



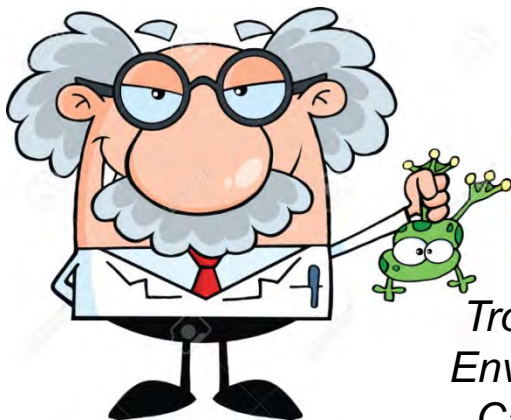
Workshop on How to Publish Papers in International Journals

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How to write the Discussion. Discussion (II)

**An Uncivilised
Approach to
Writing the
Discussion
of a Joint
Paper.**



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Reminding you of some things you should not do in the Discussion

- Tables and graphs do not explain themselves. You must state explicitly what they show and what your interpretation of them is but do not repeat what you have already said in the Results. Nothing is intuitively obvious. In scientific writing you must say what you mean.**
- Unless the information in the results is merely background material, for example freshweights and dry weights of the plant leaves used, you need to Discuss everything in your Results, otherwise why did you put those results in the paper at all? Do not forget to talk about every single Table, Graph and Figure.**
- Try not to write a Discussion that is too short (not making enough of your data) or too long. I tend to write L-o-n-g.**

Basic Structure of Discussion

- **Open by basically saying what you found out.**
- Interpret and evaluate your results in terms of the background information you gave in the **Introduction**. Any problems about the validity of your **Results**: do they concur with previous work or conflict with it.
- Use your knowledge of the literature to demonstrate the logic of the paper.
- Do not turn your **Discussion** into a devastating critique of your own work (this is often a problem in multiple authorship papers). A paragraph by one author might contradict another written by someone else. The first author has final say on this issue – when the stuff hits the fan the 1st Author gets it.
- You need to talk about where your findings lead to. If it does not seem to lead anywhere then what was the point of the paper anyway?
- Write a **Concluding** paragraph so that the **Discussion** does not end flat.
- Some journals have a separate final **Conclusion** section.

The Critical and Dangerous Nature of the Discussion Step

The Writing of the Discussion is the critical step where your ideas are put together. It is also the step where you are likely to make serious mistakes that can damage the value of the paper to your career. It is natural to look for expertise who might help in improving the paper but you must be careful.

Some rules:

- 1) Only have authors on your paper that made a real contribution. **In my experience the fewer authors the better.**
- 2) A draft manuscript is a **confidential document** shared as a mutual trust by the authors. **Do not carelessly pass it around. It is unprofessional.**
- 3) **Do not** show it to any outsiders without consensus consent. If you think someone else would be able to contribute to the paper make sure the other authors are informed and a collective decision is made. **Students often make the mistake of showing their manuscript to lots of people. They may then demand their names on the paper. Hard to say no.**
- 4) **Beware of academic vampires and predatory bullfrogs.** They prey on graduate students, post-docs and junior faculty. They go to seminars and conferences, talk to people and are very friendly. They act as if they are trying to be helpful. What they want you to do is give them your manuscript and soon after they ask or demand co-authorship. What happens often is you get the manuscript handed back with their name added on the paper!



Dinner!

I see a new
student.

