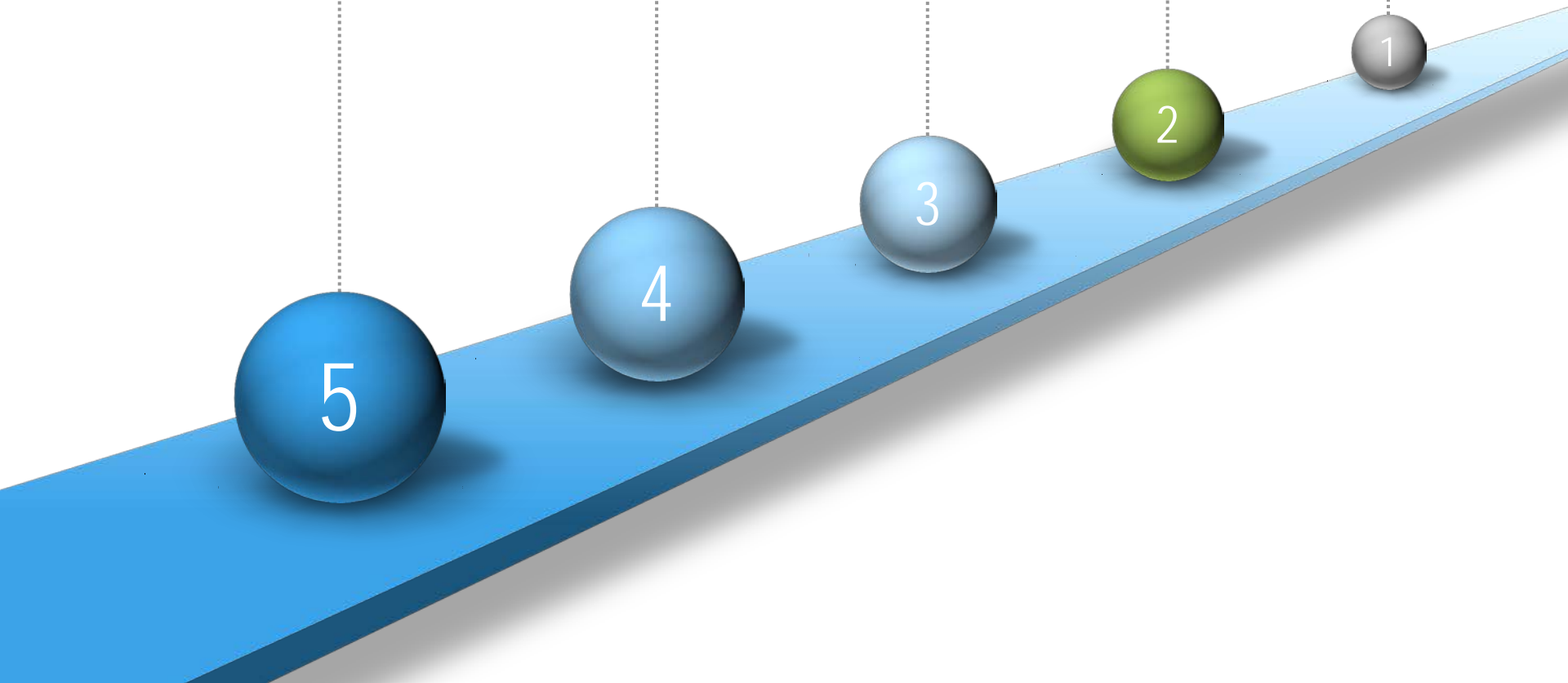


**STEPS TO STRUCTURING A SCIENCE PAPER  
EDITORS WILL TAKE SERIOUSLY**

# The IMRAD format (research papers)

<b>Conclusion</b>	<b>Discussion</b>	<b>Results</b>	<b>Methods</b>	<b>Introduction</b>
<b>Acknowledgements</b>	What does it mean?	What did you find?	How did you do it?	What did you/others do? Why did you do it?
<b>References</b>				
<b>Supporting Materials</b>				



