

## **Andrew's philosophy behind writing papers**

You should aim to influence as many different scientists in as many different regions and countries around the world. This will give you citations. How do you achieve this?

- Make reading your paper easy!
- People will remember your paper for one reason and not several. Utilise only the data you need to make a central and important message (save surplus information for other papers).
- Do not confuse people with several different components/messages. They will not be able to decide which are very important and which are not
- Short papers are easier to read and remember. Short sentences will help
- Only have one or two conclusions, people cannot remember several.

You must love your reader and really care about their experience. Find every way possible to make reading and understanding your paper a pleasant experience!

## **Andrew's 19-point checklist for writing scientific papers**

A paper is different from a report to a Regional Government or to a research funder or a PhD thesis. Such documents might report everything you did often in chronological order. A paper is different! It is a short story, clearly focused on an important finding that is aimed to influence as wide a range of scientists as possible (not just a few specialists). People remember short, focused stories, but they forget and stop reading long unclear papers.

Please see the next page for the checklist.

| Number | Item                                                                                                                                                                                                                                                                                                              | Yes, I checked this throughout the paper? |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 1      | Identify what is unique and special about your paper. This will be the focus of the paper. Stick to this main focus/finding!*                                                                                                                                                                                     |                                           |
| 2      | Ensure the structure of the paper is as logical as possible bearing in mind your selected focus? Organise the manuscript carefully to avoid repetition                                                                                                                                                            |                                           |
| 3      | Have you taken every step to make sure the paper is as short as possible (to maintain the focus)? Less words is ALWAYS better than more words!                                                                                                                                                                    |                                           |
| 4      | Have you gone through <u>every single sentence</u> in the paper to make sure they are as short as possible (a sentence should be no more than 1-1.5 lines in A4 12 point)?                                                                                                                                        |                                           |
| 5      | Don't use unnecessary words to start a sentence like 'moreover' or 'furthermore'                                                                                                                                                                                                                                  |                                           |
| 6      | Avoid complex phrases and keep to simple words                                                                                                                                                                                                                                                                    |                                           |
| 7      | Preferably avoid using personal terms such as 'our' or 'we'. Science is supposed to be impersonal and objective.                                                                                                                                                                                                  |                                           |
| 8      | Avoid judging your own research as 'innovative' or very important', leave that judgement to the reader                                                                                                                                                                                                            |                                           |
| 9      | Avoid making over emotional statements about the results as 'very concerning, massive' or 'very worrying', leave that judgement to the reader                                                                                                                                                                     |                                           |
| 10     | Avoid using words like 'confirmed' or 'because' or 'validated'. These imply you have an absolute truth that can never be overturned or corrected. This is not how science works. All scientific information is provisional; in time it may turn out to be false! Better to use terms like 'suggests' or 'implies' |                                           |
| 11     | Use acronyms sparingly and ensure they are properly explained at the beginning                                                                                                                                                                                                                                    |                                           |
| 12     | In English the pronoun 'the' is used frequently. Do check this, for example, a sentence often starts with 'The' before the noun!                                                                                                                                                                                  |                                           |
| 13     | Make figure legends full and complete, explaining as much as possible (date samples taken, replication etc)                                                                                                                                                                                                       |                                           |
| 14     | Do not make the figure the subject of the sentence! Discuss your results and end the sentence with the figure table in brackets. For example, the highest concentrations of Zn were in the Yellow river (Fig. 6).                                                                                                 |                                           |
| 15     | Do not repeat data in the figures and tables in the text as a list. Results and discussion should be a limited summary of the main findings. The data in the figures/tables do not need to be repeated in the text                                                                                                |                                           |
| 16     | Do not use several significant figures without good reason! A value of 7.6 is better than 7.5894! This is particularly true when model estimations are given because here there will be large uncertainty                                                                                                         |                                           |
| 17     | Ensure that the amount of discussion is <u>proportional</u> to the importance of the topic. Do not distract the reader with long discussions on aspects that are trivial compared to the main focus of the paper                                                                                                  |                                           |
| 18     | Maintain that narrative thread! You must keep the reader's attention so that he can follow your story. Don't run several different stories or mess things up with information that is distracting from your storyline. If you try to put too much stuff into a bag it will break!                                 |                                           |
| 19     | The conclusions section should be as brief as possible. If permitted, bullet points are very useful. Better to stick to only 1-3 conclusions points                                                                                                                                                               |                                           |