



**NOAA
FISHERIES**

Engage with scientific reviewing: understanding and contributing to the peer-review process

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Learning objectives



Define your role as a reviewer

Apply different types of review

- Science
- Line or copy edit
- Proofread

Decide how to respond to reviews

You've got mail

Invitation to peer-review

- Colleague (draft)
- Boss (policy paper)
- Journal editor (manuscript)
- Student (thesis)
- Grant agency (proposal)



What do you do?

1. Have enough time?
2. Within expertise?
3. Conflict of interest?



Should you accept?

no

Recommend alternative

yes

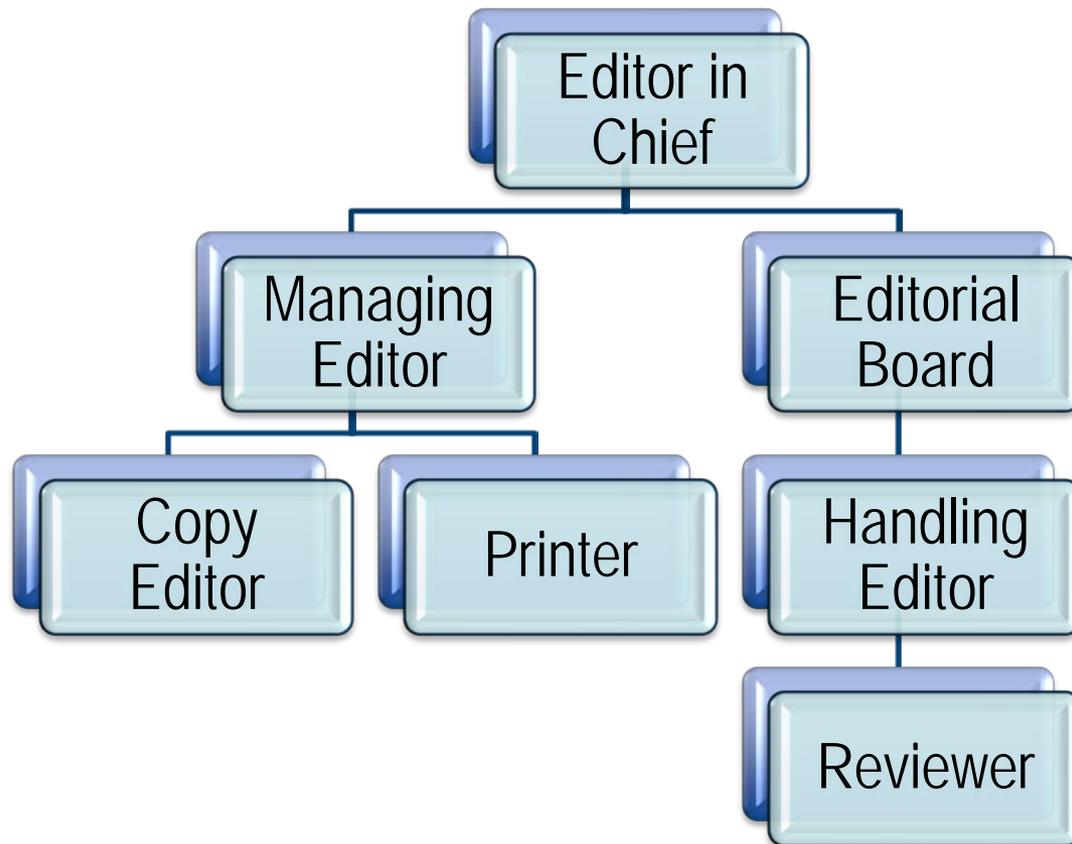
Clarify your role

- Full review
- Spot review
- Copy edit
- Proofread

Clarify the document's:

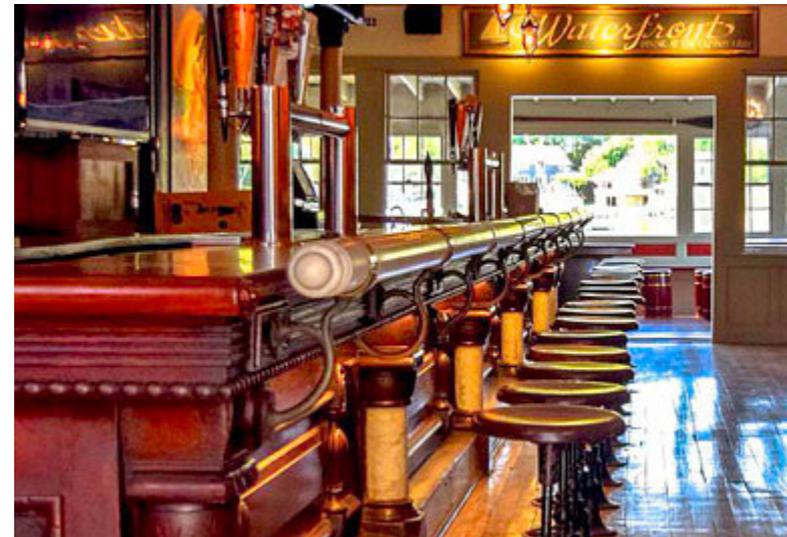
- Purpose
- Audience
- Format
- Politics

Differing review scenarios



Formal

At the Captain Kidd, Woods Hole



Informal

A full science review



Read critically

- Form, style, content

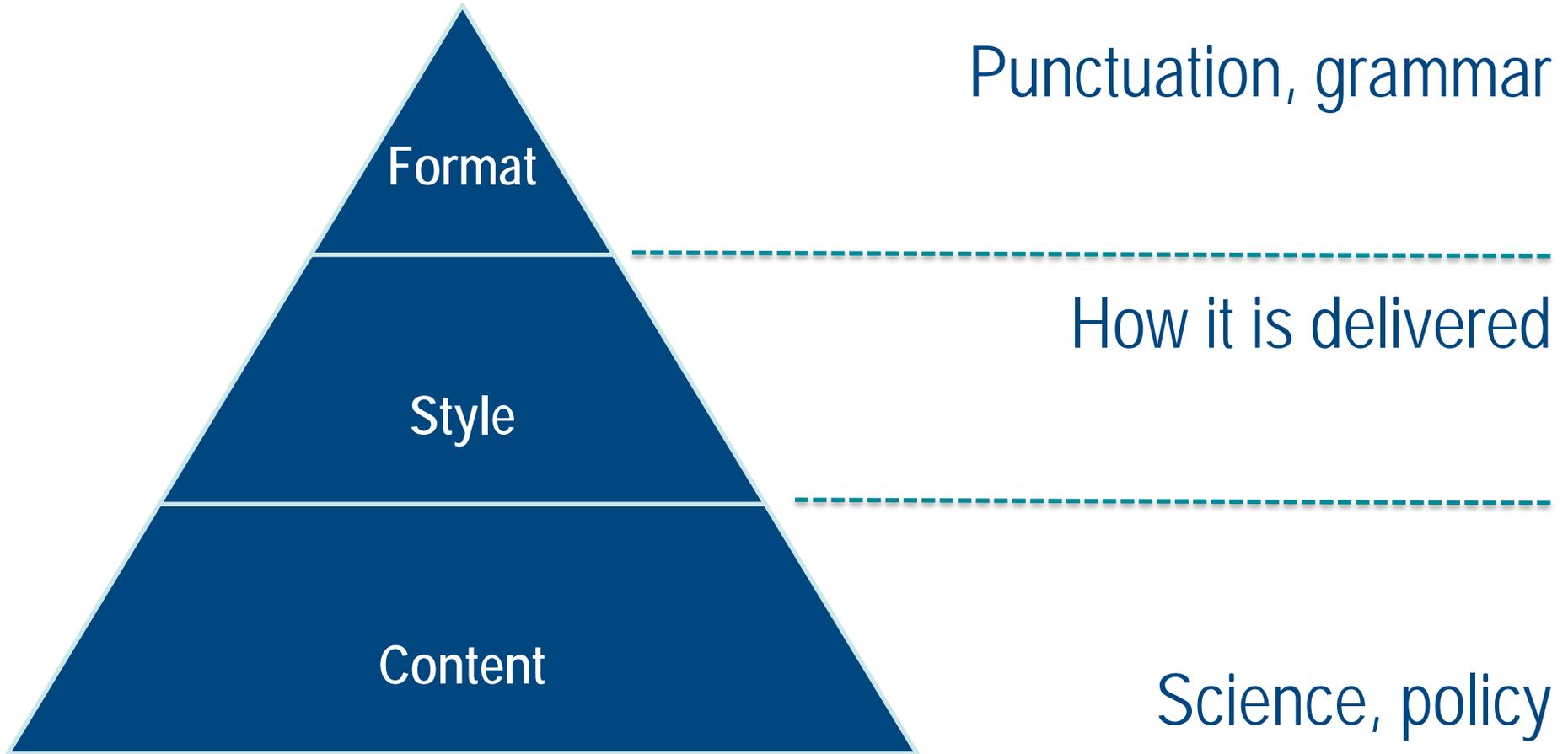
Prioritize your criticism

- You need not fix everything

Communicate your criticism

- Summary, major, and minor comments

Read critically



Categorize your science criticism...