# Length of the manuscript

**Title:** short and informative

**Abstract:** 1 paragraph (<250 words)

**Introduction:** 1,5-2 pages

**Methods:** 2-3 pages

**Results:** 6-8 pages

**Discussion:** 4-6 pages

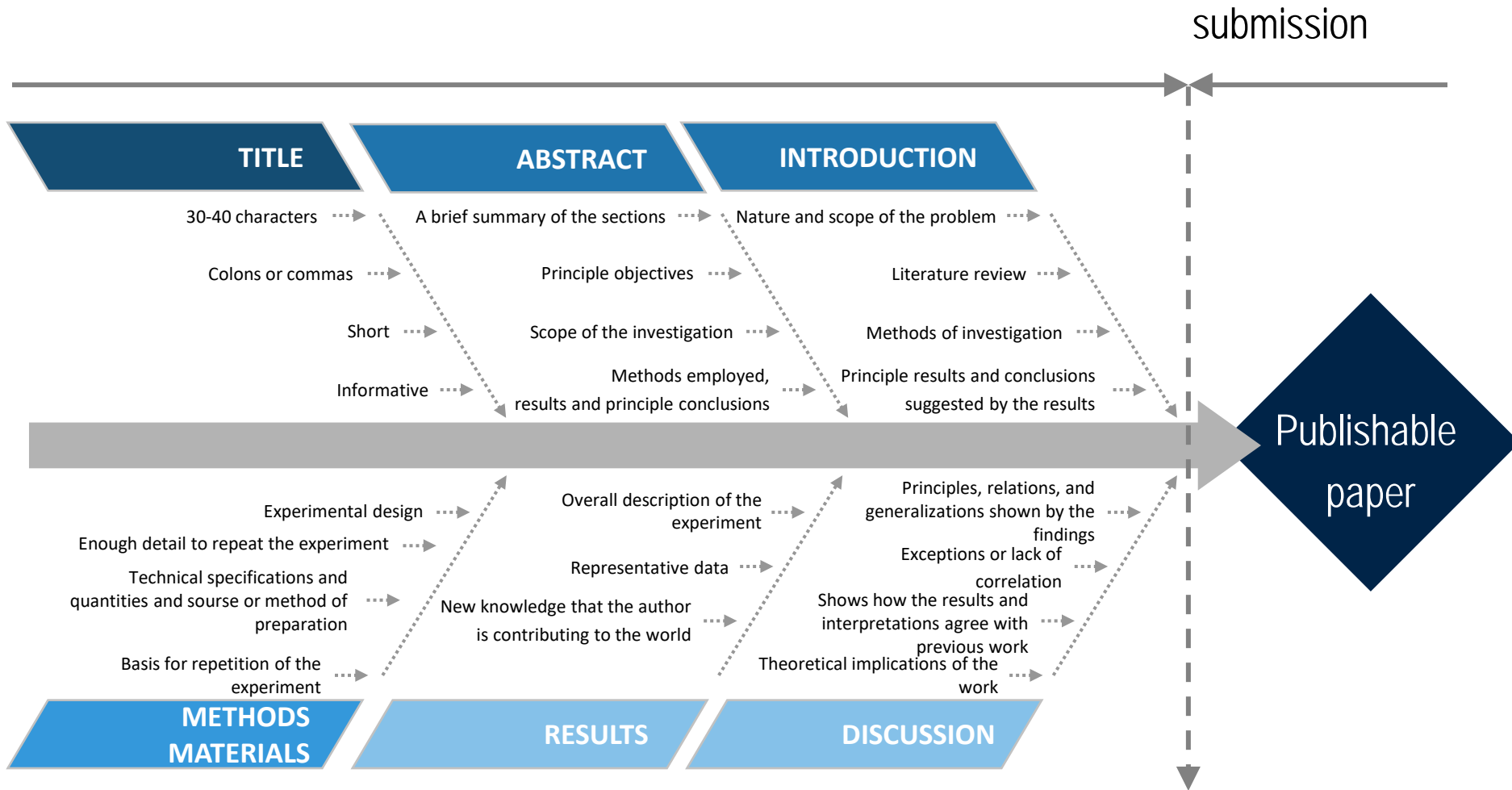
**Conclusion:** 1 paragraph

**Figures:** 6-8 ( one per page)

**Tables:** 1-3 (one per page)

**References:** 30 -50 publications (2-4 pages)

# Preparing a research paper



# Steps to organizing your manuscript

1

## Prepare the figures and tables

Tables give the actual experimental results, while figures are often used for comparisons of experimental results with those of previous works, or with calculated/theoretical values.