Prof Bullfrog



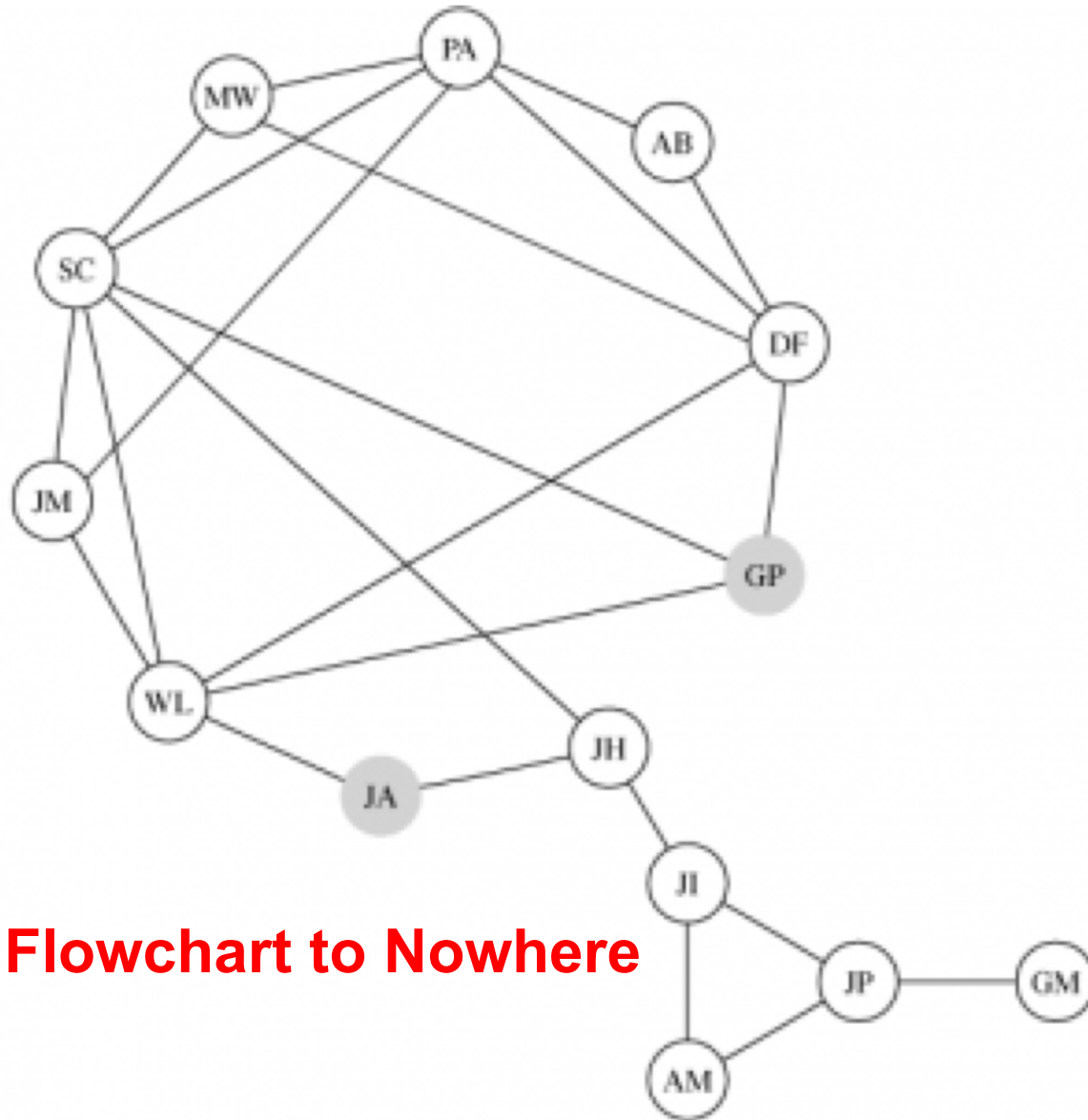
Professor Bullfrog captures another innocent graduate student. You might be more intelligent and higher on the scale of evolution but that has done you no good. **You are the victim.**⁶



Beware of Prof Dracula:

- **Hypnotic eyes,**
- **Fascination with haematology,**
- **Likes meeting young women,**
- **Central European accent,**
- **Likes bats,**
- **Wants his name on all your papers.**

Some papers fall flat on their face in the Discussion. The problems of multiple authorship can destroy a paper.

