular British physician were conversing, trying to recall the name of a third physician who was a mutual acquaintance "I think it is just a short name," said my

father. “Yes, I believe it was monosyllabic” said the British physicial, to which my six year old sister piped up “That doesn’t sould like a very short name to me”! The use of polysyllabic obfuscation is common in scientific writing, perhaps because the author’s bombast makes it sound more “scientific” or authoritative. I think it makes the author sound silly and it certainly obscures meaning and decreases clarity. It seems most common in technical and governmental writing. Consider this from a government manual:

Illumination is required to be extinguished on these premises on the termination of daily activities.

What the author meant to say was put the lights out before you leave! Or consider this, from a recently published surgical text:

The burn problem is multifactorial. For that matter, so are all clinical problems. A major burn injury therefore provides an excellent example of a complex situation demanding the multitude of time-space integrations characteristic of modern surgical treatment.

Reading that is dazzling, time consuming, and not terribly productive.

Rule Number Seven: Make an outline. When you have the data assembled and know pretty well what you hope to say, and think you have something worth reporting, then you should make an outline of your paper so that it may be assembled properly. The most common format employed for this in scientific writing is the IMRAD system, an acronym which stands for Introduction, Materials and Methods, Results and Discussion. But these are only general guidelines; following the particular format for a journal to which one submits the paper is usually very helpful.

Rule Number Eight: Pay special attention to the Introduction. The Introduction is the most important part of the paper, aside from the summary or abstract. It should be well done, and it should catch the reader’s attention. As examples, I would submit three introductions from the British literature. They are catchy and terse, and although they were introducing short articles about particular clinical syndromes, the principles nonetheless hold true for other scientific articles.

Here is described a common syndrome which most doctors have seen but about which little has been written. Like the famous Baron von Munchausen, the persons affected have always travelled widely; and their stories like those attributed to him, are both dramatic and untruthful. Accordingly the syndrome is respectfully dedicated to the Baron, and named after him.⁴

Mastitis in the male must be a very rare complication of mumps, and I have not been able to trace a case similar to the one reported here.⁵

To be struck by lightening is unusual. For a pregnant woman to be struck by lightning is a rarity. For a pregnant woman to be struck by lightning during the first trimester of pregnancy and then to continue through a normal pregnancy and to deliver a normal infant remains to be recorded. This is an account of such an event.⁶

Rule Number Nine: Pay even more attention to the abstract. Most readers will look to it first. It should be clear and simple, and you should not be afraid to repeat sentences from the text. As an example of a good abstract, I would cite one recently published by a member of this organization.⁷

Emergency pacemaker problems need to be identified early and corrected quickly. The ways in which demand and fixed rate pacemakers fail produce characteristic findings on physical examination, electrocardiogram, xray, and radio-auscultation. The causes of pacemaker failure are: battery depletion, broken or misplayed leads, exit block, and component failure. Accurate diagnosis and proper therapy require a systematic approach to the problem. The types of pacemakers and their functioning are reviewed.

Compare this one, also from the recently published literature:

For elitism to masquerade as peer review, for its direction to be that of adjudicative control, and for it to do so under the guise of education is common currency. It is incongruous with classical peer review and quite interdicts the bright promise afforded by a distinctly educational perspective.

Rule Number Ten: Write to be read not heard. There is a common practice (which I am sure I shall not change) of submitting abstracts in advance of meetings before papers are even written, to get them on the program. Certainly this is a definite way to achieve publication, namely having one's presentation published later as a paper. But I feel it is important that a presentation at a national meeting be just that, and should not be the final work for publication. The use of illustrations and slides, the format for tables and figures, even the very phrasing and wording employed should be different for the two formats. To **read** a paper from the podium which was prepared for publication is to make it uninteresting and stultifying, for the most part. On the other hand, most presented papers do not lend themselves well to publication and need considerable editing. In addition, the general format and the "readability" of the paper should be considered in preparing for publication, so that the reader's job may be made easier, with the salient features of the work made manifest in the summary. Perhaps the most important thing of all in submitting for publication is to follow closely the advice or information given in that publication for prospective authors. Every major journal contains this sort of communication, usually in each issue, which gives details about the proper way to prepare the manuscript for publication. It also gives important information about references lists, illustrations, and tables which makes the editor's job considerably easier and doubtless influences his judgement when considering a particular manuscript. Such considerations should not be minimized by the author.

