

# Scientific Writing

Faculty of Veterinary and  
Agricultural Sciences  
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# The four essential ingredients for successful writing

- Attitude
- Structure
- Style
- Salesmanship

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- Salesmanship

# The statistics

99% of scientists agree that writing is an integral part of their job as scientists

Fewer than 5% have ever had any formal instruction in scientific writing as part of their scientific training

Most have learned by example from the scientific literature that they read

About 10% enjoy writing; the other 90% consider it a necessary chore

# What is a researcher?

- Someone who does research to find things out?
- A professional writer who is doing research to get material for their next scientific story?

# Why write?

Because.....

If you haven't written it  
you haven't done it.

...but, that's not all

# Why write well?

Because:

If nobody reads it.....  
you haven't done it.

and...

If they read it and don't  
understand it,  
you still haven't done it.

Your primary aim in writing a paper is to have as many people as possible **read** it, **understand** it and **be influenced** by it.

It is **not**:

- to appease your boss or satisfy the bean counters in the University of Melbourne who want to assess you on the number of papers that you have churned out
- to impress everyone that you know a lot of big words
- to swell the bibliography section of your CV



In other words...

You are not writing for you.  
You are writing for a reader.

So, you need to know what motivates a  
scientific reader, before you can hope  
to be a successful scientific writer.

# What does the reader want?

- \*A compendium of information?
- \*A work of literary brilliance?
- \*A simply-told scientific story?

Don't make your scientific article  
just a compilation of information

Turn your information into a  
scientifically based story

The more exciting and fascinating  
the story the better the article

That means: more people will read  
it and more people will cite it

*But of course, truthful!*



# Getting into the right frame of mind

What is scientific writing all about?

# The positive approach

I have just been part of adventure in research, I've found something out and I have a contribution to make.

In this article, I am going to help you, the reader, understand what I have to offer, share the adventure and recognise my contribution.

# The ~~negative~~ approach passive

- Research is the art of investigating a field and finding out information that didn't exist before.
- You, the reader, are a involved in research.
- I've written down details—they are all there somewhere.
- Use your skills in research to see if you can work out what is my new contribution

# The fact

- Readers don't really want to read your article.
- They have plenty of other things to do

## Your readers are just like you

- Busy
- Lazy
- Short of time
- Impatient
- Grumpy
- Etc. etc.

Ask yourself from time to time during your writing, "Would I enjoy reading what I just wrote?"



# The aim

- You give your readers a reason as soon as possible in the article to want to read on
- And then you work your butt off to make sure that you retain their interest until the last full stop

# The reality

- The occasional reader will read to the last full stop.
- Most will not.

Your job is to make sure that whatever they do read will expose them to the most important information and give them the best chance you can of their retaining it.

# How?

- Structure
- Logic (ideas in their proper sequence)
- Readability (style)
- Economy (no red herrings!)

# What is the principle?

- The reader's mind is not blank disc ready to be loaded with new information
- It can only take in and retain information by relating it to what it already knows or expects to find out
- So, get readers to expect certain sorts of information and then deliver the detail in a way that satisfies their expectation
- Don't tax their short term memory by expecting them to retain information for long periods before you tell them what it means.

Convince readers that it is worth their taking the time to read it

Part1 : Structure it well

Start with a title that convinces readers that they will learn something useful if they read on

Then use the sections that follow to entice the reader continue to read and learn more

In each new section ,

1. deliver what is expected
2. Give the reader something to expect in the next section

Convince readers that it is worth their taking the time to read it

Part 2 : Write in a **style** that is simple and avoid trying to be "impressive".

People are reading your article to try to understand the science. Don't complicate things by making it hard for them to understand your English as well

Above all, don't emphasise unfamiliar expressions and jargon that are likely to suggest to readers that they are not well enough informed to understand your story

# Basic principles about getting started.

- Plan to write in the style that you would use in a conversation with a friend....fix the imperfections later.
- Never start to write anything before you work out how it should end.
- Reduce the section of work in front of you to a size that you can handle—in other words, a size in which you can envisage how it will end

- Write down the opening sentence of each section you choose to address—it says where you are coming from.
- Then write the last sentence. It tells you where you are going.
- These are the “broad picture” items that set the context— the main topics, key statements, conclusions.
- Then, fill in the sentences between the two.
- Refine the writing later



In other words...

Make it a staged process

Concentrate on the structure of your article first and worry about the style later.

If you try to do everything at once , you run a high risk of doing everything badly

Or worse... doing nothing at all !

In short...

## Stage 1

- Write down the opening sentence of that section—then the last sentence. It tells you where you are going.
- These are the topic you are addressing and what you conclude about it. Now you have a road map for the section.
- Then, fill in the key statements between the two.

## Stage 2

Put all of the sections together

## Stage 3

- Edit the combined text for logic, clarity and coherence

## Stage 4

- Edit for style and readability

# The Hallmarks of Scientific Writing

What makes scientific writing different from every other style of writing?

- Precision
- Clarity
- Brevity

...and in that order !

# The good news about scientific writing

- If you ensure that you are precise, clear and brief, there aren't any other specific rules to worry about
- There are no hidden agendas — the most acceptable scientific style is plain, simple English.
- So, your draft in conversational English may be closer to the final than you thought
- Write to inform not to impress

## “Impressive” writing

The development of targeted interventions to combat child obesity will depend on a clearer understanding of how environmental influences on weight status are distributed across the socio-demographic landscape.  
(ANZJPH, April 2005 p 166)

Before we can combat child obesity we have to know more about the factors that cause children to get fat and the social and human issues that affect these factors.

Diagnosing possible threatening processes associated with native species population declines, and understanding the underlying mechanisms and interactive effects driving these declines, is critical to the delivery of appropriate and effective conservation management

To manage conservation appropriately and effectively we need to identify the threats that cause populations of native species to decline and understand how they work.

Therefore, the ability to select from phyto-diverse combinations of forages that exhibit variable bioactive, nutritional and mineral characteristics may confer a complementary nutritional advantage to the animal.

Therefore, animals that can select from forages that differ in bioactive nutritional and mineral characteristics may be better fed

We hypothesized that the ground-dwelling species, being more tolerant of open environments (Bergallo *et al.* 2005) would be positively affected to road edges (would show edge attraction behaviour), whereas the arboreal species, being more specialised to forest environments (Pardini *et al.* 2008; Püttker *et al.* 2008), would be negatively affected by road edges (i.e would show edge avoidance behaviour)

We hypothesized that the ground-dwelling species, being more tolerant of open environments (Bergallo *et al.* 2005) would be attracted to road edges, whereas the arboreal species, being more specialised to forest environments (Pardini *et al.* 2008; Püttker *et al.* 2008), would avoid road edges

## Keeping it simple but scientific

"Biopsies were sectioned and eosinophils were enumerated"

e·nu·mer·ate [ih-noo-muh-reyt, ih-nyoo-]verb (used with object), e·nu·mer·at·ed, e·nu·mer·at·ing.  
to mention separately as if in counting; name one by one; specify, as in a list: *Let me enumerate the many flaws in your hypothesis.*

"Biopsies were sectioned and eosinophils were enumerated."

"Biopsies were sectioned and eosinophils were counted."



?

