

How to Structure a Scientific Manuscript in English

Mikyoung Lee

National Cancer Center

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About Me

Mikyoung Lee, PhD

Education

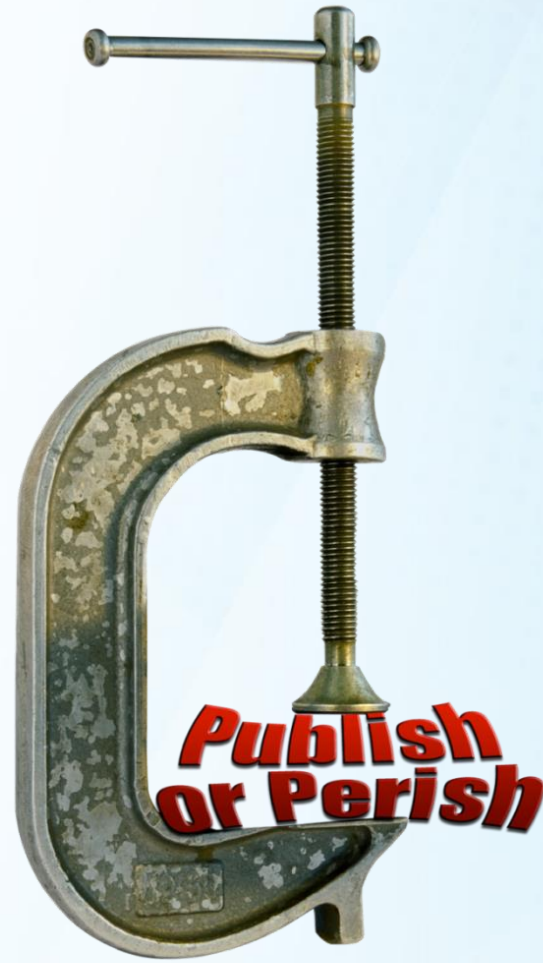
- PhD, Educational Psychology, University of Munich, Germany
- PhD, Science of Nursing, Chonnam National University
- MA, TESOL (Teaching English to Speakers of Other Languages), Sookmyung Women's University
- BA, Science of Nursing, Yonsei University

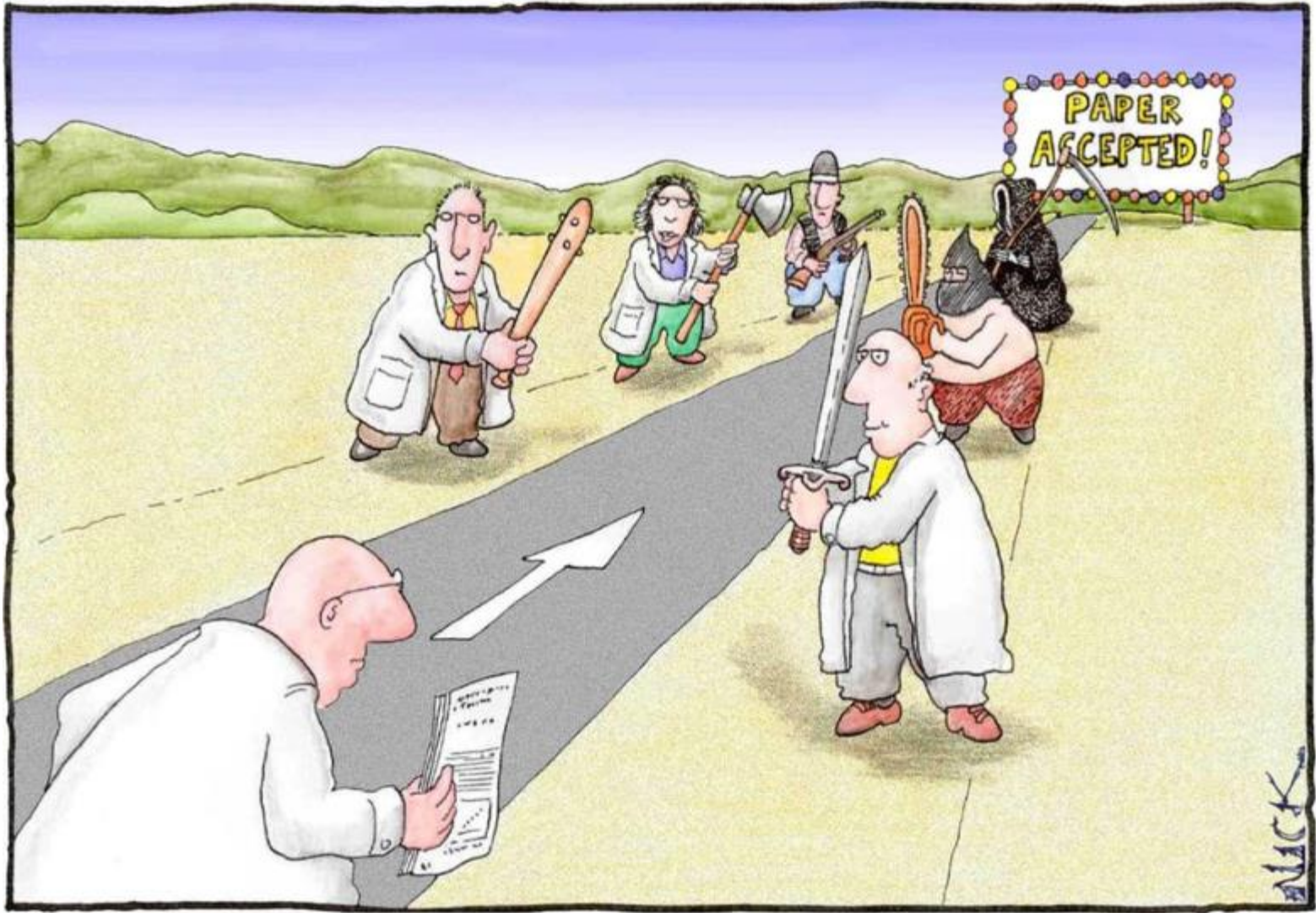
Research & Work Experiences

- Assistant Professor, Nursing Department, Kwangju Women's University
- Guest Researcher, Educational Psychology, University of Munich, Germany
- Research Committee Chair, Korea TESOL (대한영어교육학회)
- Editorial Board member, Journal of Korea TESOL
- Academic Trainer & Consultant, Editage
- Research Project, National Research Foundation of Korea (한국연구재단)
- Research Project, Bio-medical Research Institute, Chonnam National Univ. Hospital
- Former Visiting Scholar, Educational Psychology, University of Texas (UTSA), USA
- Published papers in international & domestic venues (SCI, SSCI, SCOPUS, KCI)



Survival of the Fittest





Myths about academic writing



Advanced technical
terminology

Complex ideas or
procedures



Complicated
sentence structure

Unnecessarily
complex words

Present complex ideas in plain, simple language

Myths about academic writing

Myth: The use of the first person or the active voice should be avoided in academic writing because it is informal.

