Writing a scientific paper in the Earth Sciences: An editor's perspective

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Before starting

Be prepared

- **Know what you want to say**
- **Know who you want to say it to**
- **Know how you want to say it**
- **All of the data should be collected and analysed**
- **All figures should be prepared**

Before starting

Where to send the paper?

- **Decide on the paper format – short or long?**
- **Choose the journal that best fits your needs**
- **Read the author instructions**
- **Pay attention to the journals use of figures**
- **Pay attention to its use of supplementary data**

Getting started

Think about who are you writing for

- **Scientific papers are written for scientists**
- **Write for your peers,**
- **But, it should be understandable to a general scientific readership**
- **Papers tell a scientific story, so write like you are telling one**
- **Good writing is important**

Getting started

Some things to remember

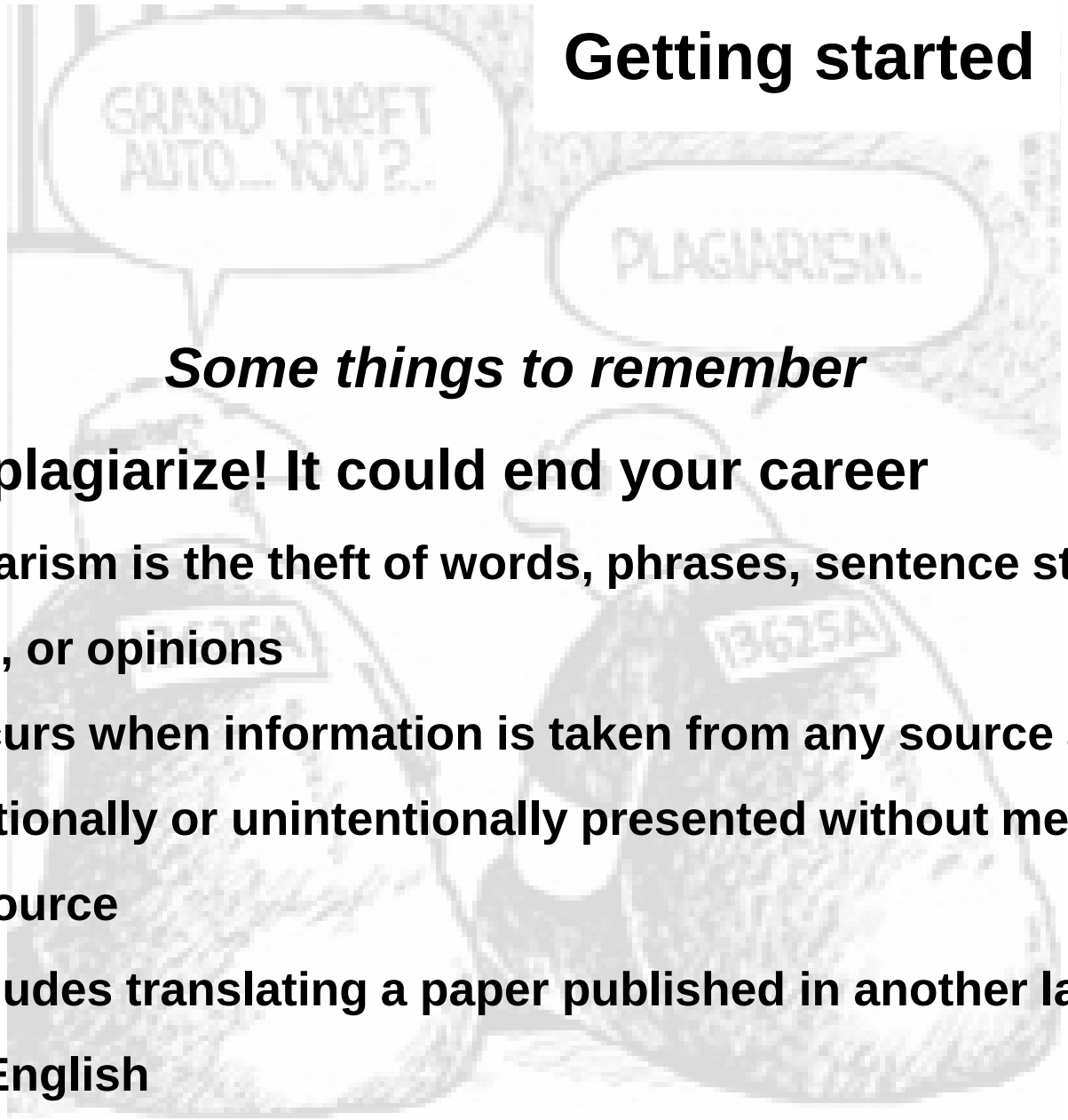
- **Use correct grammar, syntax, spelling, etc**

  There is a big difference between:

  1) **A panda eats shoots and leaves, and**
  2) **A panda eats, shoots, and leaves**

- **Finish sentences with the information needed**
  - **I am going to Zhongli**
  - **I am going to Zhongli to eat lunch**
- **Have your manuscript's writing checked**
- **Fixing the writing is NOT the job of an editor or a reviewer.**

Getting started



Some things to remember

- **Do not plagiarize! It could end your career**
  - **Plagiarism is the theft of words, phrases, sentence structures, ideas, or opinions**
  - **It occurs when information is taken from any source and intentionally or unintentionally presented without mention of the source**
  - **It includes translating a paper published in another language into English**
- **Most journals automatically check text for plagiarism**

Getting started

Some things to remember

- Never, ever, ever, falsify, change, manipulate, misrepresent, or alter your data, data output, or graphical representation of it in any way. **It WILL end your career**

Getting started

Some things to remember

- **Referencing is very important: give others credit where credit is due, but not where it is not.**
- **Do not make your paper over-reliant on supplementary data**
  - **All materials necessary for readers to understand the science presented in a manuscript should be placed in the main body of the manuscript.**

Paper structure

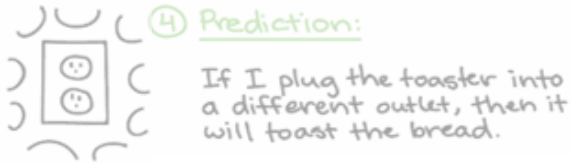
Follow the Scientific Method

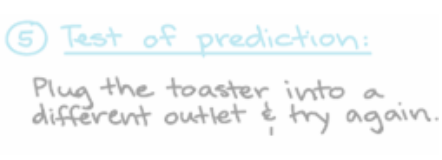
- Define a question
- Gather information
- Form a working hypothesis
- Test the hypothesis by collecting data
- Analyze the data
- Interpret the data
- Draw Conclusions

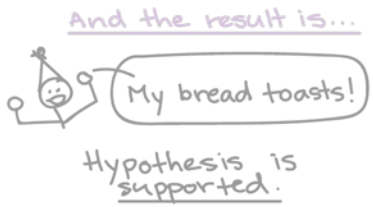
Paper structure

Table of Contents

- Abstract
- Introduction
  - Define a question
  - Present background information
  - Form a working hypothesis
- Methodology and Data
  - Test the hypothesis by collecting data
  - Test data for robustness
  - Analyze the data
- Discussion
  - Interpret the data
  - Place it in the known context of other work
- Conclusions







The Abstract

- **Briefly outline the knowledge gap you are trying to fill**
- **Give an overview of your main data and results**
- **Clearly state the main “take-home” messages of the paper**
- **Develop links with the Discussion and Conclusions**

The Introduction

“When we asked Pooh what the opposite of an Introduction was, he said "The what of a what?" which didn't help us as much as we had hoped, but luckily Owl kept his head and told us that the Opposite of an Introduction, my dear Pooh, was a Contradiction; and, as he is very good at long words, I am sure that that's what it is.”

A.A. Milne “Winne-the-Pooh”

The Introduction

- **Lead that reader toward where you want it to go by;**
  1) **Providing the background story for what is being tested**
  2) **Providing a statement of what the hypothesis to be tested is**
  3) **Providing a statement of what the aim of the paper is**
  4) **Providing a general statement of where the paper arrives**
- **The Introduction should grab the readers interest and make them want to continue reading**
- **The Introduction sets the paper up for what will be presented in the Discussion and the Conclusions**

The Main Body of the Text

- Gives the necessary background information
- Provides the methodologies used
- Analyses objectively the robustness of the data set
- Gives a concise presentation and description of the data
- Figures should be well-planned and informative, containing all data, place names, sample locations, and so on that are talked about in the text: A well-prepared figure can be worth several pages of text
- Stay focussed – do not mix data description and discussion.

The Discussion

- **Do not simply summarise what has already been said**
- **The Discussion should take up where the Introduction left off**
- **Discuss your results in the broader context of what others have said and what you can now add to that**
- **Avoid circular arguments**
  - **E.g. The wonderful thing about Tiggers is that Tiggers are wonderful things**

The Conclusions

- **In a clear, concise way, say what you have achieved and examine whether or not it supports the hypothesis that the paper starts out to test**
- **The Conclusions should follow on from, and be supported by, the Introduction**
- **In other words, the paper finishes with your contributions to what it started out talking about.**

And that is the first draft!