Enumerable

*|ɪˈnju:m(ə)rəb(ə)| adjective able to be counted by one-to-one correspondence with the set of all positive integers.*

Traditionally viability is determined by culture, however this can take 3-4 months to get **enumerable** results

*Grain & Graze* was an innovative, multi-scale, multi-organisational, inter-disciplinary and triple bottom line research, development and extension (RD&E) program conducted to investigate and improve mixed-farming systems in Australia from 2003 to 2008. This paper reports on a sociological evaluation of the program's institutional arrangements that was undertaken as one of a small number of social research projects within the program. Based on discourse analysis and investigation of participant experiences, it found the program was characterised by two competing views of what the program was or ought to be. Weaving across the program's formal and informal elements and national and regional scales of management, these 'narratives' reflect the program's coexisting 'revolutionary' aspirations and 'organisational' aspirations. Attention to the coexistence of these narratives and the way they were expressed within the program provides insight into the values, complexity and challenges of agricultural RD&E programs. It points to the significance the broader philosophical and governance context has for contemporary agricultural RD&E programs and other public science and sustainable development initiatives.

# More good news —tense in scientific writing

- Simple past tense for everything that has happened in the past. ie at least 90% of what you write
- Present tense for principles and “housekeeping”—ie, the rest

# Tense in Scientific Writing

The geographically limited occurrence of *O. knightorum*, its high specificity regarding its food plant and its long adult flight period **presented** a rare opportunity to survey and map the entire distribution of the species at a very fine scale. The survey and mapping **is** a first step in reassessing the conservation status of the species; to begin this reassessment, we also **examine** its current reservation status.

## Tense in Scientific Writing

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# The four essential ingredients for successful writing

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- **Structure**
- Style
- Salesmanship

# Structure

- Physical
- Logical

# Physical structure of a scientific article (IMRaD)

- Title
- Summary
- Introduction
- Materials and Methods
- Results
- Discussion
- Acknowledgments
- References



# Logical Structure

- Title
- Summary
- Introduction
- Materials and Methods
- Results
- Discussion
- Acknowledgments
- References

# Making your work explainable with a logical structure

- Predict your results.
- Reason why exactly you think you would get these results.
- Imagine how you would present them.
- Imagine how you would explain them.

# Making your work explainable

- **Predict** your results.
- **Reason** why exactly you think you would get these results.
- **Imagine** how you would present them.
- **Imagine** how you would explain them.

# The Advantages

- You are obliged to think before you act.
- You are obliged to think *logically and scientifically* before you act,
- Your prediction becomes an hypothesis which is the cornerstone of all good experiments.

# The characteristics of an hypothesis

- It fits all of the known and acceptable information.
- It is testable: an experiment is simply a test of an hypothesis.

# Why is it important?

- You have to know all of the known and acceptable information before you can propose one.
- You save time and money by making many of your mistakes mentally before you commit yourself to doing the experiment.
- Your experiment will have a clear focus.
- When you write up the experiment **YOU** will have a clear focus. AND the perfect basis for your scientific story

# How does the hypothesis focus your writing?

- The Introduction
- The Results
- The Discussion

# The *Introduction* contains just two parts:

- 1. The hypothesis (or what you would expect to find).
- 2. The logical reasoning that makes this hypothesis the most plausible expectation possible about the phenomenon you are studying.
- .....and nothing else!



The Results can now be given a priority based on:

1. Those that relate to the testing of the hypothesis.
2. Those that don't

# The Discussion can be organised and its components given priority

- 1. Arguments about results that support or reject the hypothesis.
- 2. Arguments about results that have nothing to do with the hypothesis.

# What will the paper look like if we accept the hypothesis?

Congratulations!

- Your **Introduction** explained why this hypothesis was the most plausible expectation about the subject you have been exploring.
- Your **Results** backed this up.
- Your **Discussion** explored the consequences in relation to the work others and, possibly, for the "real world"

Nice paper!

# What will the paper look like if we show the hypothesis to be wrong?

Congratulations!

- Your **Introduction** explained why this hypothesis was the most plausible expectation about the subject you have been exploring... before you came up with these new results.
- Your **Results** blew a hole in this plausibility.
- Your **Discussion** explored why the logic was wrong, how we have to rethink our concepts about the work of others and, possibly, what we should do differently in the "real world"

Even Nicer Paper!

"Experiments designed around the development and testing of an hypothesis yield scientifically rewarding information regardless of whether the actual results match the results that you expected."

Writing the article follows the same path:

You tell the reader what you expected to find and discuss how your findings matched that expectation....

..... and completing the experiment by writing the scientific article to let the rest of the world know about it might just be enjoyable enough to put you into the group of 10% who enjoy writing.

Your job is to get the reader  
to follow what you are writing  
by creating expectation

You do this by defining the  
article with a definitive *Title*  
and follow with a compelling  
*Introduction*

# The Title

The most read part of your article (by about 100x)

It has two functions:

- To attract other scientists to read your paper
- To provide the best information possible to help search engines find your paper easily



# Principles in preparing a good title.

1. Carefully choose the key words in your article (you will probably be asked by the editor to do this anyway)
2. Rank these key words in order of importance
3. Construct your title using *all* of the key words and trying, *as closely as you can*, to put them in rank order.
4. If the title is too long, drop off the least important key words first
5. Now, edit the title to try to give an indication of your main result or main conclusion (in other words, the real reason for writing the paper in the first place)

In other words:

Make sure that your title blurts out as much as possible of the scientific news that your article is going to talk about.

That's what makes readers want to read on

# An example

Uninformative and dull

The effect of extracts from Australian plants on the levels of lactic acid in cattle

Based on the major result

Extracts from Australian native plants prevent lactic acidosis in cattle fed grain diets

Based on the major conclusion

Australian plants have the potential to replace antibiotics in the control of lactic acidosis in cattle.

## Could these titles tell the story better?

**The divergence of traditional Aboriginal and contemporary fire management practices on Wik traditional lands, Cape York Peninsula, Northern Australia**

Supporting the implementation of Aboriginal burning alongside current fire management practices could lead to significant community engagement in such activities and is likely to have much better biodiversity and social outcomes.

**The use of a replanted riparian habitat by the Lumholtz's Tree-kangaroo (*Dendrolagus lumholtzi*)**

LTK will colonise replanted habitat and may be adaptable in its spatial requirements in a restored landscape

**Functional and phylogenetic dimensions are more important than the taxonomic dimension for capturing variation in stream fish communities**

**Is the proportion of clonal species higher at higher latitudes in Australia?**

...the proportion of clonal species significantly increased with latitude, rising from 3.3% clonal species at 9.25° S to 26.7% clonal species at 43.75° S.