Fact: The active voice is perfectly acceptable in academic writing. Overuse of the passive voice leads to awkward sentences.

Process from research to publication



Workshop Outline

- 1. The Structure of a Manuscript**
- 2. General Tips on Manuscript Preparation**
- 3. How to Improve Clarity**

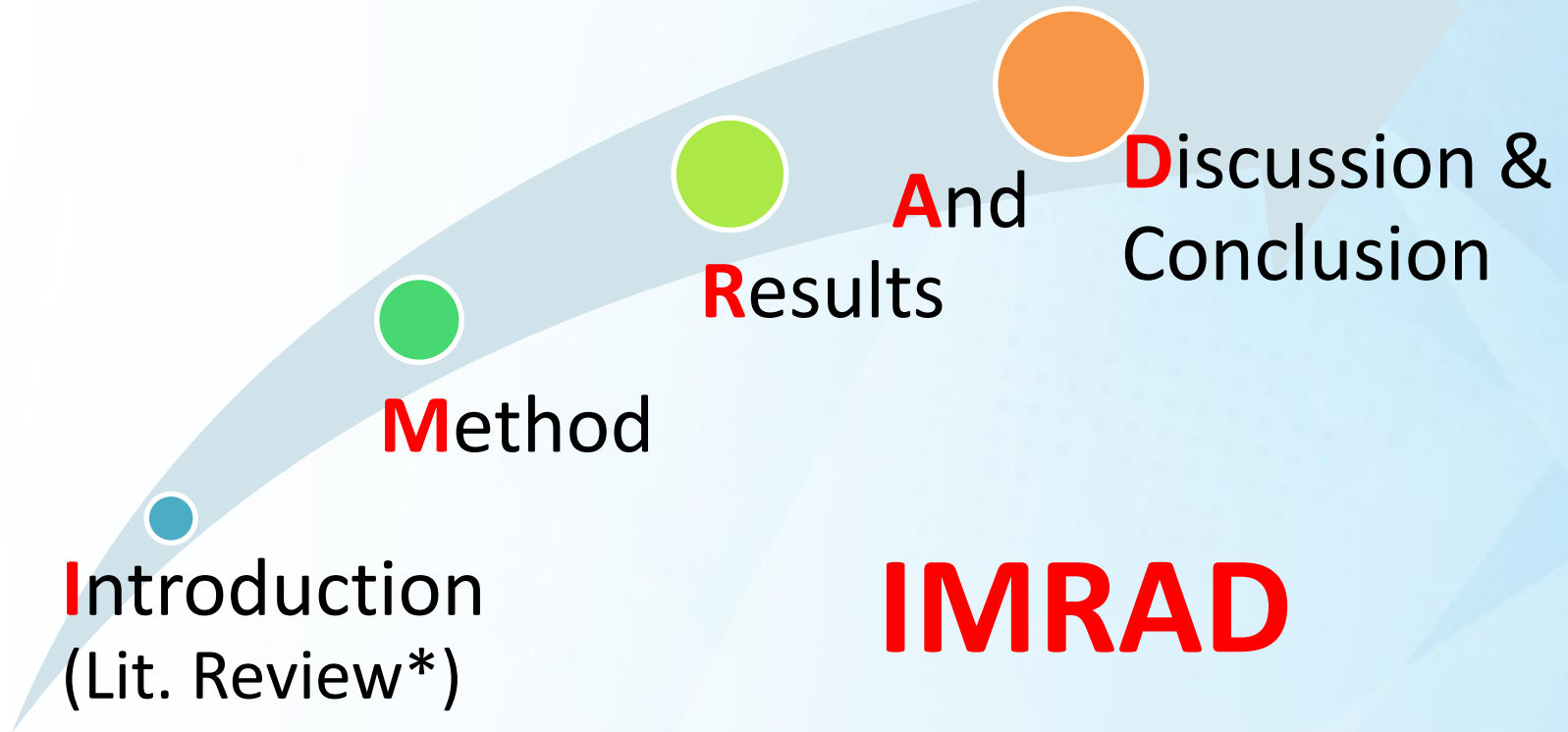
1. Structure of a Manuscript



Overall Structure of a Manuscript

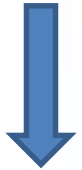
- Title
 - Abstract and Keywords
 - Body: Introduction, Literature Review*, Methods, Results, Discussion & Conclusion
 - Tables and Figures
 - References
- *Every research paper is different and has different purposes. Some of the sections may not be needed; some different sections may be added. You must personalize to fit your needs.

