

# How to Write A Scientific Paper: common challenges and strategies for improvement



Never Stand Still

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# Welcome!

“If you want to change the world, pick up your pen and write”

– Martin Luther King

# Common challenges in producing a good scientific paper

1. Still researching, not yet ready for writing?
2. Too broad objective
3. Unclear argument
4. No word budget planning
5. Limited knowledge of the requirement of the targeted publishing media
6. No review before submission
7. Poor transition between sections
8. Introduction and conclusion not linked together
9. Inconsistency - changes in tones in different sections consistency
10. Limited confidence in making new claims to knowledge

## Common Problems



**Writing Frame:** “I have a lot of practical experience, data and information. But I do not have useful frameworks to organize them”

**Epistemological Value of Everyday Actions:** “My *videsi* friend wrote 42 pages out of the 4 day trip. I had hardly 4 pages from the same”.

**Incentives:** “My boss and entire organization value what I have done, but not what I have written”.

**Attitude and Cultural Dispositions:** “I find it boring to write”.

**Skills:** “I have made several attempts but did not really get through”.

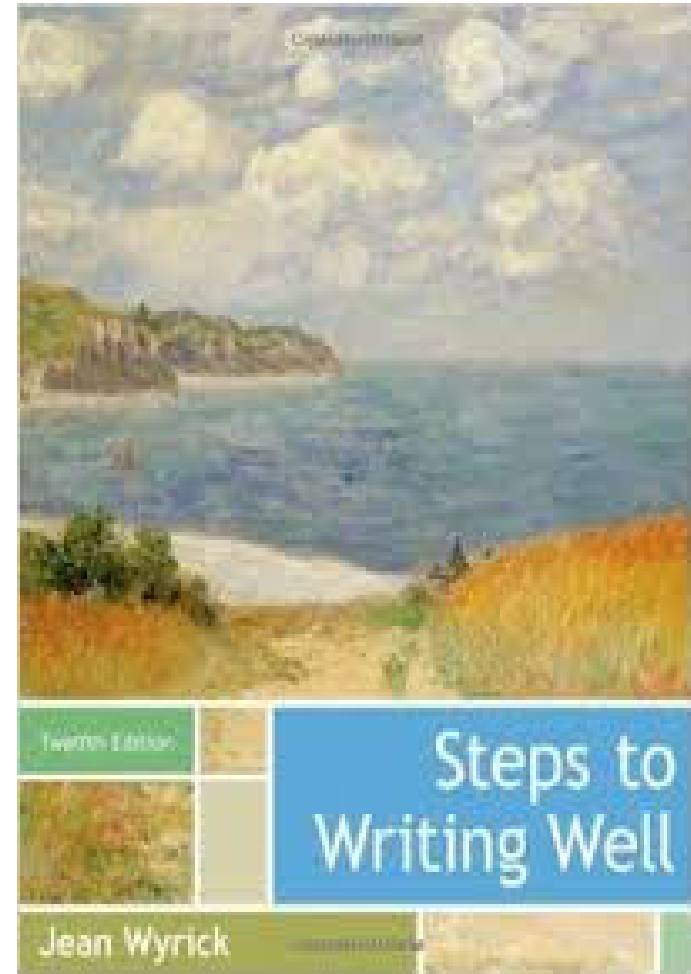


# Challenge 1: How to plan a scientific paper?

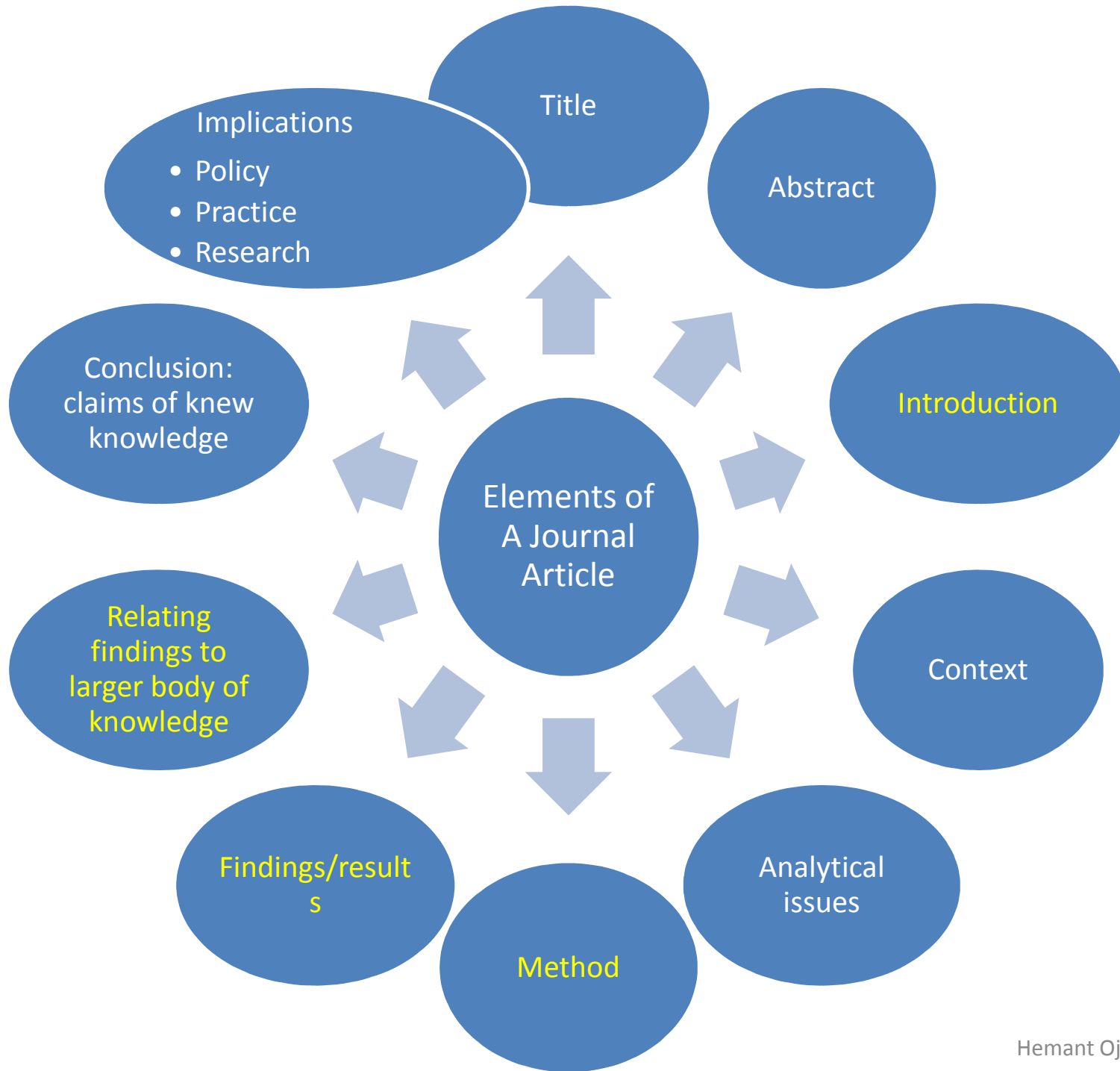


# Varieties of scientific writing

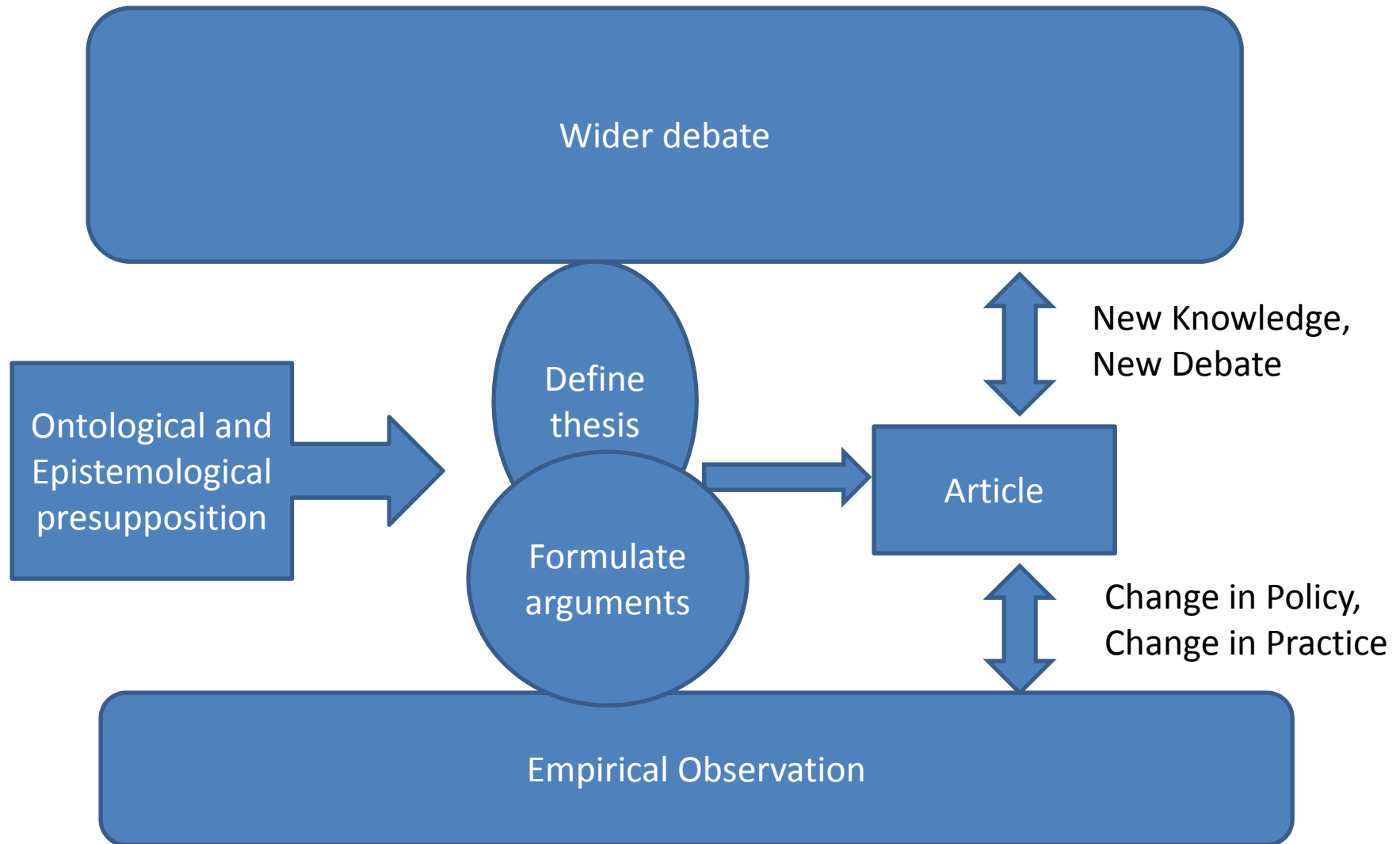
- Journal articles
- Review essay or research articles to Journal
- Research monographs
- Feasibility reports
- Think tank discussion papers
- Short articles and papers to Journals
- Media OP-ED
- Policy briefs
- Book chapters
- Books
- Edited books