# The introduction

- It must contain two elements.....
  - The hypothesis preceded by...
  - The reason(s) why the hypothesis was the most sensible statement of the phenomenon that you were testing— when you began the experiment

.... and nothing else

# Why is it so important?

- You have to know the available information before you can propose one.
- You create reader expectation. (readers know what they are looking for in the rest of the article, so they read it more successfully)
- Whether you eventually accept or reject it you have the information to make a successful paper

## The *Introduction* is the powerhouse of your research article

- It gives **you** the guidelines around which you will write the rest of your article
- It tells **readers** what they can expect to find when they read on
- It gives them guidelines around which they can interpret what you will tell them
- It sets up your data as part of the scientific story you are telling

# The "feelgood" introduction and the logical introduction

Pros and cons



# The "feelgood" Introduction attempts to:

- Provide a review of the literature for people new to the field of study
- Start broadly and gradually narrow down to the subject of the experiment
- State the aim or the objective but not the hypothesis

# The "logical" Introduction attempts to:

- Give the reader something to expect by predicting the results of the experiment based on the information available before the experiment was done
- Justify this prediction through a logical series of statements (inductive or deductive)
- State the aim or objective maybe, but always state the hypothesis ... in other words the prediction

# The advantage of the "Logical" cf the "Feelgood Introduction

- It is usually much shorter
- It gives you very clear criteria about who and what to cite from the literature
- It develops the readers' expectations and encourages them to ask questions that will be answered later in the article
- It acts as a guide for the writing of every other part of the article

# Excuses

## ~~Reasons~~ for not having an hypothesis

I was just looking for base data where there isn't any at present

We have a new instrument in the lab and we were measuring things we couldn't measure before

Mine was not an experiment but a survey/questionnaire

We were just seeing whether a new technique worked. We weren't interested in the answer - just the methodology

I inherited the experiment from a researcher who has left. I don't know what his hypothesis was.

I have stated the *Objective* so I don't need an hypothesis

# What is the difference between an objective and an hypothesis?

- The objective states what you intend to do but not why you intend to do it
- The objective does not need or invite justification
- The objective is easy to formulate; the hypothesis is much harder
- The formulation of the hypothesis is a major intellectual exercise
- But, if it is well formulated, it makes it comparatively easy to write the rest of the article

# The "feelgood" introduction

The latest census shows that there are about 3.5 million children in Australia below the age of 10. It is essential, in terms of future public health issues, that the general medical wellbeing of these children does not deteriorate as a result of changes in modern lifestyles. One such lifestyle change is choice and consumption of food which may lead to obesity in young children and this is of particular concern to epidemiologists. Obesity in young children often leads to complications such as diabetes and heart related problems in relatively early adulthood and this will impact on future public health issues. This paper describes an experiment that looked at the body mass index and waist girths of samples of children from a range of socio-demographic backgrounds in 2009 and 2015.

# The "scientific" introduction

Australian children are becoming more obese (reference). However this evidence is based on samples taken from populations of children from schools in Sydney and Melbourne. Obesity in children in USA is correlated to their intake of take-away, junk food (reference). But, 95% of the junk food outlets in Australia are in the capital cities (reference) whereas only 65% of children attend city schools. So, we hypothesised that the 35% of children in Australia that are rural based should be less obese than city based children because they have less access to junk food. To test this, we compared the body mass index and waist girths of samples of children from country towns with those of city children of similar age from suburbs with a high density of junk food outlets.

## Some of the things they say you should put in an *Introduction*

- Define the scope of the study
- Define the problem
- Identify the gaps
- State the objective
- Summarise the background
- State the question to be asked
- Provide a context for the work
- Explain the theory behind the work



If you want do all of this and still have a  
concise, focused *Introduction*:

Articulate the hypothesis on which your  
work was based ...

...and justify it!

# Examples:

•In order to answer the question of how both sexes (of magellanic woodpeckers) differ on their foraging niche given seasonal and environmental changes on resource availability, we tested the following two predictions: First... Second...

We hypothesized that the ground-dwelling species, being more tolerant of open environments (Bergallo *et al.* 2005), would be attracted to road edges, whereas the arboreal species, being more specialized to forest environments (Pardini 2004; Püttker *et al.* 2008), would avoid edges

# Materials and methods

- The most 'skimmed' section of your article
- Help the reader to read quickly by providing *meaningful* sub-titles
- Give your Methods before the Materials
- Consider carefully whether the information you are including is necessary
- Where a methodology or technique has been described by someone else, don't repeat it but use the appropriate reference

## M&M Continued

. Where a method has to be validated and the paper is not a methodological paper Present the validation in the M&M

Where it is a methodological paper then the results of the validation should be in the *RESULTS*

# Results—the principles

- The **Results** section must contain
  - all the results and
  - nothing but the results
- It must be objective and express no opinion or bias
- A **Results and Discussion** section is not allowed by most journals for these reasons. It is also more difficult to write well.

## Three reasons why a *Results and Discussion* section is hard to write well

1. It is hard to maintain objectivity when presenting data and comparing and discussing their merits the same time.
2. It is hard to compare your results with those of others without confusing the reader about which results are yours.
3. It is hard to discuss one section of a set of data without making use of another which you may not yet have presented.

# Results—finding the right emphasis

- Sort out what is important and give it prominence.
- Sort out what is unimportant and throw it out (or, if you include it, make sure that it has little impact)
- During this exercise you may discover more about your results than you first thought!

# How do I know what result is important?

Either...

- 1. It allows me to say something substantial about the hypothesis,
- 2. It allows me to say something that is relevant but less convincing about the hypothesis,
- 3. It allows me to say something substantial but not about the hypothesis or
- 4. It is not convincing and not about the hypothesis.



# How do I use this information?

- Do not use any of the results you have classified as (4)
- As much as possible, present the results in the order (1) before (2) before (3)
- Use the text to emphasise the important results in the tables or graphs.
- The reader will then get the same impression as you about their importance

# Results

- The results section usually contains both text, and tables or figures.
- It may contain only text but never only tables or figures
- Tables (or graphs) and text should both "stand alone".
- Use tables to be precise.
- Use text to be clear.

# Working with tables and text

## Table:

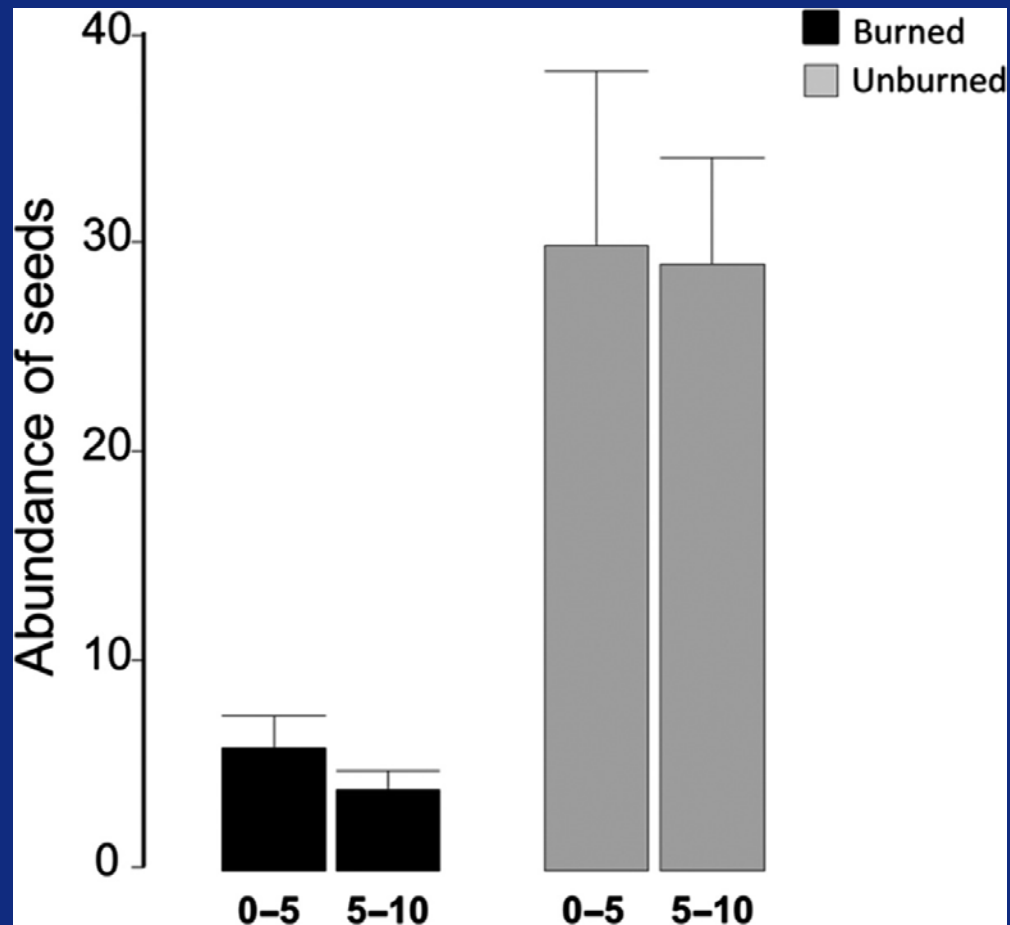
Table 6: Proportion of cattle testing positive for polyspot virus antibody by age group in Rattlesnake Junction