Body (Main text): IMRAD Structure

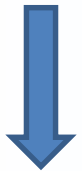


The most basic structure of a scientific manuscript

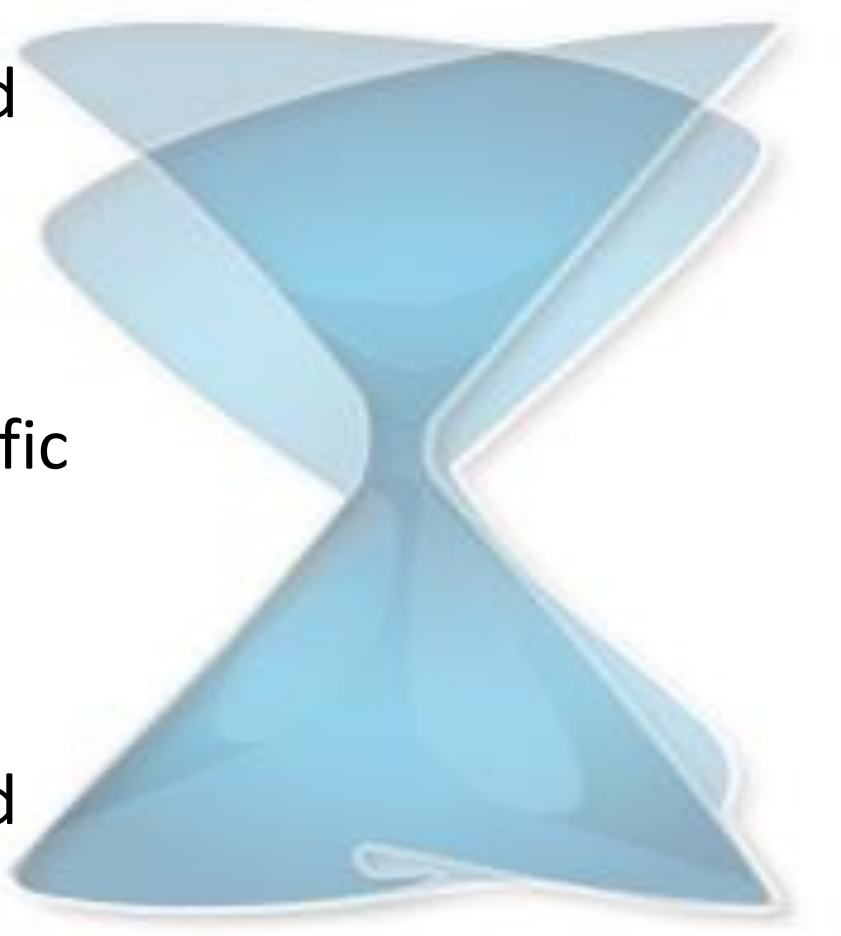
Broad



Specific



Broad



Introduction
(Lit. Review*)

Method

Results

And

Discussion &
Conclusion

Introduction

(Lit. Review*)

What are you studying and why?

- Establish background, nature of research problem, importance of topic, or novelty (originality) of the research.
- Indicate purpose, *hypothesis and outline the intention behind the paper.
- (Outline recent research relevant to your question, review the relationship between variables*)

Method

What did you do?

- Provide information on design, procedures, approach, data, and so on.

Results

What did you find?

- State main findings, or what was accomplished.

And

Discussion & Conclusion

- Interpret or extend results, draw inferences, point to applications, wider implications, limitations, and recommendations

What do your findings mean? What did you learn from the study?

Introduction Section

(What are you studying and why?)





Your introduction should be the first thing you write and the last thing you finish.

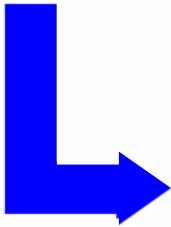
Aim and Content of the Introduction

- ☞ Identify the topic and provide sufficient background for it
- ☞ State the question (purpose) clearly
- ☞ Briefly describe the experimental approach*
- ☞ Highlight the importance or novelty of findings

Introduction

STEP1

Establish research area



STEP2

Identify a research problem



STEP3

Your paper becomes the solution

STEP1

Establish research area

Establish an area to research by:

- Highlighting the importance of the topic
- Making **general statements** about the topic
- Presenting a brief overview on current research on the subject

STEP2

Identify a research problem

Identify a research niche (problem) by:

- Opposing an existing assumption
- Revealing a gap in existing research
- Formulating a research **problem**