Originality

Framework

Scope

Presentation

Study design

Methodology

Analysis

Interpretation



... to diagnose problems
and frame your response.

Prioritize your criticism (minor, major)



Format

- Split infinitives versus constant misspellings

Style

- A few awkward sentences vs. a series of poor topic sentences

Contents

- Sample size doesn't add up vs. not reproducible

Ethics

- Missing a key historic reference vs. plagiarism

Beware of common biases



Reject a paper that defies established dogma

Less scrutiny to a senior or established author(s)

Negative results need not be published

The paper needs more attention to your specialty

Ennui (noun)

a feeling of utter weariness and discontent resulting from satiety or lack of interest



Vague title

- “Two Fish in a Pond”

Listless abstract

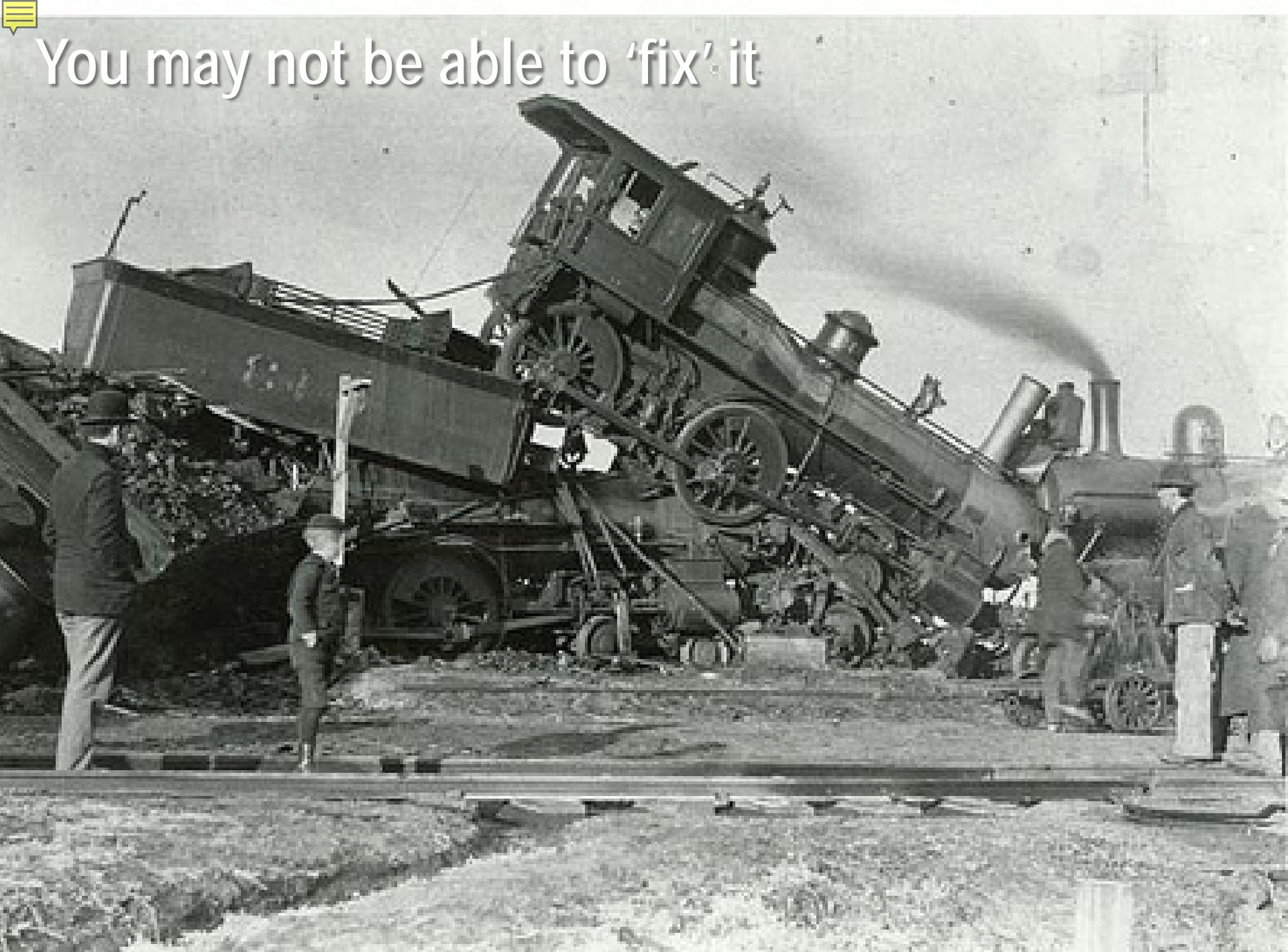
- “The results will be discussed.”