Age group (months)	1-9	10-18	19-27	>27
Proportion (%) with +ve test*	21.2 <sup>b</sup>	23.6 <sup>b</sup>	42.8 <sup>a</sup>	20.7 <sup>b</sup>

\*Numbers with different superscripts are significantly different ( $P < 0.01$ )

## Text:

Cattle aged from 19-27 months were about twice as likely to have serum testing positive to polyspot antibody than those in any of the other age groups (Table 6;  $p < 0.01$ )



Mean seed's abundance in the soil bank at the burned and unburned sites at two depths (0-5 and 5-10 cm). Error bars indicate SE.

Text: Mean seed number at the burned site ( $4.79 \pm 0.89$  seeds per sample) was c. 6 times lower than that at the unburned site ( $29.79 \pm 6.08$  seeds per sample). This trend was observed both at shallower (0-5 cm) and deeper (5-10 cm) soil layers (Fig. 1).

Table 5. Mean numbers (with SE) of seeds in the soil bank at the burned and unburned sites at two depths (0-5 and 5-10 cm).

Depth (cm)	Burnt	Unburnt
0-5	4.79 ( $\pm 0.89$ )	29.79 ( $\pm 6.08$ )
5-10	3.37 ( $\pm 0.77$ )	28.02 ( $\pm 5.97$ )

Text: Mean seed number at the burned site was about 6 times lower than that at the unburned site regardless of the depth of the soil layers (Fig. 1).

# Emphasise what's important to your scientific story

A repeated measures ANOVA with a Greenhouse-Geisser correction determined that the mean scores for app attribute importance were significantly different ( $F(7.866, 2352.003) = 279.879, p < 0.0005$ ). The three most important attributes identified were usefulness, ease-of-use, and providing a better way of doing something the user already does.

The three significantly most important attributes identified were usefulness, ease-of-use, and providing a better way of doing something the user already does.

# Discussion

- When thinking and reading about the experiment and when writing, make notes as the thoughts come to you about what you *could* discuss
- Now, from these notes, give priority to what arguments you *should* use in the discussion



# Priorities for Arguments

## *1st order arguments:*

Relevant to the original hypothesis and allow you to make a positive statement of acceptance or rejection.

## *2nd order arguments:*

Relevant to the original hypothesis but are equivocal or may need further experimentation or clarification before acceptance or rejection.

## *3rd order arguments:*

Not relevant to the original hypothesis but sufficiently new or interesting to warrant discussing

## *4th order arguments:*

Not relevant to the hypothesis and of marginal interest.

# Discussion

- Take what is important (priority 1) and give it prominence.
- Take what is unimportant (priority 4) and throw it out —or, if you insist, make sure that you do not emphasise it.
- Use paragraphs for each complete argument in the discussion.
- Use the best first!
- Make sure that the least important arguments do not use more writing space than the more important ones

# Discussion—paragraphs

Good paragraphing is almost a forgotten element of modern writing yet it is a most powerful aid in constructing good Discussions and Reviews

# Discussion—paragraphs

The three sections of a paragraph

- The topic sentence (This is what this paragraph is going to tell you)
- The logical reasoning (this is how I interpret my results)
- The concluding sentence (this is what it means)

Just as every **sentence** must  
have a **verb**...

every **scientific paragraph**  
must have a clear **conclusion**.

For two very good reasons...

If you adopt the discipline of writing your *Discussion* as a series of well constructed paragraphs each leading to a conclusion, you will never be rightly accused of "waffling"

You expand your readership. A conclusion lets readers grasp the wider meaning of the work even if they are technically unable to understand fully the details of the reasoning.

# Discussion—the principles

- *“Discussion” means discussion of YOUR results not those of others.*
- *Discuss YOUR results in relation to:*
  - those of others
  - the “real world” (practical application, or contribution to generic thinking)
- *Your arguments should lead to conclusions. You should not need a separate “Conclusions” section even if the journal allows it. It is just repetition*

# Whose work is being discussed here?

Nitrification in acid soils is usually inhibited (Gottsschalk 1985; Rosswall 1982; Salsac et al. 1987; De Boer and Kowalchuck 2001).

Furthermore, the high annual rainfalls would tend to favor nitrate leaching and ammonium accumulation by increasing soil oxygen depletion (McBride 1994). However, we did not see this.

# Examples of wasted opening paragraphs 1

## Discussion

Like others, we found significant quantities of BRSP present under all land uses, decreasing with depth perhaps in correlation with AMF hyphal growth (Lovelock et al. 2004b) or decreasing disturbance with depth (see below). Our overall average values, 6.6 (0.3), 4.5 (0.2), and 3.4 (0.2) mg cm<sup>-3</sup> soil in the 0-5, 5-10, and 10-20 cm depth increments respectively are within the range of values, 4.4-14 mg g<sup>-1</sup> reported for undisturbed A horizons of Mid-Atlantic forest soils (Wright and Upadhyaya 1996, 1998) and are remarkably similar to other broadly ranging data including those reported by Lovelock et al. (2004a) for the top 10 cm of tropical lowland rain forest soil (3.94 mg cm<sup>-3</sup>); by Rillig et al. (2003) for the A horizons of Ohio soils under different land uses (3.79 mg cm<sup>-3</sup>); by Franzluebbers et al. (2000) in 0-40 mm depth of pastures in the Southern Piedmont USA (ca. 2-4 mg cm<sup>-3</sup>) and by Harner et al. (2004) for Montana flood plains (3.38 mg g<sup>-1</sup>).



## Examples of wasted opening paragraphs 2

### Discussion

An understanding of the factors controlling soil N cycling under elevated O<sub>3</sub> and CO<sub>2</sub> is important in predicting changes in ecosystem N availability and pools. The effects of elevated O<sub>3</sub> and CO<sub>2</sub> on below-ground processes have so far attracted limited research interest, and there have been only a few efforts to place these effects in an ecosystem context.