2

## Write the Methods

If your paper is proposing a new method, you need to include detailed information so a knowledgeable reader can reproduce the experiment.

But do not repeat the details of the established methods.

3

## Write up the Results

Only representative results from your research should be presented. The results should be essential for the discussion.

# Steps to organizing your manuscript

A large, 3D-rendered number '4' in a light gray color, positioned to the left of the first step's text.

## Write the Discussion

Make the Discussion corresponding to the Results, but do not reiterate the results. You need to compare the published results by your colleagues with yours. Never ignore work in disagreement with yours, in turn, you must confront it to convince the reader that you are correct or better.

A large, 3D-rendered number '5' in a light green color, positioned to the left of the second step's text.

## Write a clear Conclusion

This section shows how the work advances the field from the present state of knowledge. Provide a clear justification for your work. Suggest future experiments and point out those that are underway.

A large, 3D-rendered number '6' in a light gray color, positioned to the left of the third step's text.

## Write a compelling Introduction

A good introduction should answer the following questions: What is the problem to be solved? Are there any solutions? Which is the best? What is its main limitation? What do you hope to achieve?

# Steps to organizing your manuscript



## 7. WRITE THE ABSTRACT

- What was done?
- What were the main findings?



## 8. COMPOSE A CONCISE AND DESCRIPTIVE TITLE

- Needs to be specific
- Reflects the content of the manuscript



## 9. SELECT KEYWORDS FOR INDEXING

- Avoid words with broad meaning
- Include the words that are already included in the title and the abstract



## 10. REFERENCES

- Do not include unpublished observations, manuscripts submitted but not yet accepted for publication, publications that are not peer reviewed, grey literature, or articles not published in English

# SUCCESSFUL SCHOLARLY PUBLICATION: PARAMETERS

EFFECTIVE  
RESEARCH

MECHANICS

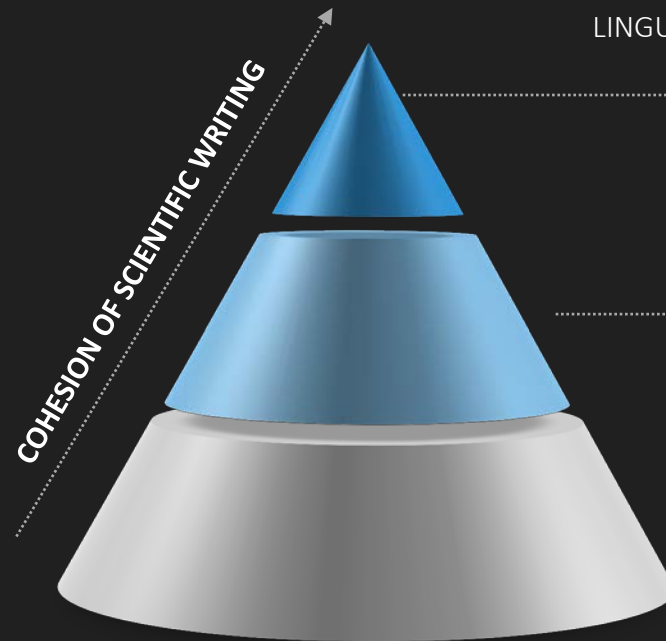
LINGUISTIC, SYNTACTICAL, LEXICAL AND STYLISTIC  
DEVICES

ORGANIZATION

LOGICAL STRUCTURE OF RESEARCH

FOCUS

CORE IDEA, MAIN THESIS



ACADEMIC LITERACY



# Title

Broadly explains what the paper is about.

Papers with titles between 31 and 40 characters are cited the most.

Titles containing a comma or colon are cited more.

Avoid question marks and exclamation marks. The title should convey the most interesting and surprising new results from the study.

# Abstract

Summarizes the major aspects of the entire paper in the following sequence: the question(s) investigated (or purpose) (from Introduction), the experimental design and methods used (from Methods), the major findings including key quantitative results, or trends (from Results), a brief summary of your interpretations and conclusions (from Discussion).

Use active voice when possible.

Write concise, but complete, sentences.

Use past tense because you are reporting on research that has been completed.