Rule Number Eleven: The title. Avoid long titles, but if they are short, make them clear and not absurd. For example, consider this from the British literature:

A Woman With the Stiff-Man Syndrome

This immediately catches the readers attention and although it is new and perhaps puzzling, the article itself gives adequate explanation within. Contrast that somewhat catchy title with these two, both from the American literature:

Embolization of a Solitary Kidney

The Pregnant Kidney

The choice of words in these two cases makes them somewhat absurd!

Rule Number Twelve: Spare the poor librarian! Editors of various journals have different attitudes about multiple authorship, and even a prestigious journal such as the *New England Journal of Medicine* has been known to include thirteen authors' names for a relatively short article. I find it extremely hard to believe that thirteen

people could contribute substantively to the putting together of an article; if it is a question of using their patients, or using their data, perhaps they should be included in an **acknowledgements** section, rather than as an author. Certainly to do that spares the poor librarian of the Index Medicus a great deal of time. It is customary often to include the department head if you are working under someone, but I feel strongly that the person who actually does the writing and puts the article together should be listed as the primary or senior author. He who does the most work certainly should get the most credit.

Rule Number Thirteen: Shorten and revise. It is often helpful to put a manuscript aside for several days or weeks and then re-read it aloud. Often this leads to revisions of wording or phrasing which improve the paper. In addition, conscious attempts to shorten the manuscript almost invariably produce a better paper. I was reminded vividly of this when I submitted a paper to a manuscript contest. I was a resident in surgery at the time, and over the previous year had seen three interesting cases of tracheal stenosis, a narrowing of the windpipe caused by damage from a tracheostomy tube balloon in cardiac surgery patients. At that time *Northwest Medicine* had a manuscript contest for residents, the prize for which was a cash award plus an Encyclopaedia Britannica. I wrote up the three cases in manuscript form prior to sending for the contest rules. My manuscript was 17 typewritten pages; when I received the rules I discovered that five and a half pages was all that was permitted. I knew from correspondence with the editor that following the guidelines very carefully was important, so I set about revising the manuscript. It was a laborious process of revision and radical surgery which tore **me** apart even more than did the manuscript. It seems that writers think that nothing can be left out or cut away without irreparable damage to the piece. But to follow the rules, I simply **had** to trim it down. It went through a total of twelve revisions, ironically **improving** each time. And when it last reached the required length it was much better. It won the contest, and in making the award, the editor said that this was the only article he had ever received that needed no editing, which helps make it all worthwhile.

Once one has taken a good concept or idea and developed it into a manuscript, **getting it published** is the final hurdle. Picking the appropriate journal can be extremely important, since different journals have different publishing interests. Some prestigious journals receive a great number of articles per year and have a large per cent of rejections.⁸ For example the *New England Journal of Medicine* receives approximately 2000 articles for consideration each year, and rejects 83% of them. *Science* receives more than 6000 and has a 77% rejection rate. The Journal of the American Medical Association accepts only about one quarter of the three thousand articles submitted to it annually. If one chooses a less prestigious journal (and in many cases such a journal may be far more appropriate or have a more selective readership) then the figures improve greatly. In addition, if one has a co-author who is an experienced writer, or if one chooses to publish with a department head, usually the process of publication becomes much easier, since he has been there before and knows many of the problems and pitfalls. If one has something worth communicating, if one bears in mind the readership intended, considering the vast diversity of journals available, and if one makes use of the above "Baker's dozen" suggestions for writing the paper, then it is usually not difficult to get an article published.

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