## By contrast ...

We hypothesized that Augmentin, the standard treatment for gonococcal infection as recommended by the National Department of Health in PNG, may no longer be effective in clearing isolates in current circulation. However, all gonococcal isolates that we tested were fully susceptible to Augmentin, so we rejected the hypothesis. Moreover, resistance to penicillin due to chromosomal modifications was not established among the isolates tested, thus amoxicillin therapy alone was effective in clearing these isolates. By contrast, isolates, classified as PPNG, in which resistance to penicillin is due to plasmid-mediated mechanisms were highly prevalent, accounting for over 40% of the total. These PPNG isolates were highly susceptible to Augmentin seemingly because clavulanic acid in the Augmentin preparation effectively inhibited the function of penicillinase, in turn permitting amoxicillin to disrupt synthesis of the cell wall of gonococci. We therefore recommend that the standard treatment for gonococcal infection be continued and further promoted throughout PNG.

We hypothesized that Augmentin, the standard treatment for gonococcal infection as recommended by the National Department of Health in PNG, may no longer be effective in clearing isolates in current circulation. However, all gonococcal isolates that we tested were fully susceptible to Augmentin, so we rejected the hypothesis. Moreover, resistance to penicillin due to chromosomal modifications was not established among the isolates tested, thus amoxicillin therapy alone was effective in clearing these isolates. By contrast, isolates, classified as PPNG, in which resistance to penicillin is due to plasmid-mediated mechanisms were highly prevalent, accounting for over 40% of the total. These PPNG isolates were highly susceptible to Augmentin seemingly because clavulanic acid in the Augmentin preparation effectively inhibited the function of penicillinase, in turn permitting amoxicillin to disrupt synthesis of the cell wall of gonococci. We therefore recommend that the standard treatment for gonococcal infection be continued and further promoted throughout PNG.

# An example

Stage 1: List of possible arguments for the *Discussion*

Hypothesis rejected: Regional children as fat as Sydney and Melbourne children

Waist girths increased between 2009 and 2015

MacDonalds and Kentucky Fried Chicken have opened 15 new restaurants in Sydney and Melbourne in the last 5 years

No differences in age distribution between 2009 and 2015

Older children were fatter than younger children

Body mass index did not change

# An example

Stage 2: Sort arguments into categories

Hypothesis rejected: Regional children as fat  
as city children **1**

Waist girths increased between **2**009 and 2015

MacDonalds and KFC have opened 15 new **4** restaurants in  
Sudney and Melbourne in 5 years

No differences in age distribution **4** between 2009 and 2015

Older children were **3** fatter than younger children

Body mass index did not **2** change

# An example

Stage 3: Arrange order of paragraphs

Hypothesis rejected: Regional children as fat as city children

Waist girths increased between 2009 and 2015

Body mass index did not change

Older children were fatter than younger children

## An example

Stage 4: Decide on conclusions to each paragraph

Hypothesis rejected: Regional children as fat as city children

Junk food outlets are not the reason for children getting fatter

Waist girths increased between 2009 and 2015

Further proof that children in Australia are becoming fatter

Body mass index did not change

Body mass index is a measure of fitness so children may be fatter but they are no less fit

Older children were fatter than younger children

Whatever the cause of fatness it should be studied more closely in older than younger children

# Discussion—the principles (1)

In summary:

- Sort out what discussion arguments you are going to make  
Arrange them in priority order and aim to allocate one paragraph to each argument. Where possible, present the most important of the arguments first and make sure that they occupy more space than the less important arguments
- Write the first (topic) sentence of each paragraph announcing the argument that it will be discussing
- Write the last sentence of each paragraph giving the conclusion that you will be making on each argument
- Fill in the sentences in the body of each paragraph that make a logical development from the first sentence to the concluding sentence
- Finally, edit each paragraph for readability, fluency and logic



## Discussion—the principles (2)

- Now go back to your *Results* and readjust the placement and emphasis of your material in both the *Results* and the *Discussion* to ensure that they are consistent and that they reinforce one another
- Similarly, check your *Introduction* to verify that the logic and substance of your original reasoning matches the logic and reasoning of the conclusions you made in the *Discussion*.

# Summary (the easy bit!)

- *Why?* (your hypothesis)
- *How?* (Brief Methods—not Materials)
- *Main Results*(Category 1 items only)
- *Main Discussion points* (Category 1 items only)

- We hypothesised that children in Australia from rural areas should be less obese than children from the city because they have less access to junk food. To test this, we compared the body mass index and waist girths of samples of children from country towns with those of city children of similar age from suburbs with a high density of junk food outlets. Rural children were as fat as city children so we conclude that junk food outlets are not the reason for increase in obesity of children in Australia.

# The four essential ingredients for successful writing

- Attitude
- Structure
- **Style**
- Salesmanship

# Readability

Making sentences flow smoothly so that the reader is conscious of the message but not the way it is delivered.

...or

- getting rid of verbal stumbling blocks and
- making the way you write match the way a reader reads

The seven most common  
verbal stumbling blocks

- A large vehicle fleet operator mileage restriction has now been imposed
- Healthy Flood Plains Storage Monitoring Instrumentation Pilot Project  
NSW Office of Water
- Modern chemical effluent odour suppression compounds often lead to difficult piglet birth problems

# A large vehicle fleet operator mileage restriction has now been imposed.

Interpretations:

A restriction has now been imposed on the mileage of operators of large fleets of vehicles

A restriction has now been imposed on the mileage of operators of fleets of large vehicles

A large restriction has now been imposed on mileage by the operators of fleets of vehicles

A restriction has now been imposed on large mileage by the operators of fleets of vehicles

A restriction has now been imposed on the mileage of large operators of fleets of vehicles



Plant nitrogen uptake

Uptake of nitrogen **from**  
plants

Uptake of nitrogen **by**  
plants

- *Austropuccinia psidii* inoculation

Is something being used to inoculate  
*A.psidii*?

or

Is *A.psidii* being used to inoculate  
something else?

# Examples of common English prepositions

- of
- to
- on
- in
- by
- for
- from

•with

•as

They are among the shortest words in the language. If you leave them out, you don't gain much in brevity but you lose a lot in clarity and precision.

# Three ways of fixing the problem:

- Insert the missing prepositions
- Use an adjective
  - » Reproduction rate becomes reproductive rate
  - » New society problems becomes new social problems
- Hyphenate the words to show that they should be read as one
  - » Fine-wool sheep not fine wool sheep
  - » Free-range eggs not free range eggs

landscape-to-regional scale  
climate variability impacts

...commercially available bacterial viability  
detection methods are unsuccessful

Controlled experimental multi-age  
infection studies

stumbling block 2  
Complex adjectival phrases

A separate previously ethics  
committee-approved DNA sample  
registry informed consent form

# Fixing the problem

Use the extra words—mainly prepositions—to clarify the meaning.