Maximum length should be 200-300 words, usually in a single paragraph.

Avoid non-standard or uncommon abbreviations.

# Author(s)

Indicates the given name(s) and family name(s) of each author.

The person who writes the manuscript is usually the “first author”. The second most important position is the last person of the list.

In between those two critical positions, you will find everyone else in order of importance.

So the second position is the third best, the third is the fourth best, etc.

# Affiliation

Presents the authors' affiliation addresses (where the actual work was done).

Provides the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

An affiliation is an institution that pays the authors for their work. Authors can have multiple affiliations. Be aware that each affiliation is attributed a share of the author's scores. This means that an author with affiliations in several countries will not count fully in each.

# Keywords

(Check the journal requirements)

Avoid words with a broad meaning and words already included in the title.

# Highlights

Provide a short collection of bullet points that convey the core findings and provide readers with a quick textual overview of the article.

Include 3 to 5 highlights. There should be a maximum of 85 characters, including spaces, per highlight. Only the core results of the paper should be covered.

# Introduction

Presents the nature and scope of the problem investigated.

Briefly reviews the pertinent literature to orient the reader.

States the methods of the investigation. If necessary, the reasons for the choice of a particular method (the rationale of the research)

States the principle results of the investigation.

States the principle conclusions suggested by the results.

Use personal pronouns (I/we) to announce the research and principle findings.

Organize the introduction from general background to specific, relating to your research.

Do not mix the introduction with results, discussion, and conclusion.

# Materials & Methods

Describes (if necessary, defends) the experimental design.

Provides enough detail so that a competent worker can repeat the experiment.

Provides information that will let readers judge the appropriateness of the experimental methods.

Includes the exact technical specifications and quantities and sources or methods of preparation.

Use personal pronouns (I/we) to explain a procedure and to assume your personal responsibility for actions or decisions that were different from the norm or from what was expected.

Use past tense to describe the details of your research.

Do not repeat the details of the established methods.

List the methods in the logical order in which you conducted the research.

Avoid adding comments.



# Results

Gives some kind of overall description of the experiment, providing the big picture.  
Provides representative data.  
Constitutes the new knowledge that the author is contributing to the world.

## TIPS

Use personal pronouns (I/we) to express your responsibility for particular methodological decisions.  
Use past tense when referring to your results.  
Use tables to present the actual experimental results.  
Use figures for comparisons of experimental results with those of previous works, or with calculated/theoretical values.  
Do not include references.

# Discussion

Presents the principles, relations, and generalizations shown by your research findings.

Points out any exceptions or any lack of correlation.

Shows how your results and interpretations agree (or contrast) with previously published works.

Provides theoretical implications of your research, as well as any possible practical applications.

Use personal pronouns (I/we) to claim responsibility for findings that may carry novelty to the scientific community.

Use of the first person is generally acceptable, but too much use of the first person can actually distract the reader from the main points. Never ignore work in disagreement with yours.

# Conclusion

Highlights key points in your analysis or results. Notes important or unexpected implications applied to practice. Summarizes your thoughts and conveys the significance of your study and the importance of your ideas. Identifies how a gap in the literature has been addressed.

Introduces possible new or expanded ways of thinking about the research problem. Offers new insights and creative approaches for the research problem based on the results of your study.

Use Present Simple to write about what is now known or is still needed.

Do not introduce new information.

Do not repeat the abstract.

Do not list experimental results.

# Acknowledgements

Acknowledges any significant technical help received from any individual, as well as any outside financial assistance, such as grants or fellowships.

Avoid the word "wish".  
Before mentioning someone in an acknowledgement, obtain permission from him or her.