Weak thesis

- Lacks discovery or criteria to accept/reject



You may not be able to 'fix' it



Communicate your criticism to the authors

General summaries

- The paper's main point
- Your main impression, put the paper in some context
- A (or a few) key strength(s) & weakness(es)

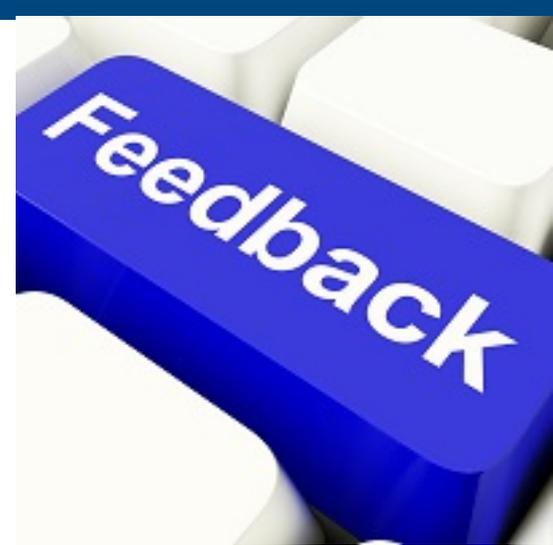
2-4 major points of concern

- Identifying remedies, too.

Minor

- Line-by-line editorial comments

Date it. Sign it?





Communicate your criticism to the editor



Be more candid

- But don't disagree with your comments to authors

Clarify your expertise, if appropriate

- If you could not evaluate the math, for example, say so

Recommend whether to publish or not

- Add a comment about your certainty in this recommendation

Respond with tact



Balance your negatives with some positives

Focus on the manuscript and not the authors

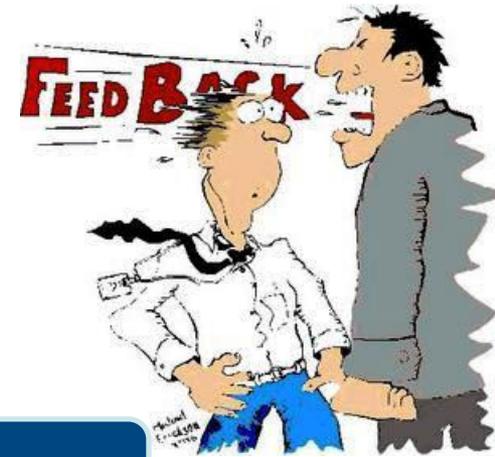
Avoid hard value judgments (e.g., NEVER do this)

- Some journals may do that!

Be impartial

- But show some emotion or engagement

More tips on delivery



Control tone with reason

- I recommend this, because...

Perhaps a question is best

- What are the error bars in Figures 2-5?

Give the choice back to the authors

- Figure 7 and Table 9 present the same information, so why have both?

Give yourself time to reflect and revise your review

- If only an hour, or preferably, a day or more later

More than just accept or reject

Accept

Accept with minor revisions

Accept with major revisions

- May require re-review

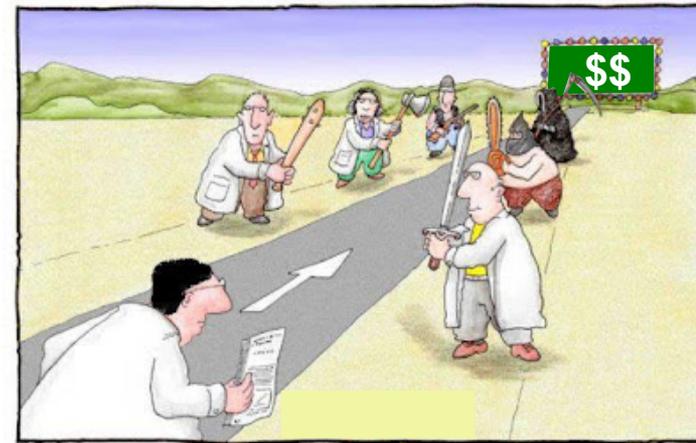
Resubmit a revised manuscript

- Likely requires re-review

Reject



To fund or not?