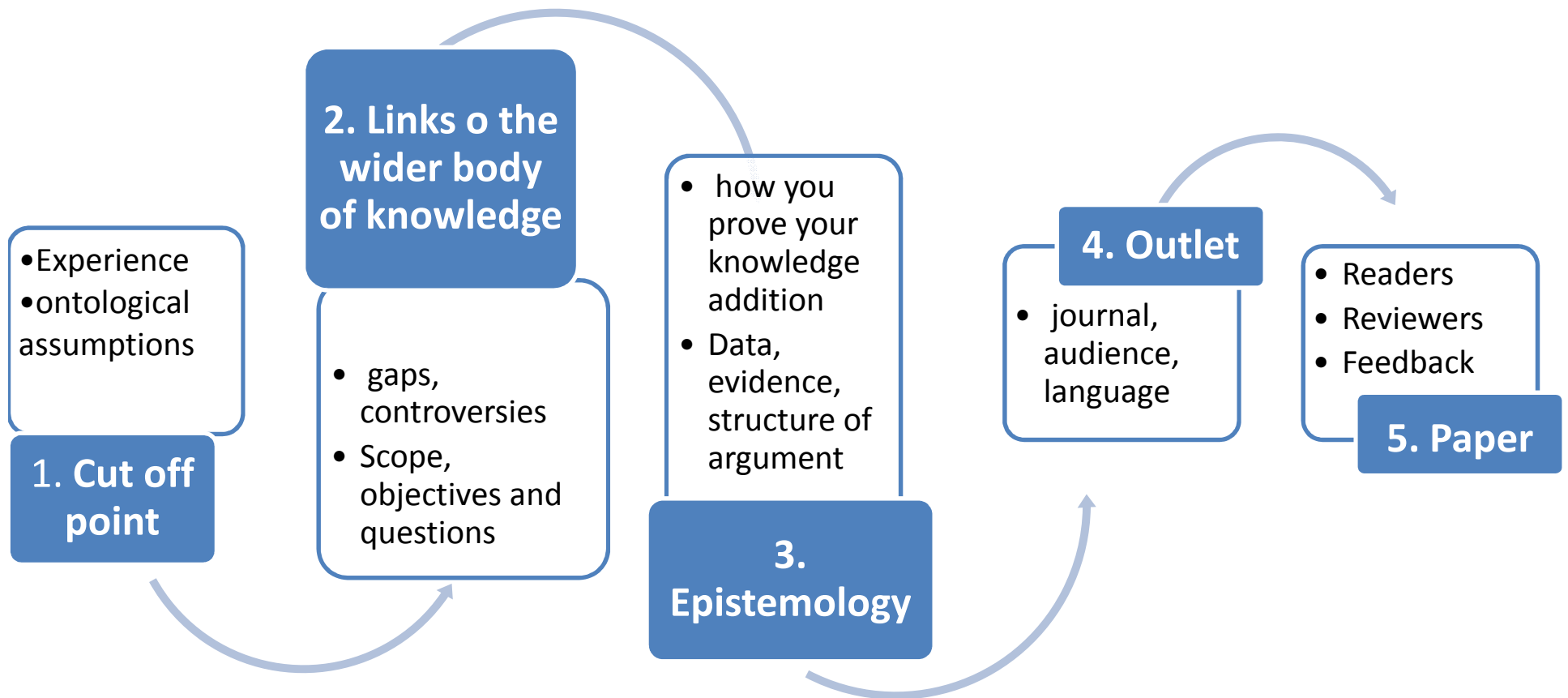




# Framing an Article /Scientific Paper

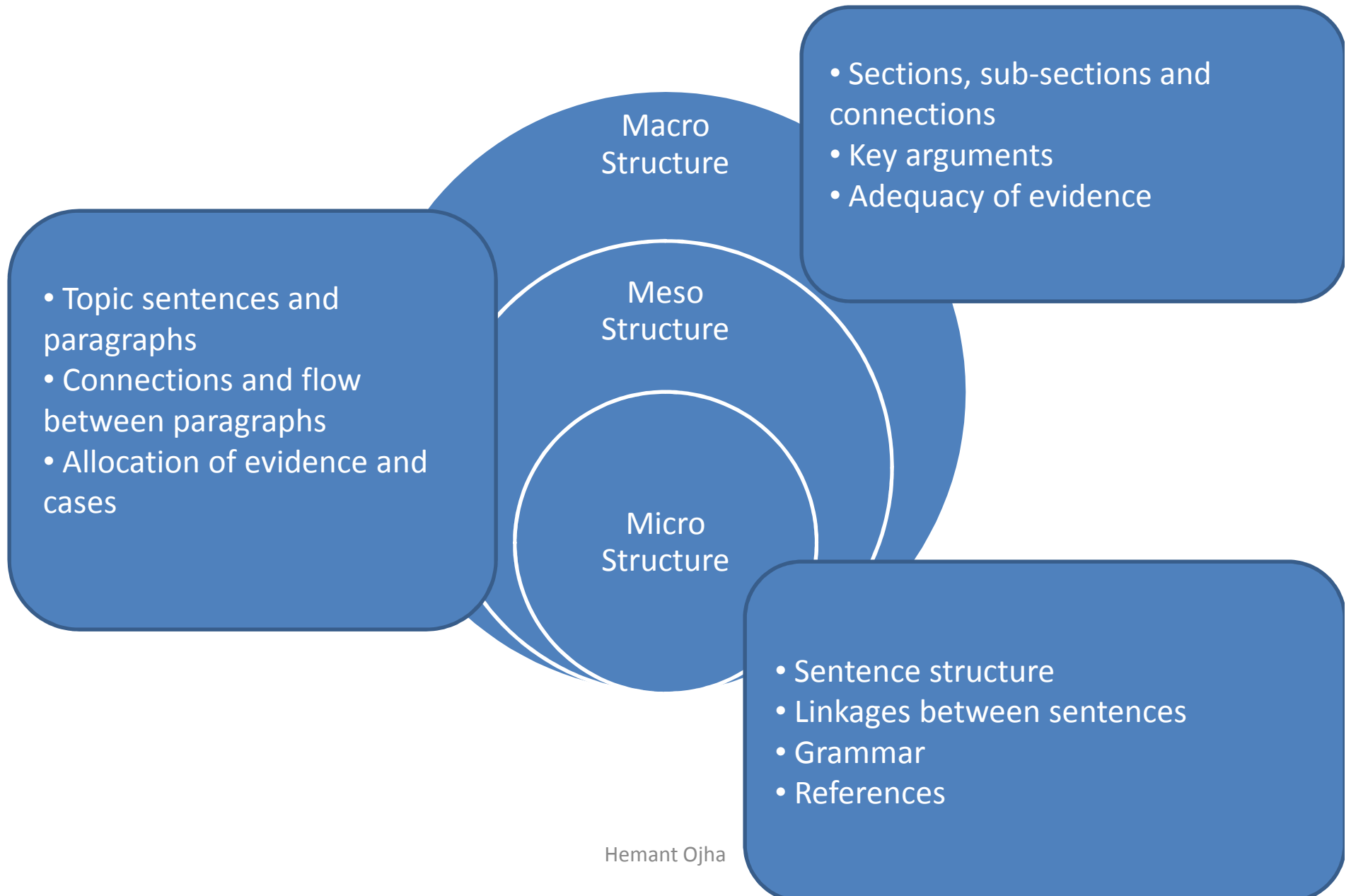


# Writing a Scientific Paper: Five Milestones



# Challenge 2: How to structure the paper?

# Structuring a Scientific Article



# Macro Structure

- Recognize your **purpose** and remember your **audience**
- List down the **‘specific arguments and supportive ideas’** that you want to bring
- **Delimit the coverage** of the paper - select only appropriate details
- **Capture, conceptualize and report the factual results** of an investigation
- **Bring examples, explain causes, offer reasons** – to persuade your reader that the opinion expressed in the thesis is a sensible one.
- **Consider the technicalities of the writing** - format, outline, and structure

# Meso Structure

- **Topic sentences (of paragraph)**
  - supports the thesis by clearly stating a main point in the discussion, announces what the paragraph will be about and controls the subject matter (examples, details and explanation) of the paragraph.
  - Focused and precisely stated **Topic sentence** will help reader to understand the point of the paragraph and also help you select, organize and develop your supporting details.
  - generally put as the first/second or last sentence of the paragraph.
- **Paragraphs**
  - Each paragraph presents and develops one main point in the discussion.
  - Use specific details with adequate clarity on message
  - Consider the focus and precision of the content

# Meso Structure

- **Connections and flow between paragraphs**
  - Choose a **logical arrangement** that makes specific information easy to locate to support argument - use a layout that is most common.