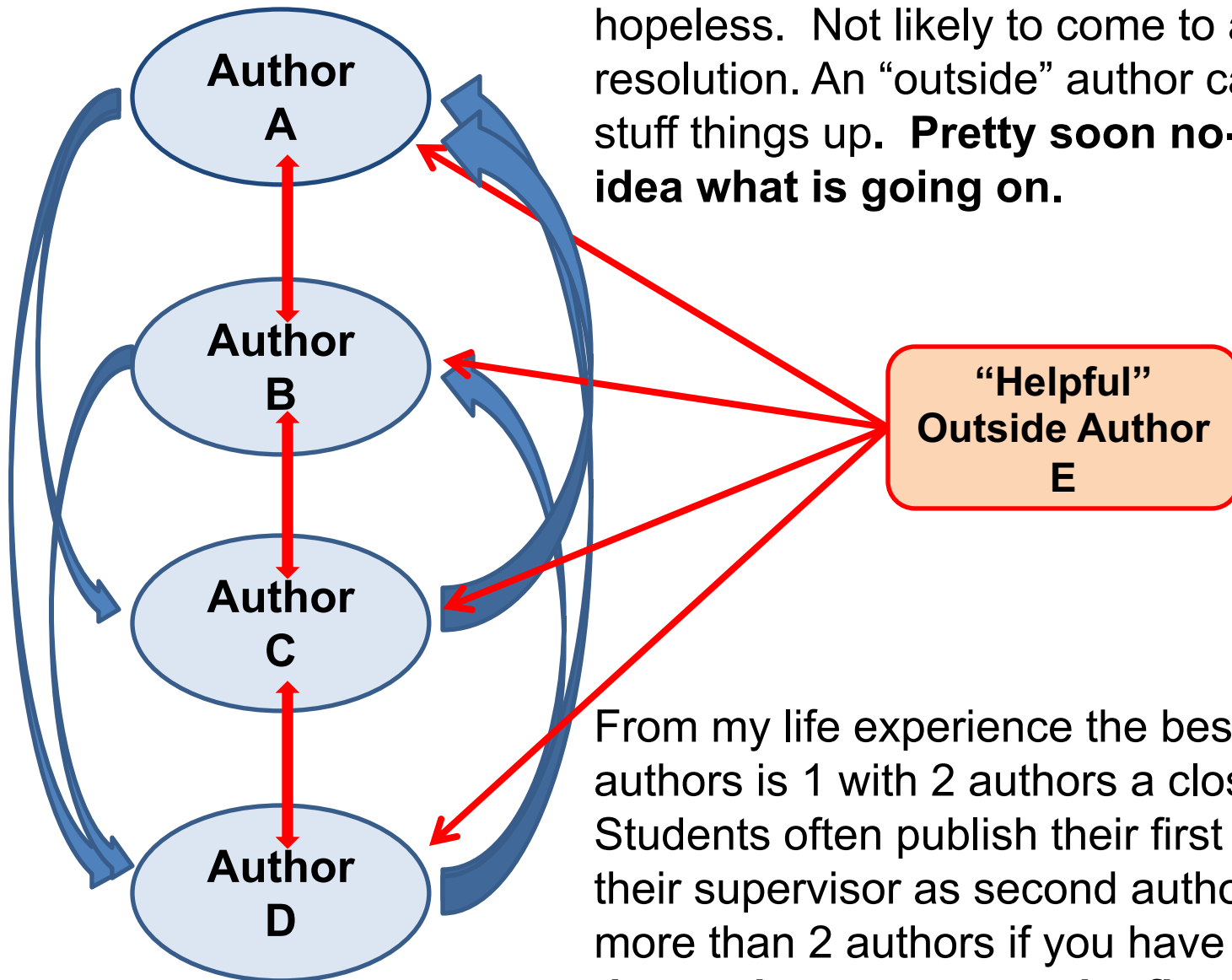


Flowchart to Nowhere

This is what can happen. Do not laugh. **Do you seriously believe that this paper will ever get finished?**