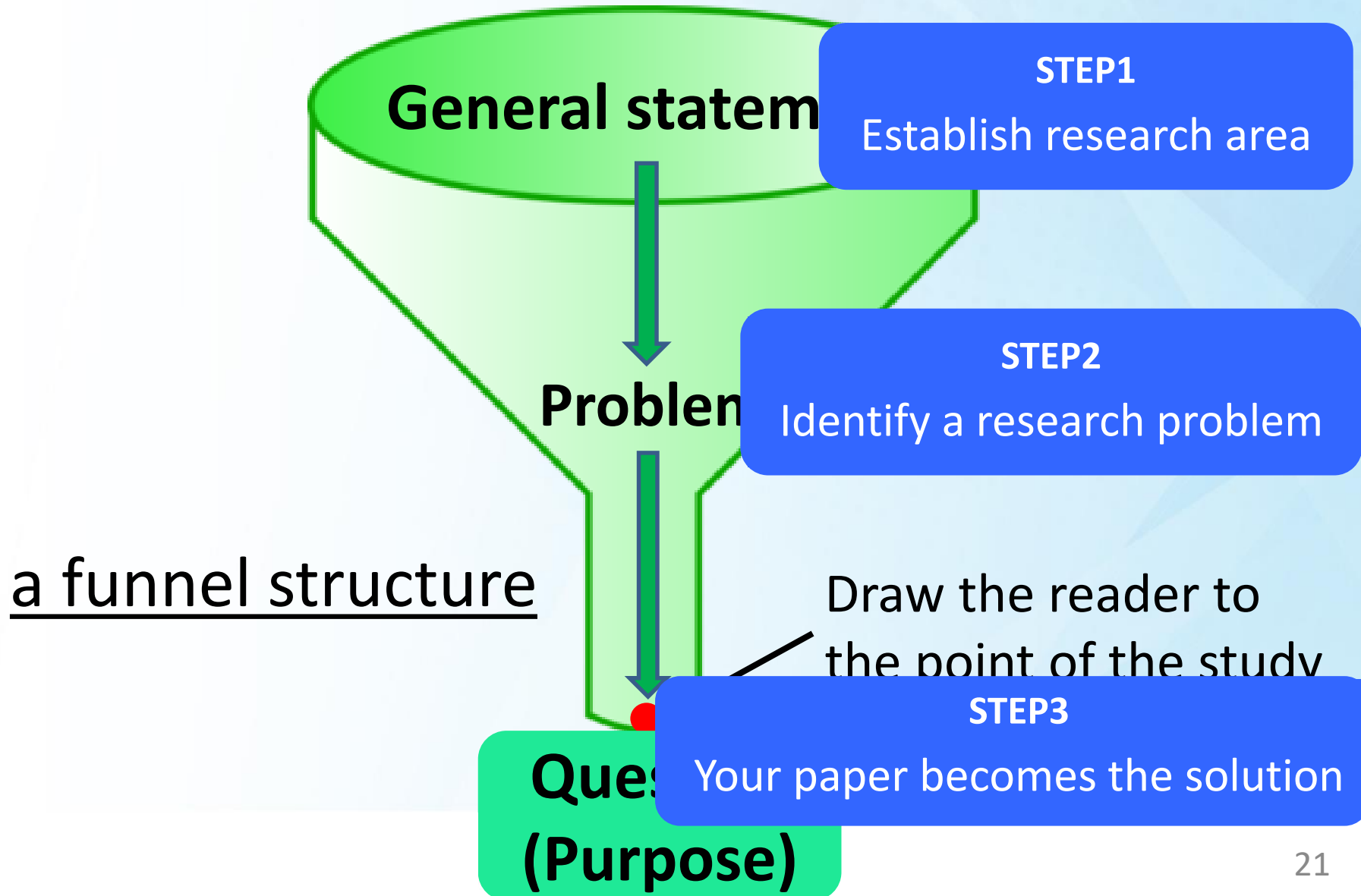
STEP3

Your paper becomes the solution

Place your research within the research niche by:

- Stating the **purpose** of your study
- Outlining the **key statements** of your study
- Describing basic methodology used*
- Highlighting important results
- Giving a brief overview of the structure of the paper

Organization of the Introduction



Step 1: Establish the research area (Funnel: wide)

General statements are key here.

The cumulative effects of environment pollution on climate change and ecological deterioration **are growing** prominent.

The delta function **has played** an enormous role in the development and advancement of quantum mechanics **since** its introduction by Dirac (2003).

Step 2: Identify research problem (Funnel: narrower)

Specific statements about what is unknown.

Many Chinese researchers **have studied** the EKC hypothesis with time series data (Zhang, 1999; Zhao, 2005; Song et al., 2007; Chen et al., 2009; Peng, 2006; Ling et al., 2001). Their findings **are inconclusive and sometimes contradictory**.

However, the evaluation of the coefficient **is not obvious** and has been the **subject of some disagreement** (Chen et al., 2009; Peng, 2006).

Step 3: Your paper becomes the solution

(Funnel: narrowest)

The most key statement is here.

Our **purpose in this paper** is to present a unified picture of how by letting the range of the square well approach zero in one, two, and three dimensions, one **may deduce** the bound-state structure in the delta function limit.

In order to explore the interactions and feedback between environment quality and economic growth and measure the time lag between them, **this paper builds** several models on the basis of time series data analyses and **carries out** a comprehensive study of the relationship between industrial pollution and economic factors.

Verb tenses in Introduction

Present tense: A fact or a practice that is generally accepted in the field.

Past tense: Results of individual experimental papers. Finished events in the past with a specific time.

Present perfect tense: (have + PP) Summary of generalization about research in the field or general trends in society. No specific time or date.

Present continuous/passive tense: An ongoing situation that is currently developing (... is being developed, etc.)

Methods Section

(What did you do?)



Aim of the Methods Section

- ☞ State the procedures (experiments) carried out to answer the question
- ☞ Must contain sufficient detail for a trained scientist to evaluate, repeat experiments, and give reproducible results

Methods section

- Reader needs to understand research (experimental) procedures
- Briefly mention common procedures
- Include enough detail so readers can understand how research was conducted
- Also include a description of statistical methods employed in the study



Methods section

- Provide a detailed version of procedures (supplemental data as needed)
- Who approved the study (as needed)
- Statement of the funding source and Institutional Review Board (IRB) guidelines followed (as needed)



Content of the Methods Section

1. Study design
2. Participants
3. Procedure (data collection)
 - a. **What** you did and in **which order** you did it
 - b. **How** you did it
 - c. **Why** you did it
4. Study approval, ethical consideration (IRB)
5. *Measures (validated Korean version, translation procedure...)
6. Analysis

Methods Section: Example Statements

We **conducted** a retrospective, multicentre surveillance study of all provincial hospitals in Northeast Thailand.

From the hospitals that agreed to participate, data **were collected** from microbiology and hospital databases between January 2004 and December 2010.

Methods Section: Example Statements

To examine the association between MDR and mortality, we **performed** a multivariable logistic regression analysis adjusting for a priori selected baseline confounders.

All analyses **were performed** using STATA version 14.0 (StataCorp LP, College station, Texas, USA).

Tense in the Methods Section

Because they are statements about what you did to answer the question, the Methods section is written in the **past tense**.

***Present tense** is used only when describing how data are presented in the paper, because this information is still true. Ex) “Data are summarized as mean.....”

Results Section

(What did you find?)



Aim of the Results Section

- ☞ State the results of the experiments
- ☞ Describe possible explanations for the results
- ☞ Direct readers to figures and tables that present supporting data

Results Section: Don't...

- ✗ Report every result
- ✗ Include only positive findings that support your hypothesis
- ✗ Include all your data in the text (text should lead the reader to the figure or table, not repeat what can already be seen)

Results Section: Rather Do...

- ✓ Include only results pertinent to the question posed in the Introduction
- ✓ Report both positive and negative results should be reported (i.e., whether or not they support your hypothesis)
- ✓ Summarize data into tables and figures
- ✓ Keep a consistent order: chronological or most important to least important

Results Section: Example Statements

In the adjusted multivariable model, several of these associations **persisted** (Tables 2 and 3). Teaching hospitals **had** higher CIT scores (4.6 points higher, $p = 0.002$) than nonteaching hospitals.

We found no relationship between the normalized IT expenditure variables and CITAT scores, **indicating that** positive associations in the original analysis (in particular, higher automation scores associated with higher IT expenditures) **diminished** after accounting for bed size.

Results Section: Example Statements

We **did not observe** a trend in the proportion of *S. aureus* bacteraemia being caused by MRSA (Figure 2).

From 2004 to 2010, the proportions of community-acquired *E. coli* bacteraemia being caused by *E. coli* unsusceptible to extended-spectrum cephalosporins **rose from 5% (9/169) to 23% (186/815)** ($p=0.04$) (Figure 3).

Tense in the Results Section

Results are reported in the **past tense**, because they are discrete events that occurred in the past.

***Present tense** is used only when referring readers to the data (to figures and tables)

All parameters used to estimate the number of excess deaths in Thailand **are shown** in Supplementary file 2.