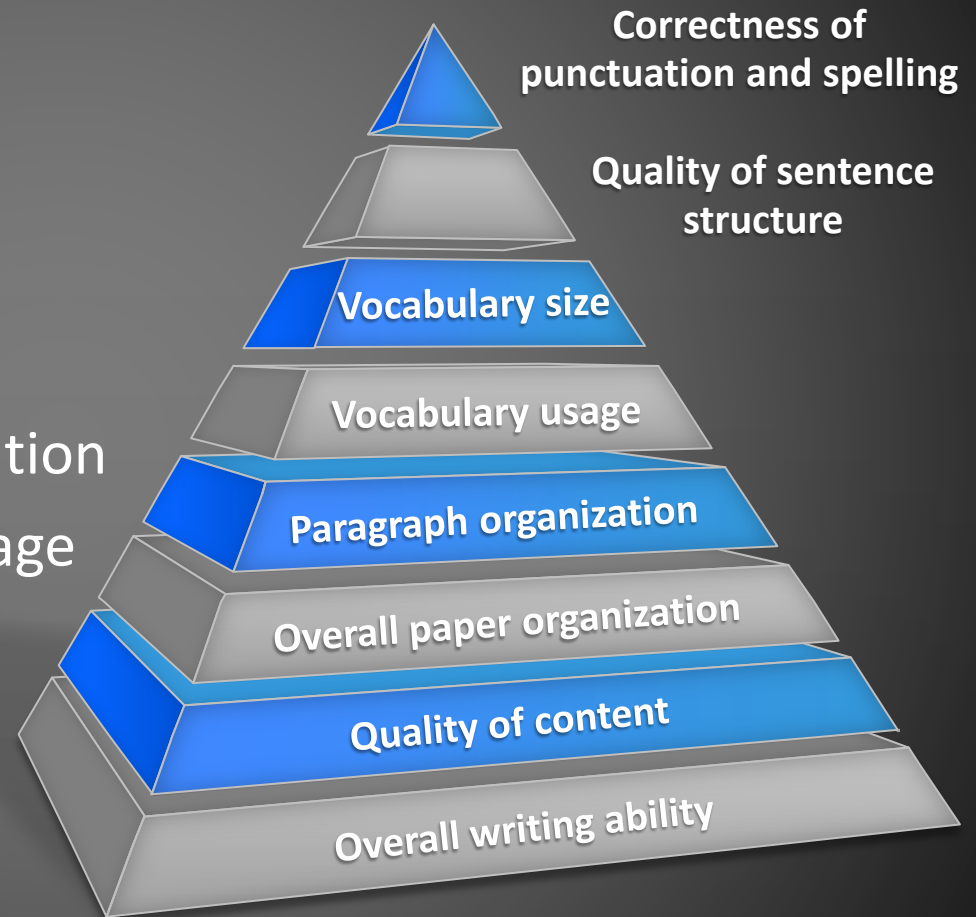
# References

Lists significant published works.  
Cites all the scientific publications on which your work is based.

Before using citation management software (EndNote, RefWorks, Mendeley, etc.), check the journal's requirements. Cite papers from the journal to which the paper will be submitted. Include most recent papers from the domain. Cite papers that other researchers in your domain see as important and cite often themselves. Never cite what you have not read.

# Written Communication Performance

- Overall writing ability
- Quality of content
- Quality of overall paper organization
- Quality of paragraph organization
- Correctness of vocabulary usage
- Vocabulary size
- Quality of sentence structure
- Correctness of punctuation



# The commandments

1

Be as clear, concise, and focused as possible without sacrificing the meaning of your writing.

2

Keep your sentences as well as paragraphs reasonably short – **less is more!**

3

Simplify, otherwise you will lose your readers.

4

Choose from among the many variables and stick to your choice.

5

Think small – decide what specifically you want to write about and make sure you stick to the subject, cover it well and ... stop.

# The commandments

6

Write in active voice.

7

Use **I** and **We** for self-promotion in the international academic community.

8

Frame and contextualize everything and always let your reader know what you are doing and why.

9

Define all your terms the moment you first mention them.

10

Avoid unnecessary jargon.



# The commandments

The use of performance measurements is designed to provide all levels of management and eventually the Board with a device that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

47 words

# The commandments

The ~~use of~~ performance measurements is designed to provide all levels of management and eventually the Board with a device that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements ~~is designed to~~ **will** provide all levels of management and eventually the Board with a device that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements will ~~provide~~ give all levels of management and eventually the Board ~~with~~ a device that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements will **give** all levels of management ~~and eventually the Board~~ a device that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements will give all levels of management a ~~device~~ **tool** that will afford the criteria to make some determination as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements will give all levels of management a **criteria-setting** tool ~~that will afford the criteria to make some determination~~ as to the cost-benefit ratio effectiveness of any given activity – and consequently a determination of the funding level.