Relevance to the program (25%)

Technical or scientific merit (30%)

Applicant qualifications (15%)

Project costs (10%)

Outreach, education, or application (20%)

What's in it for you?



You review within your expertise

- Now you read a paper before it is published

Spend time researching responses

- You might learn something new

Sharpen your critical thinking skills

- Making you a better writer and scientist

It will improve tact and social skills

- A good review will expand your network

Beyond the science: line or copy edits

 delete

Delete extra letters or unnecessary ~~darling~~ words.

 para

 Adds a new paragraph.

... stet

Let it ~~stand~~. (Indicates that a correction or alteration should be ignored.)

 transpose

Transpose a letter ~~me~~ or a word that's misplaced been.

space

Add a ~~space~~.

 delete and close up

This is used so the typesetter knows he ~~should~~ delete and close up the space.

 close up

A way to remove pesky ~~extra~~ spaces.

 spell out

A circled ① or ② or an abbrev means the word should be spelled out.

 period

Dr ^o Author omitted something small but significant. ^o Circling is also used to

Proofreading tips



Focus on title, abstract, and illustrations

Not all words deserve equal attention

Put it down and come back later

- Or take it to a different setting

Read backward or out loud

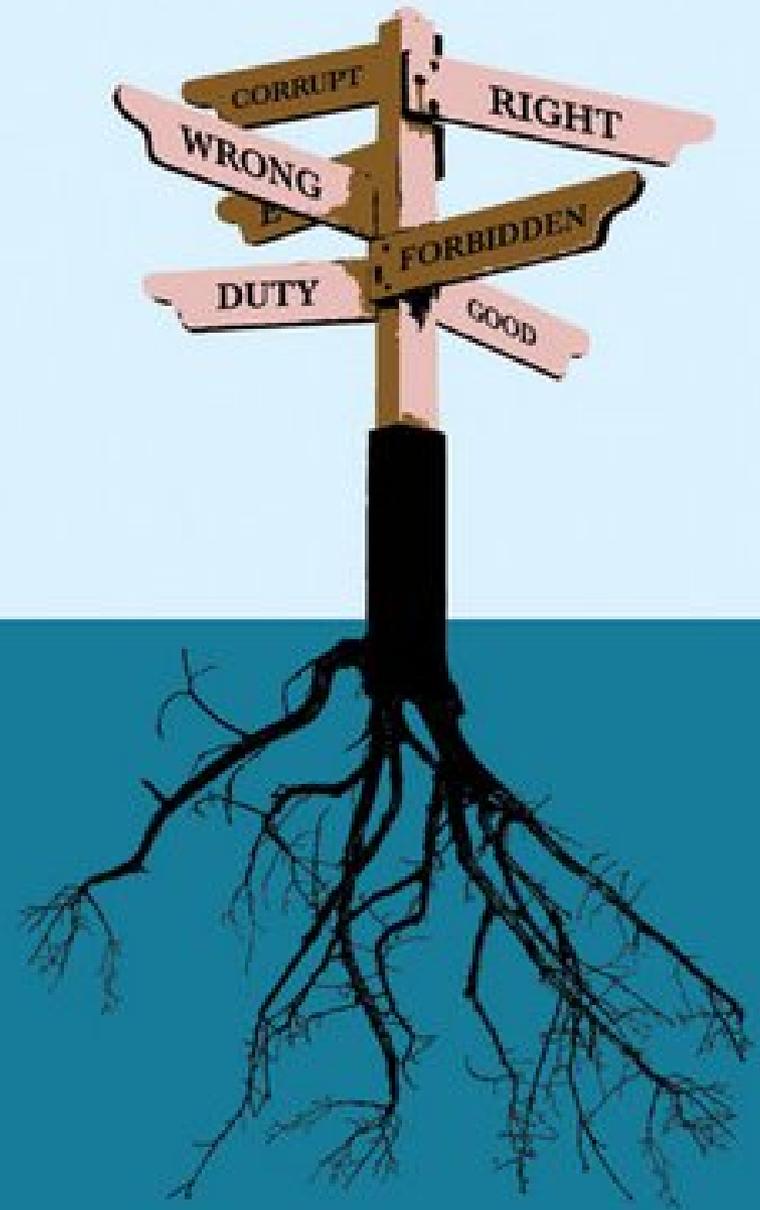


Yours

Conflicts of Interest
Confidentiality
Contact with authors

Theirs

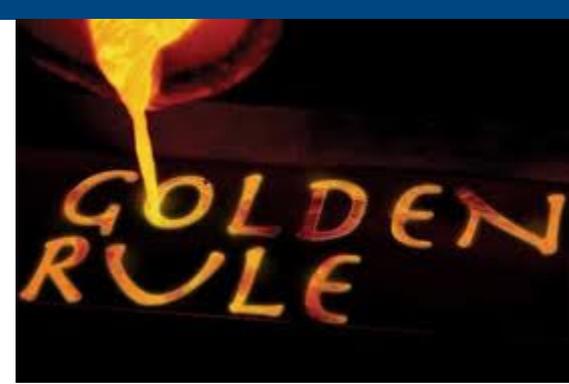
Authorship
Conflicts of interest
Dual Publication
Salami science
Plagiarism
Data falsification
Image manipulation
Image beautification





Responding to reviews

3 golden rules



Answer completely

- Point by point

Answer politely

- Remember they're volunteers

Answer with evidence

- Especially when you disagree

Rejection

Put some distance on this

- You should respond or revise with a cool head

Identify the main reason

- Discern if this is fatal or not

If not flawed, revise

- Probably selecting a new journal



The finish line

Use your software tools completely

- Spell check, search and replace for consistency.

Re-read your revised ms. later

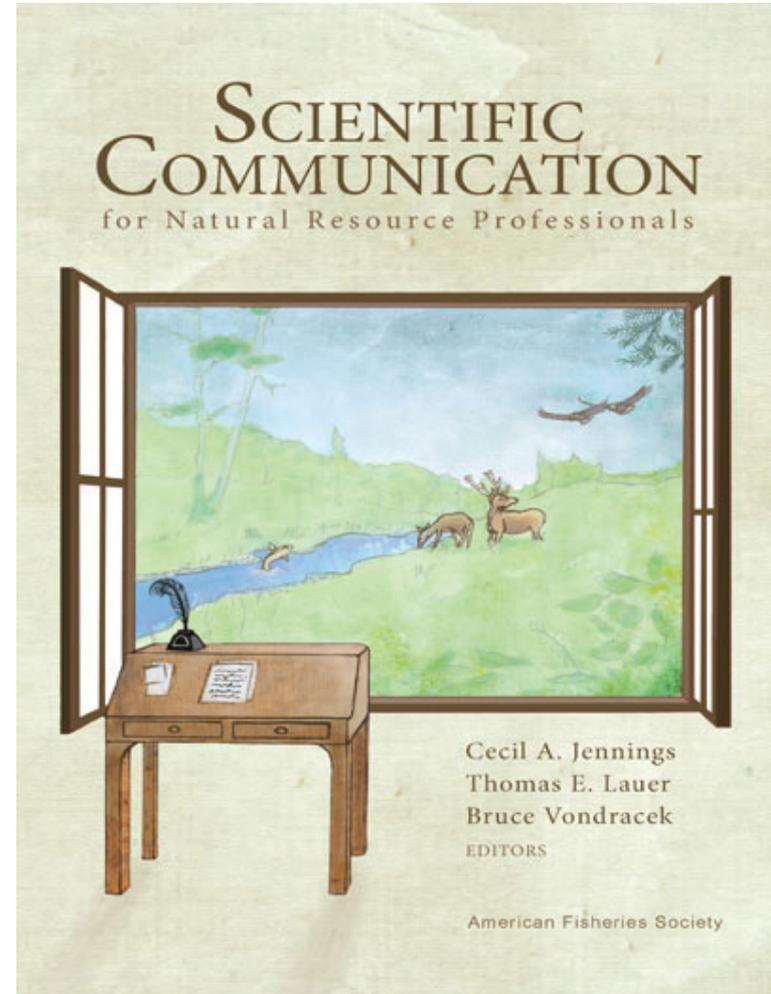
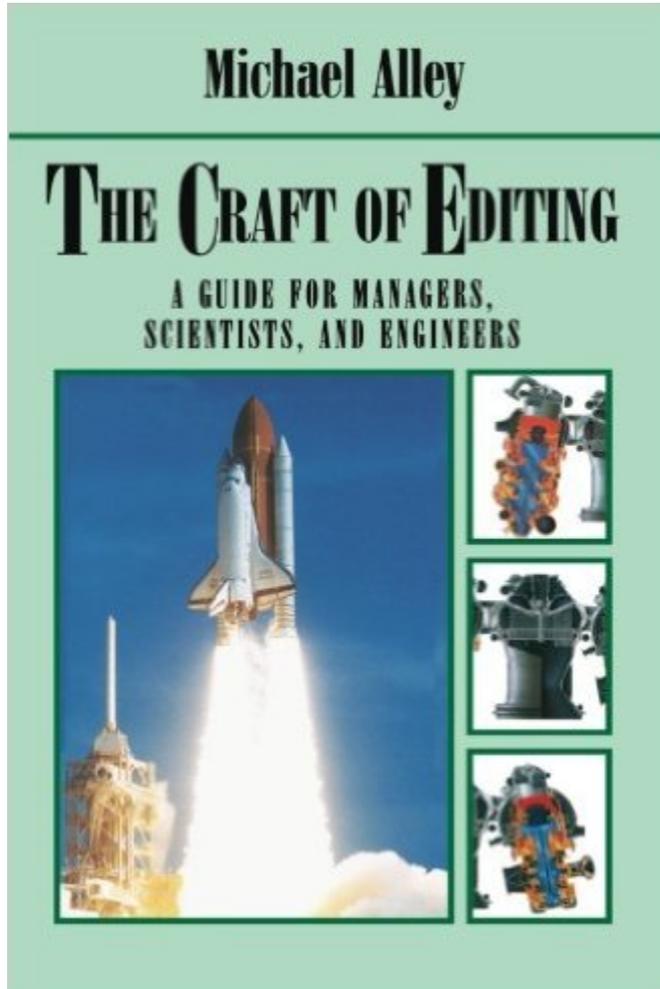
- Focus on title, abstract, legends, etc.
- Look for new issues resulting from revision