Landscape-to-regional scale climate variability impacts becomes

The impacts of variability in climate at a landscape-to-region scale

stumbling block 3.  
Conditional clauses  
before main clauses

Thus, although the poor attendance at the supermarket due to storms that day and the lack of subjects on the 60+ age group we were forced to confine our sampling to young consumers and despite the low temperatures throughout the whole period of the questionnaire, .....



stumbling block 3.  
Conditional clauses  
before main clauses

Thus, although the poor attendance at the supermarket due to storms that day and the lack of subjects on the 60+ age group we were forced to confine our sampling to young consumers and despite the low temperatures throughout the whole period of the questionnaire, **most people preferred ice cream to meat pies.**

# Two ways of fixing the problem

## 1. Put the main clause first

Although we do not have detailed information on the relative quality of the forest types, based on recent work on the abundance of insects in the field and on the number of exit holes on the trees, as a proxy of quality of the food base, we assumed that OGF was a better feeding habitat than SF, becomes

We assumed that OGF was a better feeding habitat than SF, although we do not have detailed information on the relative quality of the forest types, based on recent work on the abundance of insects in the field and on the number of exit holes on the trees, as a proxy of quality of the food base,

# Two ways of fixing the problem

## 2. Turn the subordinate clause into a main clause

We do not have detailed information on the relative quality of the forest types, based on recent work on the abundance of insects in the field and on the number of exit holes on the trees, as a proxy of quality of the food base, but we assumed that OGF was a better feeding habitat than SF

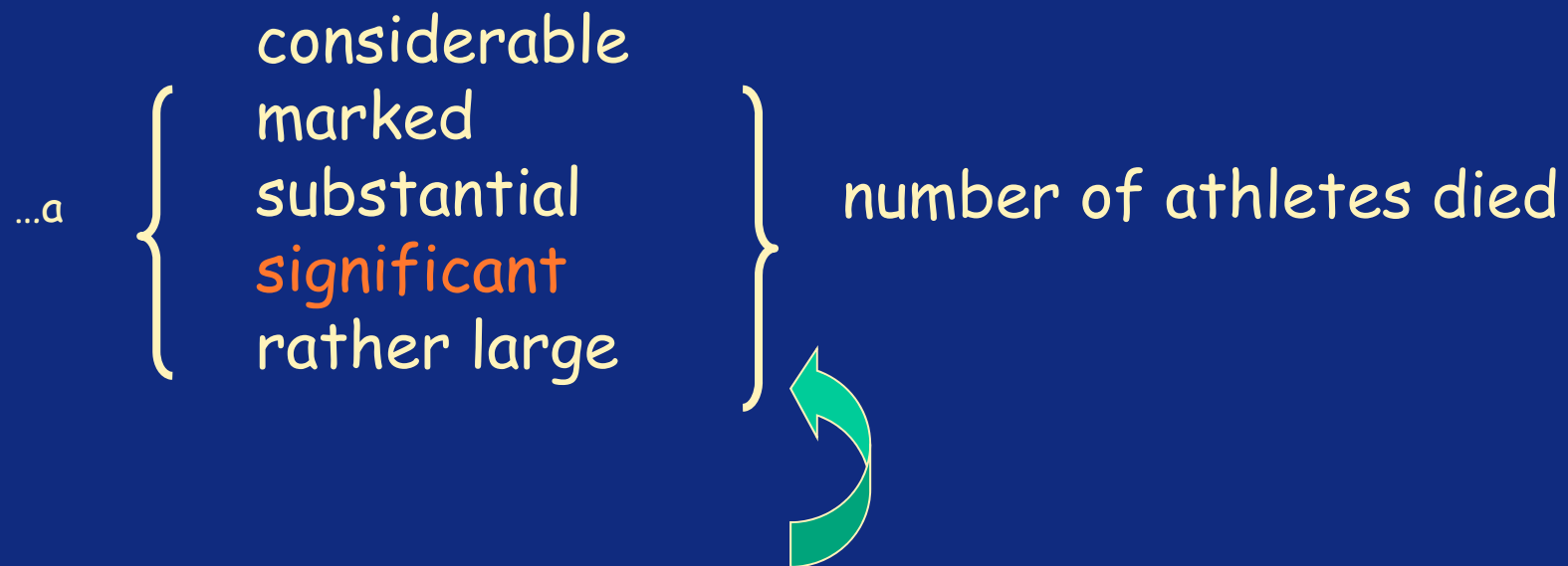
- **Weights** [noun] of the seed pods were taken.
- **Treatments** continued up until the commencement of spring
- **Recordings** [noun] of rainfall and temperature were made.
- **Temperatures** [noun] showed an **increase** during the day.

Increases in ambient temperature resulted in a deterioration of the community's health status, particularly in regions where the treatment of the effluent ponds had not been carried out until the commencement of spring.

When ambient temperature  
the community's health  
status particularly in  
regions where the effluent ponds  
had not been until spring

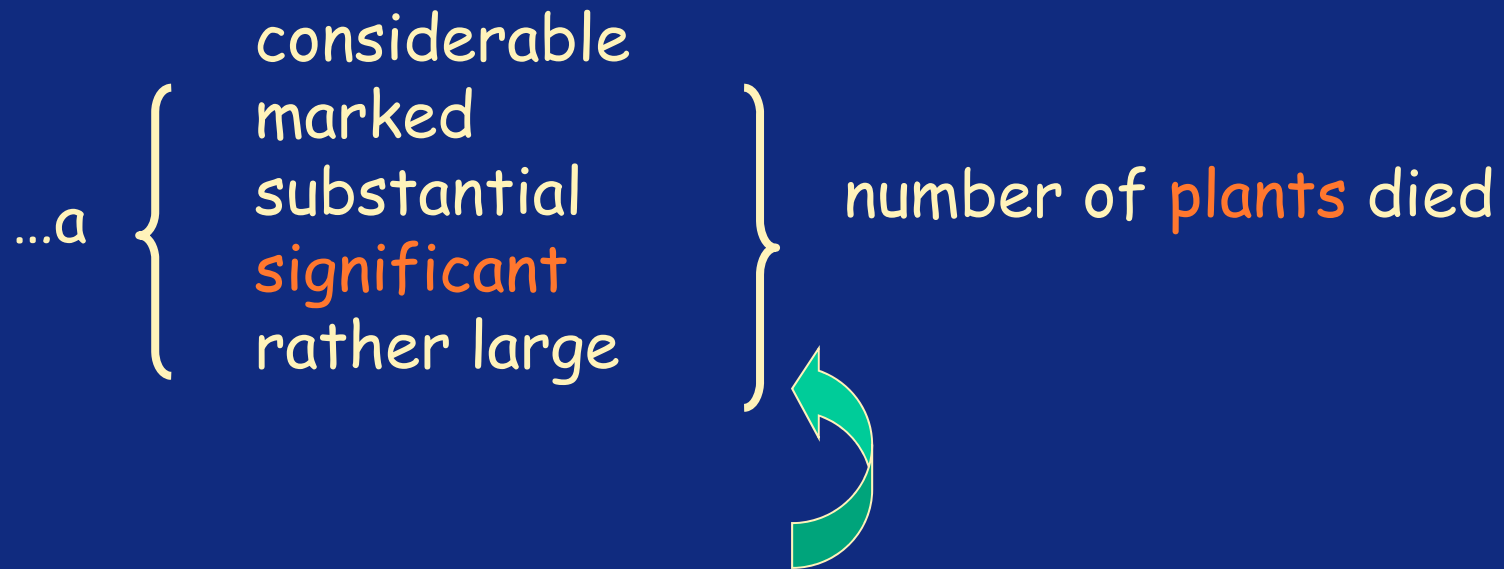
23 words

We tried out a new performance enhancing drug  
and...



