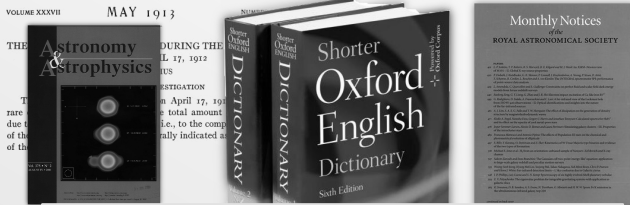


Scientific Writing 6951

THE
ASTROPHYSICAL JOURNAL
AN INTERNATIONAL REVIEW OF SPECTROSCOPY
AND ASTRONOMICAL PHYSICS

Wednesdays 10-12 Room 0.008



<http://www.astro.uni-bonn.de/~izzard/writing.html>

Scientific Writing



Today: Reviewing, editing

- Your first draft is finished... what now?
- Start the editing process!
- **THE AIM:**
 - To get your manuscript into a state which can be published
 - = a state in which it can be submitted
- Easier (?) than writing
- Have a beer/relax a bit first.



Eloquent Science chapters 13 and 20

Scientific Writing



The Editing Process

- As important as the writing process
- **May take longer!**
- Like writing a paper:
- Start with the large scale and zoom in
 - Structure→Sections→Paragraphs→Sentences
- 1 Content
- 2 Flow
- 3 Spelling, typos, grammar, punctuation

Scientific Writing



“CPR method”

- **C**oncision : make cuts
- **P**recision : make it clear
- **R**evision : repeat until good enough
- How many drafts?
 - Often **dozens**. Some people say 50!
- Drafts are *expensive*:
 - How much does one day of **my time** cost?



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Editing

- Too close to see your own faults? Ask:
 - Co-authors
 - Colleagues
 - Non-experts?
- Do not upset the referee:
 - If the author cannot be bothered, why should the referee?*
- Do *not* assume you will edit *after* the referee has reported:
 - What you submit could go straight into the journal **as it is!***



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Editing: Things to do

- Are the paragraphs (=ideas!) in the correct, **logical** order?
- Does the text flow? (also logical order)
- Is the original *point of the paper still clear*?
 - Does the paper still make the point?
 - Is the original structure the correct structure?
- Make a draft with margin notes
 - Reorganize where required
 - Print out, cut up, play with the order



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Cut, cut, cut

- Verbal baggage: we all do it, **cut it!**
- Colloquialisms, informal language: **cut it!**
- Duplicated phrasing, facts, etc: **cut it!**
- Tangential thoughts/information, non-linear information: **cut it!**



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Why keep it short?

- Who reads long papers?
- Easier to write a short paper!
- Easier to publish a short paper!
- Referee will like it more (less work)
- Journal will be happier
- Better publication record
- Fewer annoying/annoyed co-authors ...



Eloquent Science p. 171

Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell.

Scientific

Strunk and White, 2000

Erudite Vernacular Utilized Irrespective of Necessity

Most texts on writing style encourage authors to avoid overly-complex words. However, a majority of undergraduates admit to deliberately increasing the complexity of their vocabulary so as to give the impression of intelligence. This paper explores the extent to which this strategy is effective. Experiments 1–3 manipulate complexity of texts and find a negative relationship between complexity and judged intelligence. This relationship held regardless of the quality of the original essay, and irrespective of the participants' prior expectations of essay quality. ... Experiment 4 directly manipulated fluency and found that texts in hard to read fonts are judged to come from less intelligent authors. ... Implications and applications are discussed.

Oppenheimer, 2005



Ig Nobel

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Practical editing

- Take a break. Beer, chocolate, walk ...
- Get in the mood for editing
- Avoid email/phone/internet
- Print your draft
- Highlight the main points in
 - Abstract
 - Introduction
 - Body
 - Conclusions



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Practical editing

- Check that the title and abstract are consistent with the article contents
- Check **journal style guide**
- Spelling, punctuation, etc.
 - Get it wrong: look like an idiot
 - **NOT the job of the editor!**
 - Or the referee!
 - Do you **trust** the editor to get it right?