  - Consider flow of ideas and logical connection - avoid an erratic organization of details
  - Maintain analytical consistency- avoid any sudden changes in perspective
  - Coherent sequencing of paragraphs is also equally important.
- **Allocate evidence to each of the sections and arguments**

- .



# Micro Structure

- **Explain, exemplify, define or support** your topic sentence.
- **List down the specific information, data and evidences** that support your [specific] arguments – these evidences may come from different sources such as your practice, original work, secondary literatures/reports etc.
- Give the **sources of evidence** by
  - **citing** (process of indicating where an idea or information comes from),
  - **quoting** (the use of exact words from another source),
  - **paraphrasing** (expressing the original ideas in different words).

# Challenge 3: How to choose the style of the paper?

# Different styles of scientific writing

Style 1	Style 2	Style 3	Style 4	Style 5
Introduction	Introduction	Introduction	Introduction	Introduction
Methodology	Theory	Findings	Context	Aspect A
Findings	Methodology	Discussion	Concept and methods	Aspect B
Discussion	Findings	Conclusion	Findings	Aspect C
Conclusion	Discussion		Discussion	Aspect D
	Conclusion			Conclusion

# Challenge 4: How to craft a good thesis statement and argument?

# Thesis Statement – What?

- It declares the **controlling idea** of the paper

In this paper, we demonstrate that community institutions are more effective than private groups in energy service delivery.

(Weak: this paper analyses service delivery..)

The aim of this paper is to present the findings of research which shows that bambboo can sith stand earthquake up to 7 Ritchter scale

(Weak: this paper presents...../analyzes....)