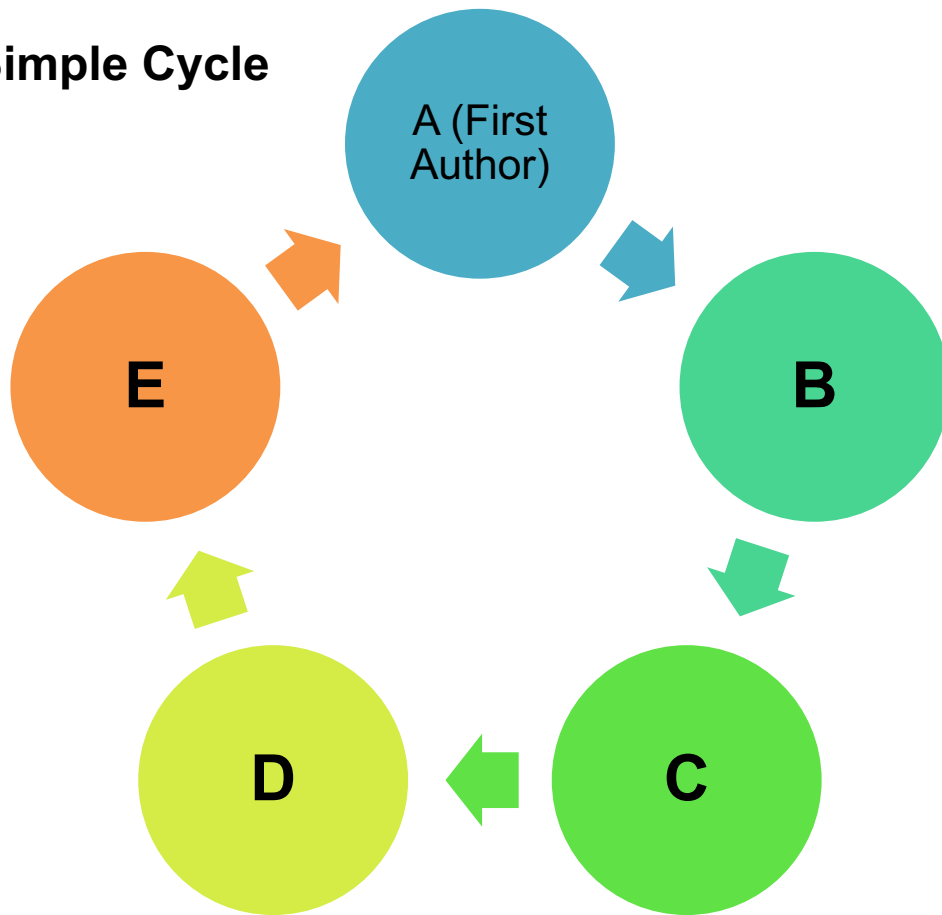
You must have a logical order of revision of your paper or you will never get it finished. A simple linear model is most likely to be successful. This is the responsibility of the first author or the corresponding author.

The Chain Model works well with 2 authors, somewhat well for 3 but beyond that it can be hopeless. Not likely to come to any sort of resolution. An “outside” author can completely stuff things up. **Pretty soon no-one has any idea what is going on.**



From my life experience the best number of authors is 1 with 2 authors a close second. Students often publish their first papers with their supervisor as second author. Only have more than 2 authors if you have to. **If you did the work never surrender first authorship.**

Simple Cycle



This can end up as a hopeless mess. The paper might never get finished.

When do you declare a stop?

The Cycle Model can go on forever and is limited by the slowest and most dead-beat author. **The first author can find themselves the author of something they have lost control of. They can also find themselves the author of a five author paper when they really only wanted to write the paper with one other person.**