Discussion & Conclusion Section

(What do your findings mean?)

(What have you learned from the study?)



Aim of the Discussion & Conclusion Section

- ☞ State a clear answer to the question
- ☞ Support, explain, and defend results
- ☞ Establish limitations, future suggestions, implications, and importance of findings

Discussion & Conclusion Section

Explanation of results: comment on whether the results were expected and present explanations for the results; go into greater depth when explaining unexpected findings

References to previous research: compare your results with the findings from other studies, or use the studies to support a claim

Discussion & Conclusion Section

Deduction: a claim for how the results can be applied more generally

Assumption: a more general claim or possible conclusion arising from the results (which may be proved or disproved)

Conclusion: state main conclusions in clear

Suggestion: indicate opportunities for future research

Common Errors in the Discussion Section

- ✗ Do not write another Introduction
- ✗ Do not introduce new results in the discussion
- ✗ Do not restate results verbatim
- ✗ Do not include irrelevant topics

*Use of the first person is acceptable, but too much use of the first person may actually distract the reader from the main points.

Showing certainty about results

Basic claim

Ex) An increase in smoking among teenagers **caused** long-term health problems.

Stronger claim

Ex) **Based on these results**, it has become clear that an increase in teen smoking **must have caused** long-term health problems.

Limited claim

Ex) **We have reason to believe that** the increase in teen smoking **may have been** one source of long-term health problems in adults.

Statements Within the Discussion

☞ State a clear answer to the question

We **tested if migratory bats**, in particular *Pipistrellus nathusii*—the most abundant species at our study site—**respond** to artificial green light at night during migration.

Our study is the first to show that **migratory bats respond** with positive phototaxis towards green light at night, which demonstrates that migratory bats are particularly susceptible to artificial light at night.

Statements Within the Discussion

Support, explain, and defend results

Our estimated mortality for those with MDR HAI is higher than those previously published by Pumart et al. (2012), **probably because** we used 30-day mortality rather than in-hospital mortality.

The high proportions of *E. coli* bacteremia being caused by MRSA **are consistent with** previous reports from other tropical countries.

Statements Within the Discussion

👉 Establish limitations, implications, and importance of findings

Our study **highlights the need** for public health officials and international health organizations to improve systems to track and reduce the burden of AMR in LMICs.

Our study **confirms the importance** of this species as a leading cause of hospital-acquired MDR infection in a developing tropical country.

The rising proportions of community-acquired *E. coli* and hospital-acquired *Acinetobacter* bacteraemia **suggest** that the burden of AMR in Thailand is deteriorating over time.

A limitation of this study is that more complete clinical data **were not** available.

Tense in the Discussion Section

- Use the **past tense** (present perfect) to summarize findings
- Use the **present tense** to interpret the results, discuss the significance of the findings or present your conclusions
- Use the **future tense** to make recommendations for further research or to indicate a future course of action based on the results of your paper

More example phrases

In this article, we have argued that democratization spurs states to enter IOs since doing so helps leaders in democratizing states credibly commit to maintain domestic reforms and reduces the ability of future leaders to roll back reforms.

By using slightly different methods than Hibbs's, I have estimated that the impact of political party on unemployment rate in the postwar United States is about 1 percent over eight years; this is somewhat less than half of Hibbs's estimate. **Furthermore,** there is considerable variance in the impact on unemployment of administrations of the same party label.

More example phrases

The Thomas result was obtained variationally as an upper bound, and it referred only to the ground state, **whereas our present treatment** covers all the bound states.

Further studies, using a variety of methods, **should examine** what organizational factors, such as policies, norms, and cultures, could explain these relationships.

Because of the various study limitations, **further study is warranted** to determine the generalizability of the present findings to other areas and to international settings.

2. General Tips



“Writing a journal article combines all the elements that deter motivation”. -Paul Silvia, 2009-

- ✓ The probability of success is low.
- ✓ The likelihood of criticism and rejection is high.
- ✓ The outcome, even if successful, isn't always rewarding.
- ✓ Doing research is fun; writing about the research is not.



Paul Silvia: How to Write a Lot (2007, 2018)

- **BARRIER #1: We don't have the time to write.**

→ ***We don't make time for writing!***



SOLUTION?

Make time!

Schedule your writing and stick to the schedule.

“HOW DID IT WORK FOR ME: Turning writing into a habit is difficult and I particularly struggle to balance my part-time jobs, reading, thinking and writing, with attempts to do social human stuff. Nonetheless, setting (and reaching) goals, however small, is ever so pleasing. I find it helpful to always go to the same place, if not time too, in order to develop a sense of routine. Small, manageable chunks and rewards do the trick as well, but I still have a long way to go.”

글쓰기는 금욕주의적인 생활을 요구한다.

하루에 4페이지씩 글을 쓰려면 나는 하루에 꼬박 15시간을 책상 앞에 앉아 있어야 했다.

창작의 마술이나 나만의 비밀, 창작 비법 같은 건 존재하지 않는다.....

의자에 엉덩이를 붙이고 앉아 있는 방법 밖에 없다. -Guillaume Musso-

마음의 고통은 해야 할 일을 하지 않고 미루고 있을 때 옵니다. 오늘 몇 시부터는 그 일을 꼭 하겠다고 구체적인 시간을 정해 놓고, 그 시간이 됐을 때는 두말 없이, 딴 생각 하지 말고, 그냥 해 버리세요. -헤민 스님-

- Write as quickly as possible, getting your thoughts onto paper without regard to style. Then, go back to revise and polish your writing!
- A “crappy” first draft is worth more than a nonexistent one!



4 Tips for researchers on tackling the task of writing a manuscript

1. Prime (prepare) yourself for writing.
2. Set a fixed time.
3. Set a target of 500 words.
4. Write without stopping to edit.

1. Prime (prepare) yourself for writing.

- ☞ Before sitting down to write, talk to somebody about the work you are going to write up as a research paper (at least two people: one from your peer group and another from a totally different background).
- ☞ Explain to them what you did, what you found, and what that means.
- ☞ This talk will prime you to write: words will come easier to you when you sit down to write.