# Writing A Good Thesis Statement

- States the writer's **clearly defined opinion** on the subject.
- Asserts **one good idea**.
- Has something **worthwhile to say**.
- Clearly **fit with the goal** of the paper
- **Clearly stated** in specific terms.
- **Easily recognized** as the main idea and often located in the **first or second paragraph of the Introduction** .
- Allows you to find out your real **focus** and/or expand the **scope** of the paper.
- Helps you to **organize** your paper.

# Argument

- I/we argue that.....
- It is argued that.....
- This paper challenges the view that....
- This paper refutes the view that....
- This paper questions the theory that....

# Challenge 5: How to write a good Introduction section?



# Introduction: key questions you must address for the readers

- What is the paper about?
- Why is this paper important to read?
- What is your thesis? Argument?
- Is the paper really based on credible and valid method?
- How does the paper unfold in the rest of the sections?

# Key challenges in writing the Introduction

- 1<sup>st</sup> sentence?
- Writing to impress and retain the reader
- Keeping flow
- Focusing on ‘introducing’ and not on ‘describing’, ‘analyzing’ or ‘concluding’
- Dealing with overlaps with other sections – context, theory, method, conclusion

# 'Introduction' of a Paper

Elements	Options
1. Opening	<ul style="list-style-type: none"><li>- Interesting quote, fact, figure</li><li>- A controversial statement</li><li>- A theoretical debate statement</li><li>- An empirical problem</li></ul>
2. Problematising	<ul style="list-style-type: none"><li>- Referring to wider literature</li><li>- Explaining the scale, diversity and severity of the problem</li></ul>
3. Clarifying your argument and thesis	<ul style="list-style-type: none"><li>- Contrasting with existing theory</li><li>- Filling the gaps in knowledge and evidence</li><li>- New evidence or case to existing theory</li></ul>
4. Outlining aims and objectives	<ul style="list-style-type: none"><li>- 2 to 3 specific objectives - coherently framed under a single aim</li></ul>
5. Clarifying the flow of the paper	<ul style="list-style-type: none"><li>- Explain how different sections are organized and how the argument flows</li></ul>

# Challenge 6: How to write a good conclusion section?

# Writing 'Conclusion'

- So what?
- 1<sup>st</sup> sentence?
- Make a clear claim of new knowledge
- Do not bring new idea
- Do not reproduce evidence / do not repeat the body text
- Give your opinion on the fact/analysis
- Include a call for action (policy, practice)
- Link back to introduction

# Challenge 7: How to ensure a good transition and flow inside the section?

## TRANSITION SETS

Adapted from Step Up to Writing Tool 4-80A Copyright 2005  
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- Introduce new ideas.
- Connect key/star ideas (reasons, details, or facts).

### Basic Transitions Sets

- One • The other
- One • Another
- First of all • Also
- To begin • Next
- One • Equally important
- First of all • Next • The final
- One example • Another example
- A good example • A better example
- An important • An equally important
- A good • A better • The best
- To begin • Then • After that
- One way • Another way • A final method
- Initially • Then • After that
- A bad • A worse • The worst
- To begin • At the same time • Finally
- First of all • Besides • In addition

### Transition Words for Showing Place or Location

- Near
- Beside
- On top of
- Between
- Across from
- Outside
- Inside
- Behind
- Next to
- By
- Throughout
- To the right of
- On the left side

### Transition Words for Showing Time

- Before
- During
- Until
- After
- Later
- Then
- Meanwhile
- As soon as
- Sometimes

### Transitions Words for Showing Alike or Different

- Similar to
- Equal to
- A similar
- Another
- The same as
- Unlike
- On the other hand
- Just the opposite
- Different from
- But