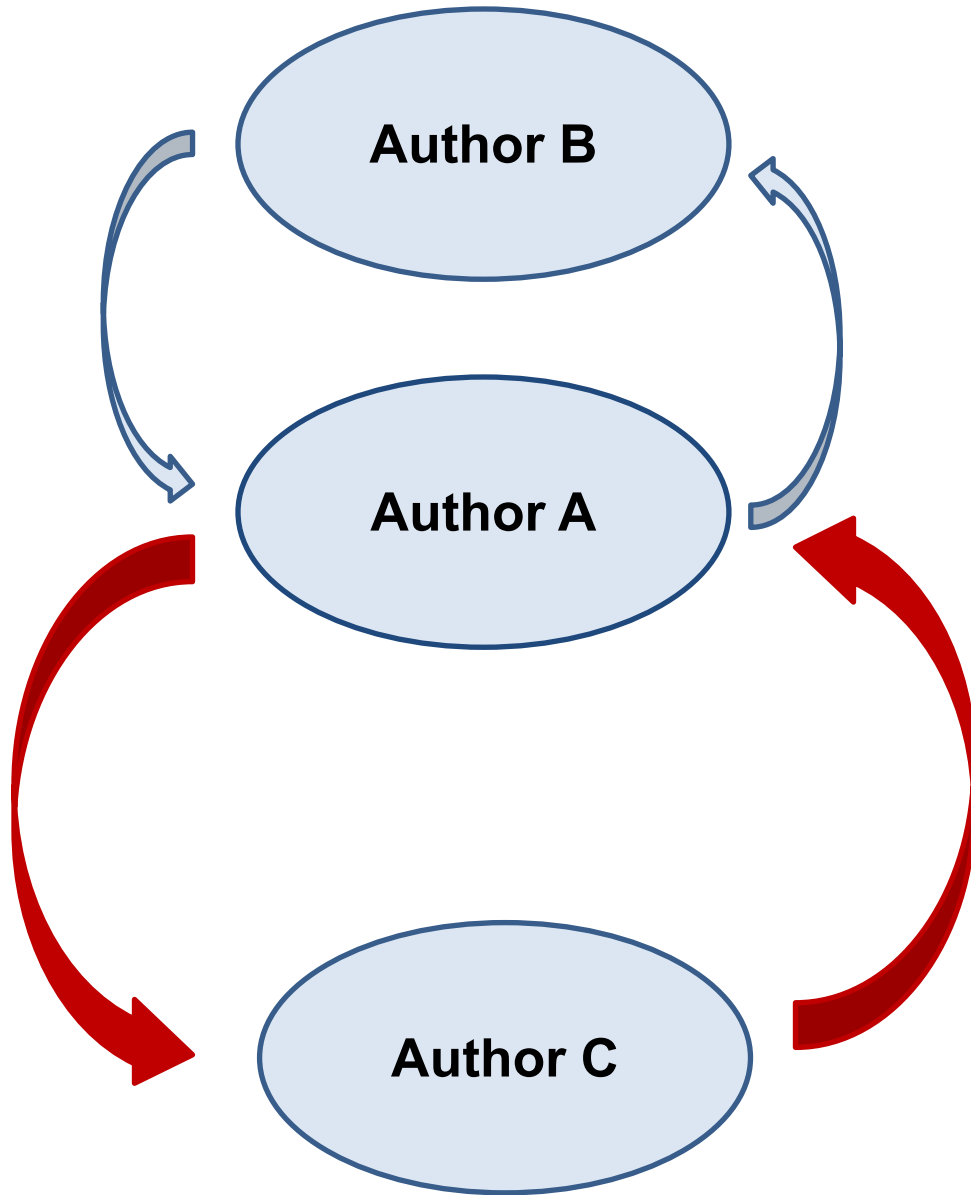
If Authors start squabbling amongst themselves you might never see the manuscript come back (see previous slides).

Central Command Model.

The first author (A) retains control and prevents squabbling between Authors B & C.

The first Author (A) can keep track of what is going on.

Often students do not have the confidence to assert the simple fact that they are the first author and they are in the driver's seat.





Writing a joint paper has not changed much over the centuries

Multiple Authorship Monster Papers

“On occasion, I have seen 10 or more authors listed at the head of a paper (sometimes only a Note). For example, a paper by F. Bulos et al. (Phys. Rev. Letters 13:486, 1964) had 27 authors and only 12 paragraphs. Such papers frequently come from laboratories that are so small that 10 people couldn't fit into the lab, let alone make a meaningful contribution to the experiment. What accounts for the tendency to list a host of authors? There may be several reasons, but the primary one no doubt relates to the publish-or-perish syndrome. Some workers wheedle or cajole their colleagues so effectively that they become authors of most or all of the papers coming out of their laboratory. Their research productivity might in fact be meager, yet at year's end their publication lists might indeed be extensive. In some institutions, such padded lists might result in promotion. Nonetheless, the practice is not recommended. Perhaps a few administrators are fooled, and momentary advantages are sometimes gained by these easy riders. But I suspect that good scientists do not allow dilution of their own work by adding other people's names for their minuscule contributions, nor do they want their own names sullied by addition of the names of a whole herd of lightweights”. (quoted from Day ¹³ 1998)