Who may not write English as well as you... and may well make *scientific* mistakes.

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Practical editing

- Read your manuscript
- If you have to read something twice, it needs work!
- Multiple reads with different purposes:
 - **Argument, grammar, flow, typos/spelling**
- Read it backwards (reduces familiarity)
- Check **figures, tables, captions**, appendix, acknowledgements, citations etc.
- **Read it again**

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Self improvement

- You want to improve (I hope!)
- Write a list of your weak points
- WORK HARD on them!
- So what if you have a Bsc/Masters/PhD/postdoc/position ?
- You *never* stop learning!



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Getting Feedback

- “Your paper is rubbish!” does not help
- Is the science bad?
- Is the writing bad? (or both?!)
- Get feedback from someone you trust
- Do not look for **sycophants**
- Find someone intellectually challenging
- Ask non-experts?
 - Before asking, fix as much as you can yourself – if you cannot be bothered, why should they?

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Getting Feedback

- Give instructions to your editor
 - Check the science?
 - Check the structure?
 - Check the spelling? Grammar? Etc.
- Give a seminar on the topic of the paper
 - In institutions where you will be criticized
 - Good for scientific feedback
 - Sharpens ideas
 - Do it as part of the writing process



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Mistakes and Finishing up

- If you make many small mistakes ...
- You probably make **LARGE** ones too.
- Learn to make fewer mistakes at *every stage* of preparing your manuscript
- When are you finished editing?

Fewer than one mistake per page

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Giving Feedback

- Almost nobody likes criticism
 - Positive feedback : constructive criticism
 - Phrase negative comments as questions
- Science content?
- Or presentation/style?
- Or Both?
- What are your constraints?
 - Who is it for?
- See today's exercise...

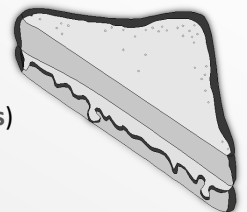


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Giving Feedback

- **Sandwich** criticism between positives
- Explain your reasoning
- Give evidence for it (e.g. citations)
- Suggest new ideas/revised text
- Say why the paper benefits...
- Remember to review what you are given,
 - not what you would have written!**

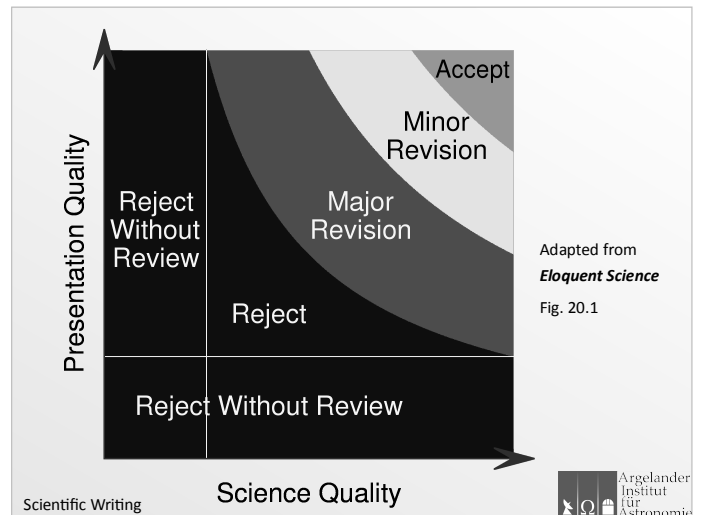


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Journal Review Results

- Four options:
 - **Accept**
 - **Minor** revisions (often not re-reviewed)
 - **Major** revisions (back to the referee)
 - **Reject** (oh dear!)
- A journal review is usually anonymous
 - Referee might want credit
 - Or know the authors
- I usually only reveal my name if review is **positive!**



Typical review structure

- **“Cover” statements**
 - “Paper on xyz by authors *a, b* and *c*”
 - Outline significance of the work
 - Summary (for the editor and authors)
 - Recommendation
- **Critical points**
 - Fatal problems
 - Major comments
 - Minor comments
 - Typos, spelling errors etc.

Peer Review Exercise

- **Read (twice!)**
- **Review**
- **Edit**
- **Discuss**