2. Set a fixed time.

- 👉 Set aside a couple of hours a day for writing, specifying the time at which you would begin.
- 👉 Minimize distractions during that time: do not take calls and stay unconnected to the Internet!
- 👉 Even if you are unable to write during that time, do not quit: use the block of time to format references, refine tables and figures, and so on.
- 👉 Make deadlines for yourself (and rewards for meeting deadlines)

3. Set a target of 500 words.

- ☞ The time that you will set aside for writing should lead to at least 500 words in each session.
- ☞ If you fail to reach the target, be prepared to extend the time until the target is reached.

(To make the task a bit interesting,
visit the website <http://750words.com>)

4. Write without stopping to edit.

- 👉 Think of a finished paper as a pottery project.
- 👉 During the two-hour sessions, your task is to get enough clay: shaping and refining the clay comes later.
- 👉 If you are stuck because a particular statistic or citation is not handy, simply insert a placeholder and continue writing.
- 👉 Later, search the file for the placeholder and replace the marks with appropriate text.

Some Practical Tips...

- ☞ **Read (read, and read!) related papers... a lot!**
- ☞ Use dictionaries and thesauruses
 - The Merriam-Webster Pocket Dictionary of Synonyms
 - Cambridge International Dictionary of Phrasal Verbs
 - Collocation: <http://www.freecollocation.com/>
 - Webster's Third New International Dictionary of the English Language
- ☞ Follow Authors' Guidelines
- ☞ Use Readability statistics
- ☞ Use Grammar checkers
- ☞ Writing Resources: Purdue OWL (Online Writing Lab)

3. How to Improve Clarity



Part 1

Why is clarity important?

Part 2

Tips to improve clarity

1. Word-level
2. Sentence-level
3. Paragraph-level

Part 1

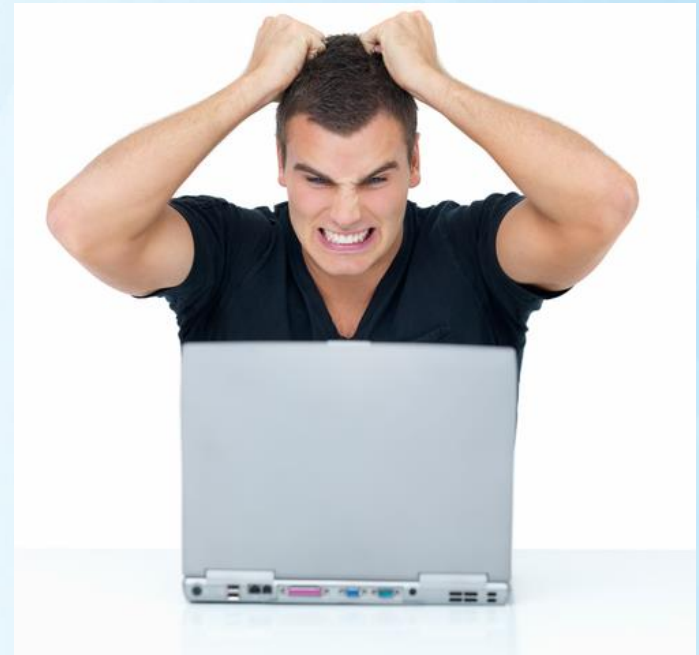
Why is clarity important?





The cost of ambiguity

- A frustrated peer reviewer
- Misinterpretation of results
- Delayed publication or rejection
- A less impactful journal



Part 2

Tips to improve clarity

1. Word-level
2. Sentence-level
3. Paragraph-level



1. Improving clarity at word-level:

Correct word choice



Basic sentence structure



Strong subject-verb Agreement!

Action of the sentence

The action should be
expressed in the verb



Action of the sentence

The action is incorrectly expressed
in the subject or object



Action of the sentence

The action is incorrectly expressed
in the subject or object



Nominalization

to investigate → investigation
to synthesize → synthesis
to block → blockage
to resist → resistance

Example

- **Without nominalization**

Many children experience worries when they go to school for the first time.

✂ Many children worry about their first day at school.

Example

- **With nominalization**

Many children experience worries when they go to school for the first time.



The experience of children being worried while at school for the first time is common.

Nominalization can reverse the S-V order



Many children experience worries when they go to school for the first time.



The experience of children being worried while at school for the first time is common.



Tip 1: put the action into the verb

Tip 1: put the action into the verb

Example

We **performed** an analysis of each patient.

Tip 1: put the action into the verb

subject

verb

object

phrase

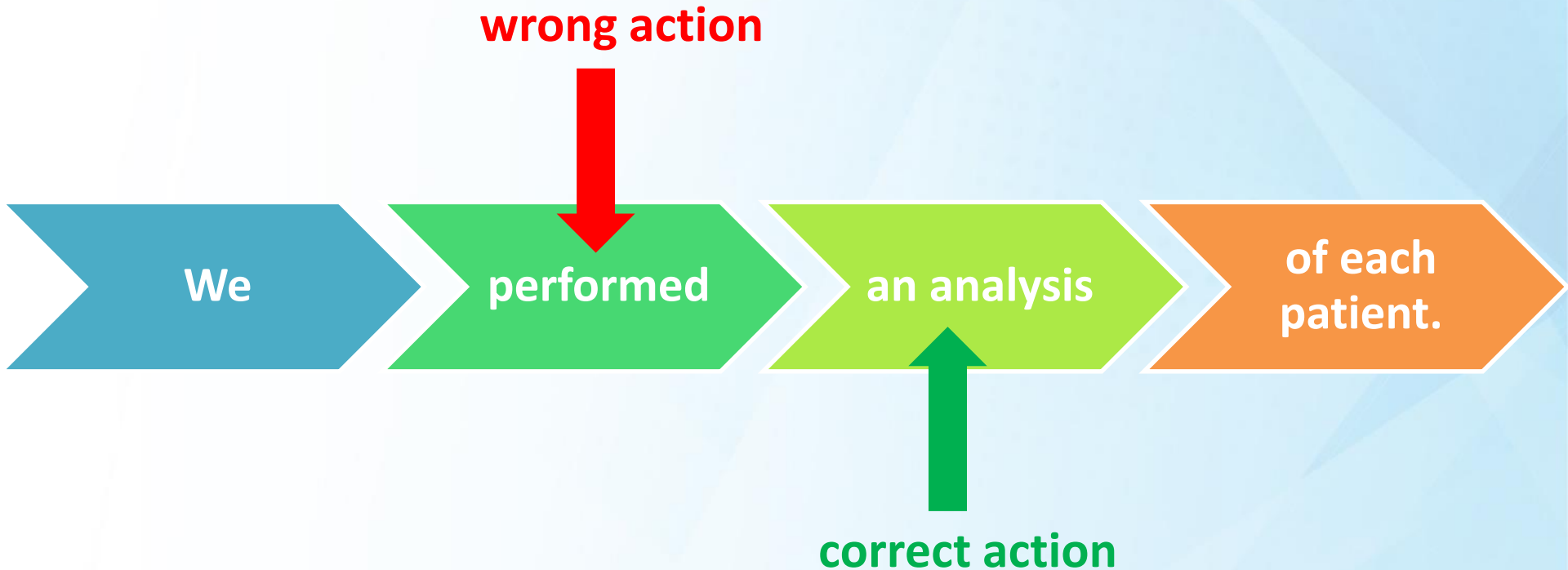
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performed