Proofread the printer's proofs

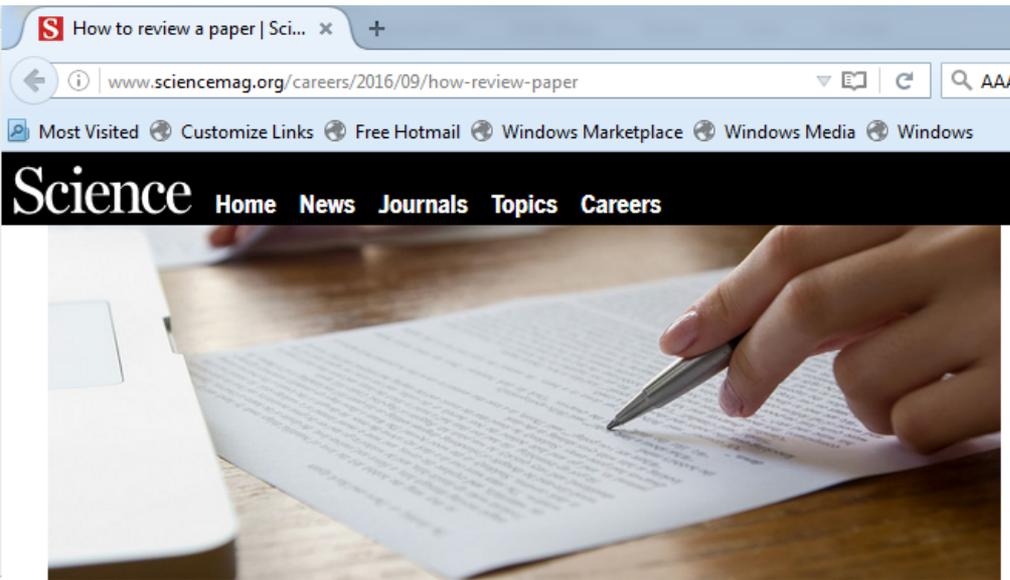
- New mistakes can appear at this stage



More resources



On the internet, too.