My Comment:

An obvious problem with monster authorships is who actually did the work and wrote the paper? This can be a critical issue in patents, intellectual property rights and scientific fraud investigations. Sometimes Prof Bullfrog and Prof Dracula get their name on a paper they do not want and try and get out of any responsibility for the paper if things turn sour.

The Single Author Paper

Obviously demonstrates initiative and ability but has some disadvantages. A single authored paper **must be entirely** your own work. It is not ethical to get help from others in the experimental work, data analysis or writing up of a paper and then not offer them co-authorship. But think before you give your paper to others. A co-author might cause more trouble than they are worth.

The key disadvantage of writing sole-author papers is that it is extremely difficult to spot your own omissions and mistakes. Your brain automatically corrects things sub-consciously and the conscious part of your brain is not made aware of it. Everybody thinks they are a genius but you often cannot recognise the flaws in your own reasoning or the flaws in your own data or analysis. Finishing a paper and then completely ignoring it for a while helps you to find mistakes.
Let the paper incubate for a while.

Some Important Issues

- Secondary and Primary literature: “The vast conference literature that appears in print normally is not primary. If original data are presented in such contributions, the data can and should be published (or republished) in an archival (primary) journal. Otherwise, the information may effectively be lost. If publication in a primary journal follows publication in a conference report, there may be copyright and permission problems (see Chapter 31), but the more fundamental problem of dual publication (duplicate publication of original data) normally does not and should not arise”. (quoted from Day 1998).

