Scientific English

M2 Marine Physics

Jonathan Gula
jonathan.gula@univ-brest.fr
Quentin Jamet
quentin.jamet@shom.fr

Lecture

Introduction

- Brief history of Science and scientific writing

Scientific writing

- Structure and content of a paper
- Writing and revision papers
- Writing reports, proposal, etc ...

Effective Scientific writing

- How to write more effectively

The peer-review process

- What? And How?

Activities

- Read and discuss scientific articles
- Write a short article
  Due date: **Jan. 23rd**
- Review articles
  Due date: **Jan. 30th**

Material available at: http://ocean.fsu.edu/~qjamet/share/Scientific_English/

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Tentative paper instructions

Text requirements for your paper:

- 6 publication units (1 PU = 500 words or 1 figure or table)
- Using a standard structure:
  - Abstract
  - Introduction
  - Methods
  - Results
  - Conclusion
- Use Overleaf, Curvenote, Authorea, LaTex or Microsoft Word templates available here: *https://www.agu.org/publications/authors/journals*

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The review process

- **Online materials:**
  - Elsevier: https://www.elsevier.com/reviewers/how-to-review
  - Wiley: https://authorservices.wiley.com/Reviewers/journal-reviewers/how-to-perform-a-peer-review/step-by-step-guide-to-reviewing-a-manuscript.html
  - https://www.wikihow.com/Review-a-Journal-Article

Scientific English
The review process

Structure of a review

- A summary of the **research question** (1st paragraph)

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Acceptance
  - Minor revisions
  - Major revisions
  - Rejected

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Acceptance
  - Minor revisions
  - Major revisions
  - Rejected
- Argumentation to support your decision

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Acceptance
  - Minor revisions
  - Major revisions
  - Rejected
- Argumentation to support your decision

- Your review (along with other) will help **the editor to take a decision** regarding the publication of the manuscript.

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Acceptance – *very rare*:
    - **It does not suffer from any (minor or major) flaws**
    - The conclusions are supported by the results
    - The article is well written and easy to understand
    - *You can still provide some specific comments if there are any areas that could be improved, but they should not condition the publication*

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Minor/Major revisions – *most of the time*:
    - Improvements **are needed**!
    - Minor/Major depends on the implications of the changes for the robustness/soundness of the paper
    - "*Be clear in [your] comments to the author (or editor) which points are absolutely critical if the paper is given an opportunity for revision.*" *(Jonathon Halbesleben, Editor of Journal of Occupational and Organizational Psychology)*

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The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Reject – *rare* [with the possibility of resubmission – *less rare*]:
    - The manuscript has serious flaws
      (i.e. methodological, conclusions not supported by the results)
    - Give constructive feedback to:
      - Help the authors to improve their manuscript
      - BUT also to help the editor for the final decision

Scientific English
The review process

Structure of a review

- A summary of the **research question** (1st paragraph)
- How the article **contributes** to the field (2nd paragraph)
- A decision on publication:
  - Acceptance
  - Minor revisions
  - Major revisions
  - Rejected
- Argumentation to support your decision

- *Note:You will need to accept/decline to review a paper based on the abstract only*

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The review process

Dear Dr. Jamet,

We have received a new manuscript for possible publication in … . Would you be willing to review the following manuscript?

Manuscript No: xxx

Title: "Lifecycle energy evolution of three-dimensional mesoscale eddies in the South China Sea"

Authors: John Travolta; Elisabeth Borne; Björk Guðmundsdóttir; Marshall Bruce Mathers III.

If you would like to review this paper, please click: https://www.here.com

If you do not wish to review this paper, please click: https://www.there.com

***If you cannot review for us at this time, suggestions of other qualified reviewers would be greatly appreciated. However, please do not discuss this manuscript with any potential alternate reviewers because invitations to review should be treated as confidential information.*

In order to ensure a rapid turnaround for our authors, ***we would appreciate receiving your review within the next four weeks****. If you feel that you need more time to complete this review than what was allocated, please let me know.*

Best regards,

The editor of the journal.

Abstract:

Blablabla ...

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The review process

Accept or decline a review

- Does the article match your **area of expertise**?
- Do you have any **conflicts of interest**?
- Do you have **time**?
- Need to find out more about review and peer review process?
  https://researcheracademy.elsevier.com/navigating-peer-review

Scientific English
The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

2. The Second Read-Through [~1-2 h]

3. Structure Your Report

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- Based on this first reading, you should already understand
  - The aim of the paper
  - The data/method it uses
  - Its major conclusions

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- Based on this first reading, you should already understand
  - The aim of the paper
  - The data/method it uses
  - Its major conclusions

- If this is not the case, highlight sections that need improvements

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The review process

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1. The First Read-Through [a skim-read, <1h]

- Based on this first reading, you should already understand
  - The aim of the paper
  - The data/method it uses
  - Its major conclusions

- If this is not the case, highlight sections that need improvements

- You should get a sense of whether your eventual recommendation will be to accept or reject the paper.

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- Keep in mind the following questions:
  - What is the aim, does it contributes to the field?
  - Is the paper well written? Is the text clear and easy to read?
  - Do tables and Figures add to the paper, or are they superfluous?
  - Do results support conclusions, and do they address the mains questions of the manuscript?
  - **If disagreeing with previous work** / current academic consensus, do they have a substantial case? If not, what would be required to make their case credible?

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- *What to read first can save time by flagging **major problems** early on.*
- Possible major flaws in the **method**:
  - ...