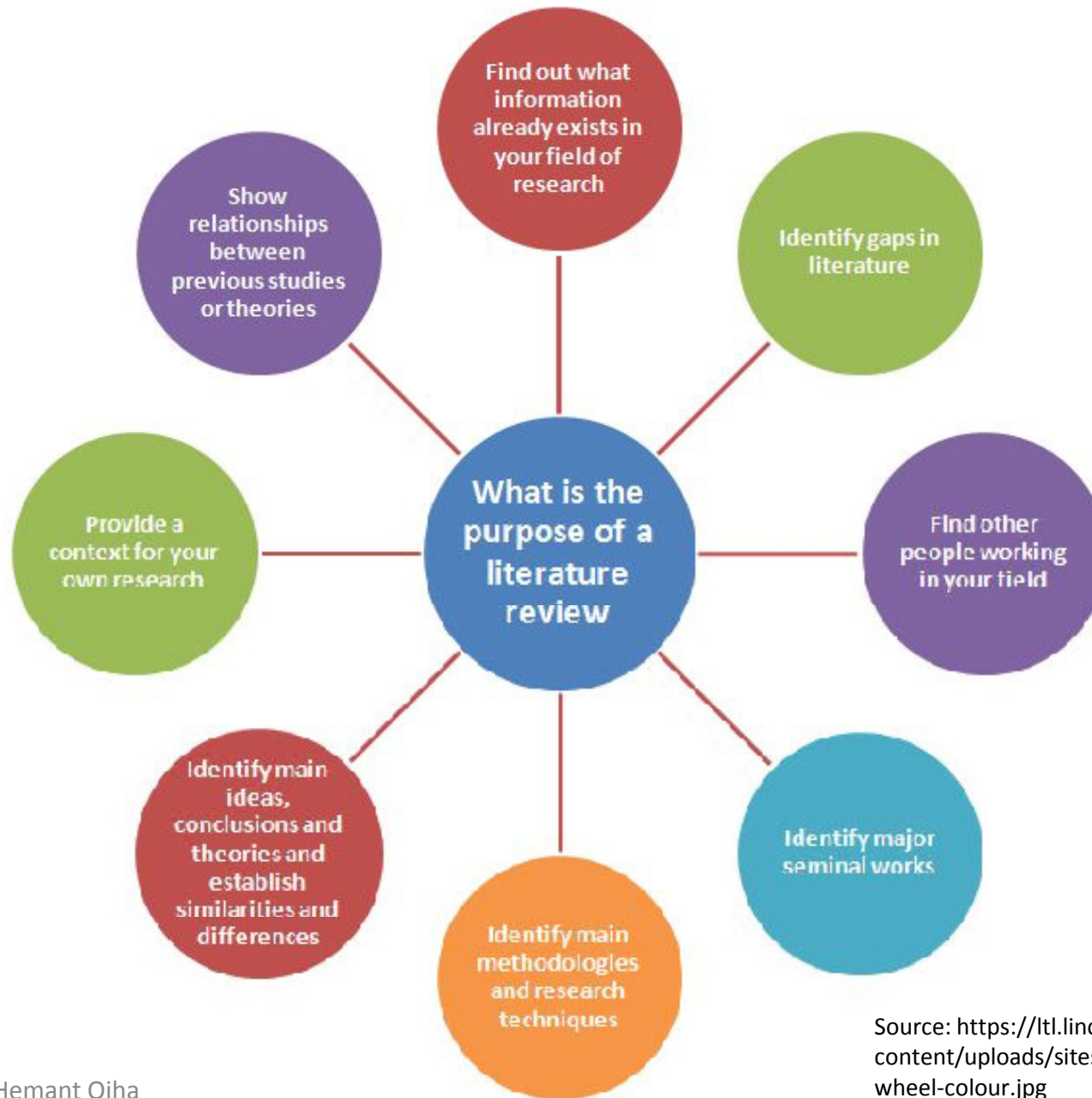
### Transitions Words for Making a Point

- For example
- For instance
- In other words
- The most important
- Furthermore
- An example of
- As well as

# Transition Words

<u>Green</u>	<u>Yellow</u>	<u>Red</u>
One reason First For example One example To begin with To start with	Second Third Another reason Another example Also As well as Too In Addition Additionally	Last Finally In conclusion In summary In short So you can see As one can see To summarize Hence

# Challenge 8: How to accurately cite a literature?





# Challenge 9: How to write abstract?

## **1. Reason for writing:**

What is the importance of the research? Why would a reader be interested in the larger work?

## **2. Problem:**

What problem does this work attempt to solve? What is the scope of the project? What is the main argument, thesis or claim?

## **3. Methodology:**

An abstract of a scientific work may include specific models or approaches used in the larger study. Other abstracts may describe the types of evidence used in the research.

## **4. Results:**

An abstract of a scientific work may include specific data that indicates the results of the project. Other abstracts may discuss the findings in a more general way.

## **5. Implications:**

How does this work add to the body of knowledge on the topic? Are there any practical or theoretical applications from your findings or implications for future research?

**Thank you.**