an analysis

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Tip 1: put the action into the verb

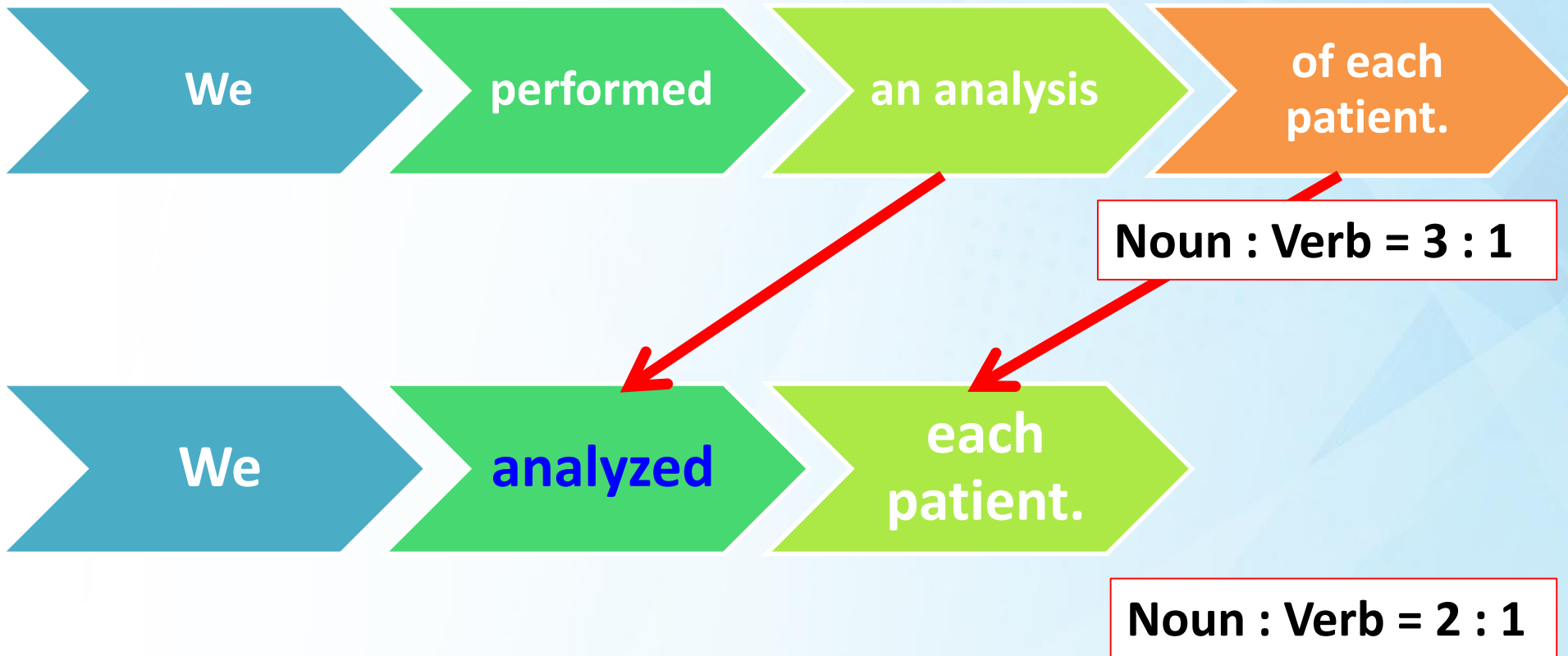


Tip 1: put the action into the verb



**Reverse the
nominalization
an analysis →
to analyze**

Tip 1: put the action into the verb



Tip 1: put the action into the verb

- Avoid vague verbs that unnecessarily increase wordiness of sentences.

Vague verbs

“occurred”, “was noted”, “was observed”,
“caused”, “produced”, “showed”,
“elicited”, “induced”, “revealed”, etc.

Research Article

All sentences have been taken from an article published in BMC Medicine.

Sack et al. *BMC Medicine* (2017) 15:40
DOI 10.1186/s12916-017-0801-0

BMC Medicine

RESEARCH ARTICLE

Open Access



Intranasal oxytocin reduces provoked symptoms in female patients with posttraumatic stress disorder despite exerting sympathomimetic and positive chronotropic effects in a randomized controlled trial

PTSD

M. Sack¹, D. Spieler¹, L. Wizelman¹, G. Eppe¹, J. Stich², M. Zaba² and U. Schmidt^{2*}

Q1: Which sentence has an **action verb**?

1. Intranasal oxytocin caused a reduction in stress-induced cortisol levels.
2. Intranasal treatment was found to intensify re-experiencing symptoms.
3. A significant increase in salivary oxytocin levels of healthy subjects was observed.
4. Intranasal oxytocin treatment elicited a significant elevation in the baseline HR of PTSD patients.
5. TSST exposure substantially increased serum cortisol levels in healthy control subjects.

Q1: Which sentence has an **action verb**?

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3. A significant increase in salivary oxytocin levels of healthy subjects was observed.

4. Intranasal oxytocin treatment elicited a significant elevation in the baseline HR of PTSD patients.

5. TSST exposure substantially **increased** serum cortisol levels in healthy control subjects.

Q1: Which sentence has an **action verb**?