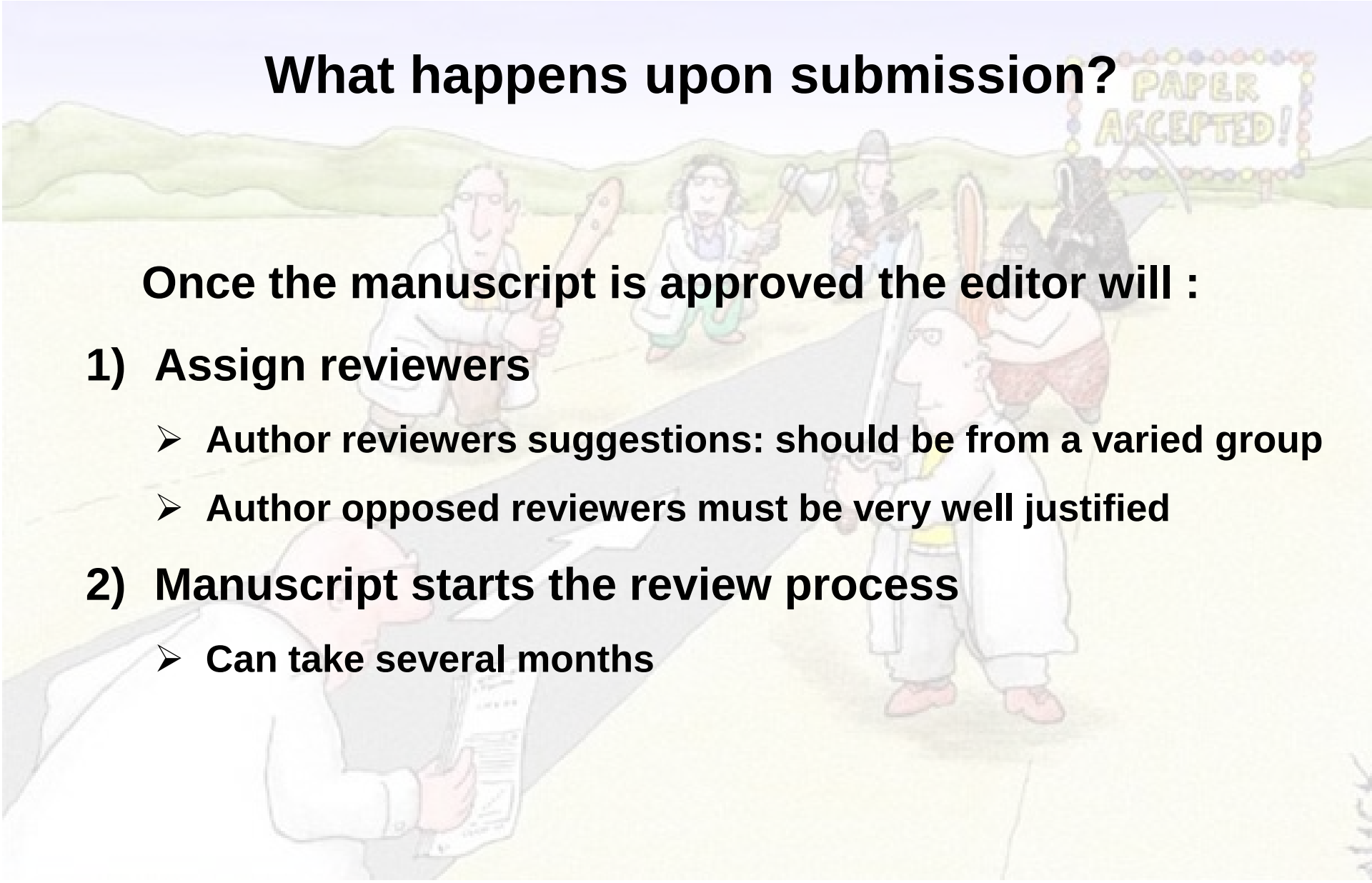
- Once the first draft is complete, take some time to reflect on what you have done. Go have a beer…or two
- Get your coauthors to read it
- Have the English checked
- Don’t rush to submit
- Revise, revise, and revise again
- Then submit

What happens upon submission?

A science editor checks your submission for:

1) **The science:**
   - **Does it fit the journal scope?**
   - **Is it of a sufficient standard?**
2) **The manuscript and figures**
   - **Is the writing of sufficient standard?**
   - **Are the figures clear and sufficient?**
   - **Is there over reliance on supplementary data?**
   - **Check for plagiarism**

What happens upon submission?



Once the manuscript is approved the editor will :

1) **Assign reviewers**
   - **Author reviewers suggestions: should be from a varied group**
   - **Author opposed reviewers must be very well justified**
2) **Manuscript starts the review process**
   - **Can take several months**

What happens upon submission?

3) Reviews returned

Read and assess all reviews carefully

Reread the manuscript checking with reviewer comments

4) Make a decision

- Accept
- Revise
- Reject

Most journals reject more than 50% of manuscripts

Geology, where I am editor, rejects about 80%

There is now a tendency to decide resubmit and review again