How many might you expect these words  
to mean? 5%?, 10%, 15%...

We tried out a new **herbicide**



How many might you expect these to mean? 85%?, 90?, 95%...



FSH and LH were measured by RIA and E2  
was extracted with RTC, purified by  
TL $\square$  C and measured by CPB

# Fixing (or, at least reducing) the problem

- Whenever possible be frugal in your use of abbreviations and always be aware of their catastrophic impact on readability.
- If you aren't going to use an acronym more than three times in your article, write the expression out in full each time.

Stumbling Block 7  
Citations, footnotes, asides,  
parentheses

*The number of stomates per leaf may increase in geraniums (Brown 1937), decrease in petunias (Black 1978) or remain constant in sweet peas (White 1990) when manganese is deficient.*

*or*

*When manganese is deficient, the number of stomates per leaf may increase in geraniums, decrease in petunias, or remain constant in sweet peas (Brown 1937; Black 1978; White 1980).*

# ~~Fixing~~ the problem Reducing

- Avoid footnotes, appendices and things in brackets whenever you can
- If the information is incidental to your main message, consider leaving it out altogether
- If it is important, delete the parentheses and incorporate it in the main message to show that it is important
- Position breaks for authors and dates where they will do least harm to the flow.

Although the proportion of commercially harvested individuals of *M. rufus* is larger than that of *M. robustus* (34% of the four mainland species harvested cf. 12% [Department of Sustainability, Environment, Water, Population and Communities, 2012]), the number of individuals harvested as a percentage of their sustainable quota is slightly lower for *M. rufus* than *M. robustus* (30% cf. 32%) 58

*M. rufus* made up 34%, and *M. robustus* only 12%, of the four mainland species harvested commercially according to the Department of Sustainability, Environment, Water, Population and Communities, (2012) but, when calculated as a percentage of their sustainable quota, a similar proportion of each species was harvested 47

## Which is better— active or passive voice?

...a field experiment was designed to measure the performance of Slender Marsdenia plants introduced with and without addition of fertiliser. The fertiliser treatment was compared in direct transplants and plants propagated from seed and vegetatively

It is believed that without targeted conservation efforts, including conservation translocation, many of these species are likely to become extinct

...a field experiment was designed to measure the performance of Slender Marsdenia plants introduced with and without addition of fertiliser. The fertiliser treatment was compared in direct transplants and plants propagated from seed and vegetatively

We compared the performance with and without additional fertilizer of Slender Marsdenia plants either directly transplanted or propagated from seed.

It is believed that without targeted conservation efforts, including conservation translocation, many of these species are likely to become extinct

Bloggs (2017) believes that many of these species are likely to become extinct without conservation translocation and other forms of targeted conservation

# The Issues

- Active voice is essential if it is important to identify the doer of the action
- Passive voice is OK if it didn't matter who did the action
- Using active instead of passive voice often shortens the statement
- A mixture of active and passive voice can introduce a welcome variety to your writing



## Passive voice...

In conclusion, the subject of regularity in the action of the bowels is too important to be omitted. Constipation in infants, whether breast fed or bottle fed is extremely common. A healthy child, under one year, should have at least three actions in 24 hours. This is not generally realised, and very frequently a baby's bowels are regarded as regular if there is one motion in the 24 hours.

As to methods of remedying this: The best is that which consists in altering the diet to bring this result about, and thus if possible avoiding recourse to drugs etc. Constipation, however, *must* be put an end to, or the child's health will eventually suffer, to a greater or lesser degree. (121 words)

## **..changed to Active voice**

We cannot ignore that children need to use their bowels regularly because they are often constipated whether fed from the breast or the bottle. A healthy child, under one year, should have at least three actions in 24 hours. Many people do not realise this and think that one action every 24 hours is regular enough.

The best remedy is for the mother to alter the diet and avoid drugs if possible. However, whatever the remedy she uses, she must end constipation or the child's health will suffer.

(88 words)

# Double negatives as an aid to obfuscation

## *Pro forma Historical Financial Information*

Based on our limited assurance engagement, which is not an audit, **nothing has come to our attention** that causes us to believe that the Pro Forma Historical Financial Information and comprising the pro forma historical consolidated income statements for the years ended 30 June 2012, 30 June 2013 and 30 June 2014 as set out in Table 4.3 of the Prospectus; and the pro forma historical cash flows for the years ended 30 June 2012, 30 June 2013 and 30 June 2014 as set out in Table 4.10 in section 4.6.1 of the Prospectus, **is not presented fairly**, in all material respects in accordance with the stated basis of preparation as described in Section 4.2.1 and 4.2.2 of the Prospectus.

# Does this say the same thing?

## *Historical Financial Information in the Pro forma*

We were not asked to do a complete audit but we believe that the historical consolidated income statements and historical cash flows in the pro formas for the years ending 30 June, 2012-2014 are presented fairly and as proposed in Section 4.2.1 and 4.2.2 of the Prospectus

47 words

Making the way you write match  
the way a reader reads

# The principle

- Readers need to know what they are about to read
- If they do not, they read the sentence twice; once to find out what the sentence is about and second, to understand what is being said.
- If this happens too often the reader becomes tired of double reading and goes to sleep!

# Making the way you write match the way a reader reads

Readers interpret what you say more easily and with more regularity if they find it where they expect to find it

This is true at all levels

- The paper,
- the section,
- the paragraph and
- the sentence.

# How to avoid sending the reader to sleep

- Begin each sentence with words that signal (in general terms) what is to follow in the rest of the sentence.
- The readers read ( more or less ) what they expect to find.
- The sentences then flow, one after the other, so the reader does not tire.



## Two methods of using the beginning of the sentence to signal what is to follow

1. Begin the sentence with something that was made clear in the previous sentence
2. Use signaling words that act as sign posts for reading

...then, and only then, present the new information that the sentence meant to convey.

## A simple example of using reader expectation

The students were randomly selected and allocated to three treatment groups. A new piffometer with twice the resolution of old instruments was used to determine the speed at which students in the three groups learned to farnarkle.

The students were randomly selected and allocated to three treatment groups. These three groups were monitored for their speed of learning to farnarkle using a new piffometer with twice the resolution of old instruments.

# Examples of "signpost" words

- **Contrast:** In contrast, However, But, On the other hand...
- **Addition:** Moreover, In addition, Furthermore...
- **Result:** Therefore, So, Thus, Hence, As a result, In conclusion...
- **Sequence:** First/ Second/ Third, Finally...
- **Comparison:** Similarly, Not only...but, Compared to...
- **Example:** For example, For instance, In particular
- **Emphasis:** In fact, Indeed...

Our inability to clear the organo-phosphate spill from the affected soil may have been because of the unusually dry conditions at the time we attempted to remove it. The lack of success may also have been due to the fact that the soil on the affected site was very clayey in texture. We measured the pH of the soil which was 4.5 and soils of pH as low as this are known to bind very strongly to organo-phosphates and this may be another explanation for the lack of response.

There are 3 possible explanations for our inability to clear the organo-phosphate spill from the affected soil. First, conditions were unusually dry at the time of the attempted removal. Second, the soil on the affected site was very clayey in texture. Third, we measured the pH of the soil which was 4.5. Soils of pH as low as this are known to bind very strongly to organo-phosphates.