A good peer review requires disciplinary expertise, a keen and critical eye, and a diplomatic and constructive approach.

Credit: dmark/iStockphoto

How to review a paper

By Elisabeth Pain | Sep. 22, 2016, 5:00 PM

As junior scientists develop their expertise and make names for themselves, they are increasingly likely to receive invitations to review research manuscripts. It's an important skill and service to the scientific community, but the learning curve can be particularly steep. Writing a good review requires expertise in the field, an intimate knowledge of research methods, a critical mind, the ability to give fair and constructive feedback, and sensitivity to the feelings of authors on the receiving

How to review manuscripts

Peer review, your role and responsibilities

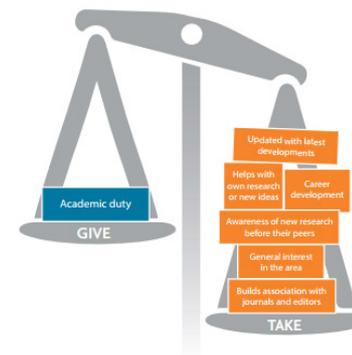
Publishing Campus

Peer review

- ...is critical because it
 - Improves the quality of the published paper
 - Ensures previous work is acknowledged
 - Determines the importance of findings
 - Detects plagiarism and fraud
 - Plays a central role in academic career development

- ...adheres to the principles that
 - It is a well understood concept
 - Without it there is no control in scientific communication
 - Journal editors evaluate and reject certain articles prior to external peer review

Why should you review?



Editors' view: what makes a good reviewer?

- Provides a thorough and comprehensive report
- Submits the report on time
- Provides well-founded comments for authors
- Gives constructive criticism
- Demonstrates objectivity
- Provides a clear recommendation to the editor

Comments to the editor

- Comment on novelty and significance
- Recommend whether the manuscript is suitable for publication
- Confidential comments will not be disclosed to the author(s)

Your ultimate checklist for reviewing a paper

First impressions

- Is the research original, novel and important to the field?
- Has the appropriate structure and language been used?

Abstract

- Is it really a summary?
- Does it include key findings?
- Is it an appropriate length?

Introduction

- Is it effective, clear and well organized?
- Does it really introduce and put into perspective what follows?
- Suggest changes in organization and point authors to appropriate citations.
- Be specific – don't write "the authors have done a poor job"

Methodology

- Can a colleague reproduce the experiments and get the same outcomes?
- Did the authors include proper references to previously published methodology?
- Is the description of new methodology accurate?
- Could or should the authors have included supplementary material?

Results and discussion

- Suggest improvements in the way data is shown
- Comment on general logic and on justification of interpretations and conclusions
- Comment on the number of figures, tables and schemes
- Write concisely and precisely which changes you recommend
- List separately suggested changes in style, grammar and other small changes
- Suggest additional experiments or analyses
- Make clear the need for changes/updates
- Ask yourself whether the manuscript should be published at all

Conclusion

- Comment on importance, validity and generality of conclusions
- Request toning down of unjustified claims and generalizations
- Request removal of redundancies and summaries
- The abstract, not the conclusion, summarizes the study

References, tables and figures

- Check accuracy, number and citation appropriateness
- Comment on any footnotes
- Comment on figures, their quality and readability
- Assess completeness of legends, headers and axis labels
- Check presentation consistency
- Comment on need for colour in figures

Learning objectives



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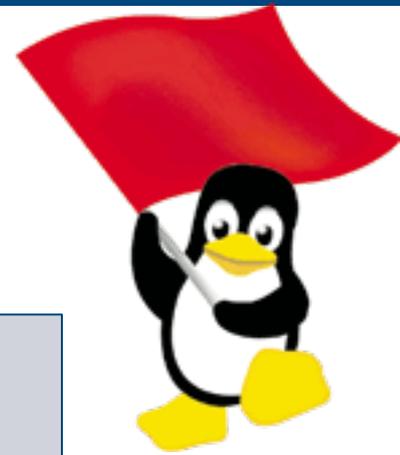
Peer-review is the big show



True or false ?

- Determines whether to fund or publish
- Improves the quality of the final product
- Detects plagiarism and fraud
- Pays big bucks
- Is not for students
- A perfect system

Chaos reigns



Title

- Misrepresents the paper

Poor topic sentences

- Rambling paragraphs or an entire section

Unnecessary or redundant tables/figures

- Editors view these as costly

Nobody acknowledged for a friendly review