# The commandments

The performance measurements will give all levels of management a **criteria-setting** tool for determining ~~as to the~~ cost-benefit ratio ~~effectiveness of any given activity~~ — and consequently a ~~determination of the~~ funding level of every activity.



# The commandments

The performance measurements will give all levels of management a criteria-setting tool for determining the cost-benefit ratio and consequent funding level of every activity.

25 words

## Common issues: pronouns

he, she, him, her, it, they, this, that, these, those, which, that

Henry Jones told John Smith that the paper on which he was working needed more citations.

## Common issues: pronouns

### **Whose paper needed more citations – Henry's or John's?**

Henry Jones told John Smith that the paper on which he, Jones, was working needed more citations.

Henry Jones told John Smith that the paper on which Henry was working needed more citations.

Henry Jones told John Smith that the paper on which Smith was working needed more citations.

Henry Jones told John Smith that the paper on which John was working needed more citations.

## Common issues: pronouns

this, that, these, those

In contrast to *this*, the group of low-income parents do not have the means to save in order to insure themselves against future risks.

In contrast ~~to *this*, the group of~~ low-income parents do not have the means ~~to save in order~~ of saving to insure themselves against future risks. **What risks? [financial? medical?]**

## Common issues: pronouns

it, they

Related studies put forward three possible explanations for this phenomenon. *They* start from two common premises.

Related studies put forward three possible explanations for this phenomenon. *These studies* start from two common premises.

Related studies put forward three possible explanations for this phenomenon. *These explanations* start from two common premises.

# Common issues: pronouns

I, we

*“Nowhere has anyone attempted ... In this article I aim to do just that”*

A corpus-based study of self-promotional I and we in academic writing across four disciplines

**Nigel Harwood**

The Department of Language and Linguistics, University of Essex, Wivenhoe Park,  
Colchester C04 3SQ, UK

Journal of Pragmatics, 2005

# Common issues: squinting modifiers



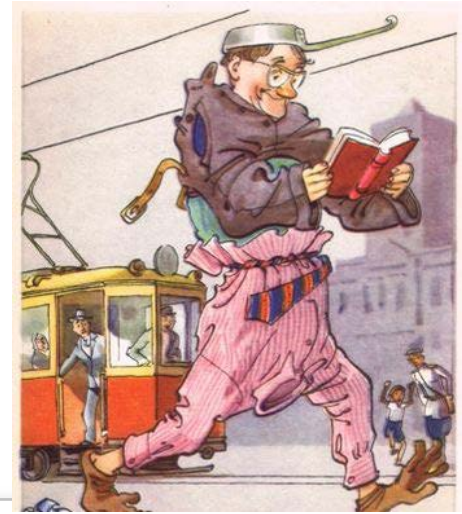
*The researchers said on Wednesday they would attend the meeting.*

*On Wednesday the researchers said that they would attend the meeting.*

*The researchers said that they would attend the meeting on Wednesday.*

*The researchers said that they would attend the Wednesday meeting.*

# Common issues: misplaced modifiers



*Professor Smith has resigned as head of research after having worked here for 10 years to the regret of the entire staff.*

To the regret of the entire staff, Professor Smith has resigned as head of research after having worked here for 10 years.

Professor Smith, to the regret of the entire staff, has resigned as head of research after having worked here for 10 years.

Professor Smith has resigned head of research, to the regret of the entire staff, after having worked here for 10 years.

The entire staff regrets the resignation of Professor Smith as head of the research, after his 10-year career here at the institute.



# Common issues: dangling modifiers



*Based on our review of the findings, we agree that the researcher should reconsider his conclusions.*

Based on our review of findings, *our decision* is that the researcher should reconsider his conclusions.

Based on our review of findings, *our position* is that the researcher should reconsider his conclusions.

After reviewing the findings, we agree that the researcher should reconsider his conclusions.

# Aristotle's Logic

## **Ethos (Credibility)**

- convincing by the character of the author. The necessity to project an impression to the reader that you are likable and worthy of respect



## **Pathos (Emotional)**

- persuading by appealing to the reader's emotions. Language choice affects the audience's emotional response, and emotional appeal can effectively be used to enhance an argument

## **Logos (Logical)**

- persuading by use of solid evidence and reasoning

**Thank you**  
for your attention