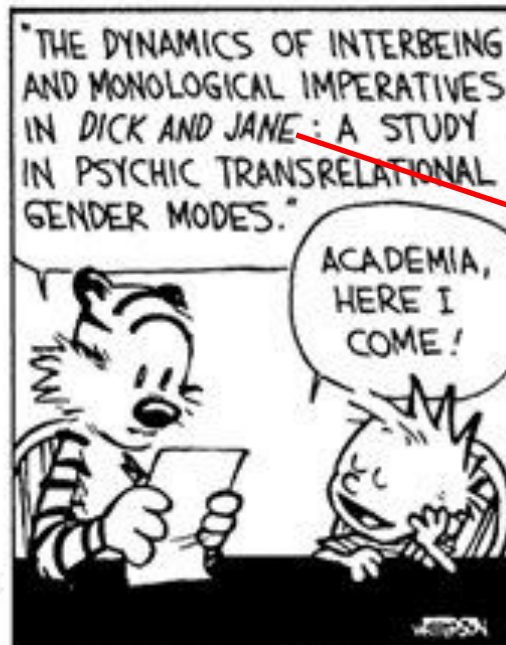
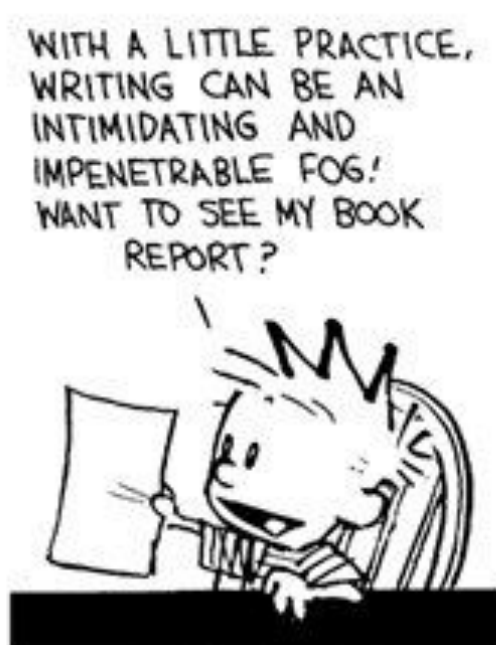
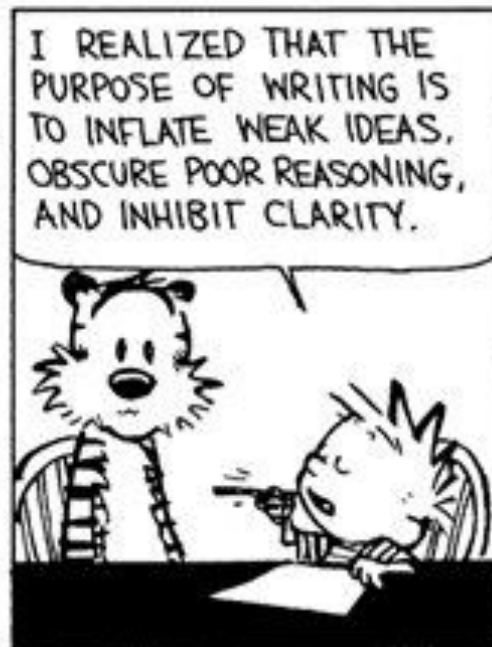
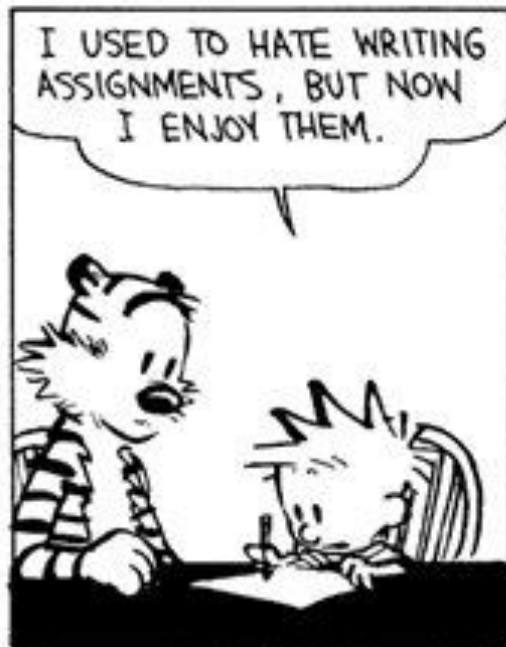
(I think Day's comment here is a bit dated. He wrote it before predatory scientific journals became a problem. Provided you say that you published some of it as a conference proceedings and put it in your reference list you are generally OK. If you try and hide that fact you are in big trouble.)

Some Important Issues continued:

As a general rule use primary literature in Books or Journals as information sources. Publication in primary literature is the aim of scientific publishing.

The literature that is not primary is often called Secondary, Grey or Non-archival Literature. The term non-archival is the most apt name for it because it reflects the fact that it is not literature that you would be able to normally find in a library. Examples of grey literature are government reports, government reports not released publically, conference proceedings of a conference which was attended by less than 30 people that was not published and is not on the internet. Most university theses are grey literature because of limited accessibility.

Do not put your work in secondary literature if it endangers your ability to publish it in a good journal or as a chapter in a book.



The Bane of Scientific Writing.

Pompous, Pretentious, Clumsy Incomprehensible Graphs and Tables, Statistical Theology and Verbose Arcane Discussions.

Today 97% of all scientific literature is published in English but 80% of your readers are using English as a second language. Write simple short sentences.

Cultural note: *Dick and Jane* is a standard school reader for 5-6 y olds in America written about 1955. Equivalent to David, Sue & Wendy books in Australia. Such children's books are full of cultural assumptions that no longer apply. Fun to read.



Fig. 1. *"Congratulations, you are now capable of writing technical, impersonal and boring papers like myself and the other gentlemen – welcome to Academia"*. Drawing by Sverre Stein Nielsen.

from Sand-Jensen (2007). Note that Sand-Jensen has given proper credit for figure.

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