Memory can be divided into two phases: short-term memory and long-term memory. When an animal learns something this information first of all enters the short-term memory where it will remain for a matter of minutes to hours. The experimental methods used and the species of animal studied can affect the precise duration of short-term memory. A number of agents including electro-convulsive shock (strong electric shocks applied to the head), low temperature, coma and deep anaesthesia can disrupt information that is being stored in short-term memory. Any of these treatments may produce a state known as retrograde amnesia, in which the memory of recent events is disrupted leaving earlier events unaffected. Since more remote memories are resistant to disruption, it has been concluded that the mechanism by which the information is stored in short-term memory differs from that for long-term memory. Because short term memory is disrupted relatively easily by procedures which may be expected to have a profound effect on the electrical activity of the brain, it has been suggested that information is stored in short-term memory as reverberating electrical activity in the brain. As information passes into long-term memory, on the other hand, it is stored in a more durable form.

Memory can be divided into two phases: short-term memory and long-term memory. **When an animal learns something** this information first of all enters the short-term memory where it will remain for a matter of minutes to hours. **The experimental methods used and the species of animal studied** can affect the precise duration of short-term memory. **A number of agents** including electroconvulsive shock (strong electric shocks applied to the head), low temperature, coma and deep anaesthesia can disrupt information that is being stored in short-term memory. **Any of these treatments** may produce a state known as retrograde amnesia, in which the memory of recent events is disrupted leaving earlier events unaffected. **Since more remote memories** are resistant to disruption, it has been concluded that the mechanism by which the information is stored in short-term memory differs from that for long-term memory. **Because short-term memory is disrupted relatively easily** by procedures which may be expected to have a profound effect on the electrical activity of the brain, it has been suggested that information is stored in short-term memory as reverberating electrical activity in the brain. **As information passes into long-term memory**, on the other hand, it is stored in a more durable form.

Memory can be divided into two phases: short-term memory and long-term memory. **The short-term memory** is where information that an animal learns enters first, and this information remains there for a matter of minutes to hours depending on the species of animal studied and how it is measured. **Information stored** in the short-term memory may be disrupted by a number of agents including electro-convulsive shock (strong electric shocks applied to the head), low temperature, coma and deep anaesthesia. **Any of these agents** may be expected to have a profound effect on the electrical activity of the brain and disrupt the memory of recent events to produce a state known as retrograde amnesia. **However, retrograde amnesia** leaves the memory of earlier events unaffected. Since **memory of earlier events** resists disruption, the mechanism by which the information is stored in short-term memory probably differs from that for long-term memory. **So,** it has been suggested that information is stored in short-term memory as reverberating electrical activity in the brain and can be disrupted relatively easily. **On the other hand,** information that passes into long-term memory appears to be stored in a more durable form.



## Final editing for style

- Is the paragraphing right?
- Do the sentences flow?
- Are there stumbling blocks?
- Can "impressive" language be simplified?
- Can it be shortened without losing the meaning?
- Does it still say what you want it to say?

Can it be shortened without losing the meaning?

- Change nouns to verbs so that the action of the sentence is in the verb
- Get rid of padding
  - Studies have demonstrated...
  - Our results reveal...
  - The findings of this study suggest that...
  - Recent evidence indicates...
  - A study of the literature shows...

# Editing a paragraph


The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.

86 words

# Editing a paragraph

## Is it a paragraph?

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.



# Editing a paragraph

## Do the sentences flow?

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. **Benefits** cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. **There is prima facie evidence** that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.

# Editing a paragraph

## Do the sentences flow?

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that ~~considerable~~ uncertainty remains. ~~Benefits~~ cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. ~~There is~~ *prima facie* evidence that there may be potential for significant ~~reductions~~ in fine particle emissions from the use of E10 in place of neat petrol.



# Editing a paragraph

## Stumbling Blocks 1: Noun clusters

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.

# Editing a paragraph

## Stumbling Blocks 2: Flowery language

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.



# Editing a paragraph

## Stumbling blocks 3: Nouns that could be verbs

The Taskforce considers that there may be potential for significant air-quality benefits from fuel ethanol **use**, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to **uncertainty**, but the potential for these to be substantial in the context of ethanol's long-term fuel-excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant **reductions** in fine-particle emissions from the **use** of E10 in place of neat petrol.

# Editing a paragraph

## Stumbling blocks 4: Acronyms

The Taskforce considers that there may be potential for significant air-quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel-excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine-particle emissions from the use of **E10** in place of neat petrol.

# Editing a paragraph

## The new version

The Taskforce considers that using ethanol in fuel may potentially improve air quality although we cannot yet be certain because we do not have the data to calculate the costs and benefits. For this calculation, we urgently need scientific and technical research. Benefits may be substantial because there is less fuel-excise on ethanol than on petrol and E10 may emit fewer fine particles than neat petrol.

65 words

# The original version

The Taskforce considers that there may be potential for significant air quality benefits from fuel ethanol use, emphasising that considerable uncertainty remains. Benefits cannot reasonably be costed at this time due to uncertainty, but the potential for these to be substantial in the context of ethanol's long-term fuel excise concession underscores the need for urgent scientific and technical research. There is prima facie evidence that there may be potential for significant reductions in fine particle emissions from the use of E10 in place of neat petrol.

# The four essential ingredients for successful writing

- Attitude
- Structure
- Style
- Salesmanship

Where to from here?

Getting it published

# Preliminary editing—the “colleague” test

- Who are your colleagues?
  - Co-authors
  - Others
- Beware of over familiarity
- Do it in stages
- Give your colleague guidelines

# Which journal?

- Impact factors
- "House" styles of journals
- The principle in choosing a journal. You want as many people as possible to
  - Read
  - Understand
  - Be influenced

So, Look for the journal that is likely to be read by the most people that you would like to influence.



# The covering letter

- Help the editor to find a reason to consider your paper. Eg. explain, briefly, how:
  - It complements recent papers in the journal
  - It gives a new insight into a problem that is in the journal's field
  - It is particularly topical and suited to the journal
- Be sure to have the correct names for both the editor and the journal
- Ensure that there are no spelling errors

# What happens at the journal?

- Editor checks for format and subject
- Editor sends to 2 referees for comment on content
- Referees return comments to Editor
- Editor assess suitability for publication
- Editor contacts Author with assessment
- Author and Editor correspond on amendments
- Editor accepts for publication

How many journals rejected your last paper before it was accepted?

	%
0	22
1	51
2	16
3	7
4	2
5	1
6+	1

\*From: *Peer Review Survey 2009* Wiley Blackwell

# The editor's verdict

- Accept without further changes
- Will re-look after minor changes
- Will re-look after major changes
- Reject and never darken my door again

# The good news about the Editor's letter that tells you that things need fixing

- Usually the comments from referees ARE helpful in improving the document
- You have, for the first time, a list of things that you can do which will virtually guarantee publication

# Resubmitting to a Journal

Address every point made by both referees and the editor and submit a list as proof that you have.

If you can live with the suggested changes accept them with tact. Establish your credibility.

If you can't, argue your case with logic and sound reasoning and you will probably win the day.

Editors are always right...

...even when they are wrong

Referees who are wrong can be  
successfully challenged...

...but base your challenge on  
reason and logic —not emotion