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- *What to read first can save time by flagging **major problems** early on.*
- Possible major flaws in the **method**:
  - The use of a discredited method
  - Insufficient data
  - Unclear data tables
  - Ignoring a process that is known to have a strong influence on the area under study
  - Contradictory data that either are not self-consistent or disagree with the conclusions
  - Confirmatory data that adds little, if anything, to current understanding - unless strong arguments for such repetition are made

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The review process

Constructing a review, a 3 step process

1. The First Read-Through [a skim-read, <1h]

- After this first read (+ notes),
  draft the **first two paragraphs** of your review:
  - 1st paragraph: A summary of the **research question**
  - 2nd paragraph: How the article **contributes** to the field

- At this stage, you should be in a position to decide whether this manuscript is **seriously flawed and should be rejected**,
  or whether it is **publishable in principle and merits a detailed, careful read through**.

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Does the title properly reflect the subject of the paper?
- Does the abstract provide an accessible summary of the paper?
- Do the keywords accurately reflect the content?
- Is the paper an appropriate length?
- Are the key messages short, accurate and clear?
- Should identify:
  - Any places where the meaning is unclear or ambiguous
  - Any factual errors
  - Any invalid arguments

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Save time and simplify the review by:
  - Making separate notes (don’t rely on text annotations only)
  - Grouping similar concerns/praise together
  - Noting line numbers and quote the manuscript you refer to
  - Keeping images, graphs and data tables in *clear view* (i.e. separated screen/page)

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Grammar and typos:
  - Correct them if they are few
  - Make a comment if too many
  - *A 2010 study of nursing journals found that 79% of recommendations by reviewers were influenced by grammar and writing style* (Shattel, et al., 2010)

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Introduction: does it
  - Sets out the argument?
  - Summarizes recent research related to the topic?
  - Highlights gaps in current understanding or conflicts in current knowledge?
  - Establishes the originality of the research aims by demonstrating the need for investigations in the topic area?
  - Gives a clear idea of the target readership, why the research was carried out and the novelty and topicality of the manuscript?
  - The aim of the study should clearly appear toward the end, with no surprise!

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Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Materials and Methods:
  - Is there enough details to repeat the experiments and replicate the results?
  - Is the dataset robust enough (i.e. statistically speaking)?
  - Do they follow best practices (ethical standards, health and safety of participants)?

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Results and discussion: should follow a certain pattern
  - First, describing in simple terms what the data show ...
  - … with proper reference to statistical analysis
  - Then, evaluating the potential tends and discussing the significance of the results
  - The outcome should be a critical analysis of the data collected

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Conclusion:
  - Should reflect upon the aim of the paper (achieved or not?)
  - Just like the aims at the end of the intro, they should not be a surprise
  - If the conclusions are not evidence-based, it is appropriate to ask for them to be re-written.

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Images, graphs and tables:
  - If it does not speak by itself (i.e. need to read the manuscript), then it should be improved
  - Look for the consistency of units, labels, titles
  - If the information is clear:
    - Does the results seem plausible?
    - Does it support the paper's discussion?

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The review process

Constructing a review, a 3 step process

2. The Second Read-Through [~1-2 h]

- Abstract [+ keypoints]: Does it
  - Do justice to the manuscript in this context?
  - Highlight important findings sufficiently?
  - Present the most interesting data?

- Review the list of reference
- Scan for plagiarism (can ask the editor for guidance)

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The review process

Constructing a review, a 3 step process

3. Structure Your Report

- Informal or Formal structure?
  - Formal structure is provided by the journal; follow it!
  - Informal structure – *most journals*:
    - summaries (1st and 2nd)
    - major issues
    - minor issues

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The review process

Constructing a review, a 3 step process

3. Structure Your Report

- Summaries (1st and 2nd paragraphs)
  - Give positive feedback first [not too much if you reject the paper]
  - Describe what the paper is about, what the methods and the findings are (1st)
  - Indicate the work's strengths, its quality and completeness (1st)

  - Put the findings of the paper into the context of the existing literature and current knowledge (2nd)
  - State any major flaws or weaknesses and note any special considerations (2nd)
  - Provide your overall recommendation (2nd)

'Therefore, I recommend the paper to be return for a major revisions.'

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Constructing a review, a 3 step process

3. Structure Your Report

- Major comments:
  - Are there any major flaws?
    Clearly state what they are and what the severity of their impact is on the paper
    (i.e. Major or Minor revision)
  - If the findings challenge current thinking:
    - Are the evidences strong enough?
    - Have they cited all the relevant work that would contradict their thinking?
  - Are there any major presentational problems
    (e.g. figures and tables, language, structure of the manuscript)?
  - Is there references missing?
  - Are there any ethical issues?

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Constructing a review, a 3 step process

3. Structure Your Report

- Minor comments:
  - Are there places where meaning is ambiguous? How can this be corrected?
  - Are the correct references cited? If not, which should be cited instead/also?
    Are citations excessive, limited, or biased?
  - Are there any factual, numerical or unit errors? If so, what are they?
  - Are all tables and figures appropriate, sufficient, and correctly labelled?
    If not, say which are not

- About the style:
  - Number your comments
  - For specific comments,
    refer to line number in the manuscript, and quote the part of the text you are referring to

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The review process

- **An example of review:**
  - https://www.sciencedirect.com/science/article/pii/S016819231630106X

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The review process

Homework

- For next lecture:
  - For your review:
    - Write a scientific review of the manuscript of your colleague
  - Reviews deadline: **January, 30th**