1. Intranasal oxytocin decreased in stress-induced cortisol levels.
2. Intranasal treatment intensified re-experiencing symptoms.
3. Salivary oxytocin levels significantly increased in healthy subjects.
4. Intranasal oxytocin treatment significantly elevated the baseline HR of PTSD patients.
5. TSST exposure substantially **increased** serum cortisol levels in healthy control subjects.

2. Improving clarity at sentence-level:

Appropriate voice



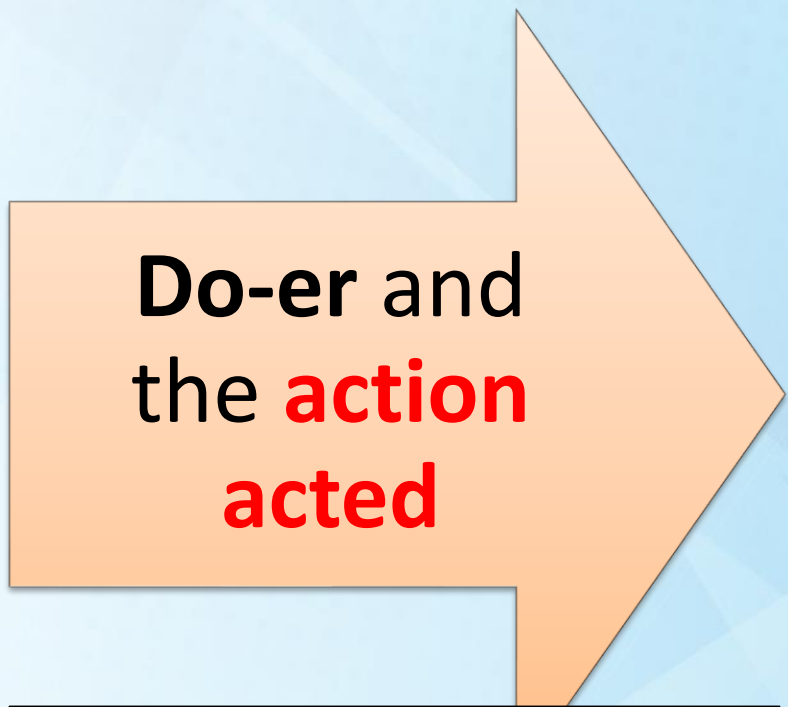
Main differences: **Passive** vs. **Active**



**Receiver and
the **action**
received**

Emphasis

- The **object**
- What ***received*** the action
- Weaker** subject-verb



**Do-er and
the **action**
acted**

Emphasis

- The **subject**
- What the subject ***did***
- Stronger** subject-verb

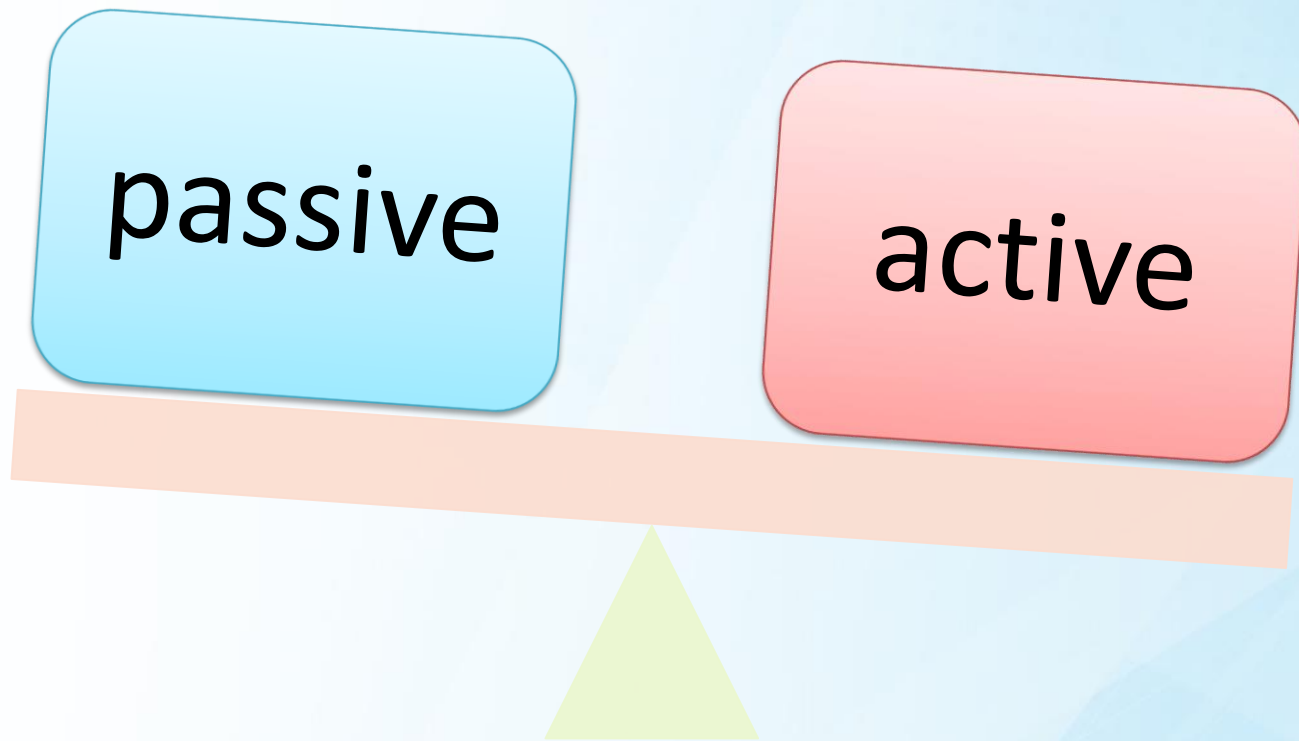
Misconceptions in scientific writing

- The passive voice is preferred over the active voice because it is the more formal style of writing.



Clarity and voice

The clarity scale





Tip 2: use the active/passive voice effectively

Tip 2: use the active/passive voice effectively

Results section

Intranasal oxytocin reduces provoked PTSD symptoms

First, we analyzed the efficacy of oxytocin treatment on PTSD symptoms triggered by trauma-script exposure. Provoked PTSD symptoms were assessed with the RSDI questionnaire that allows quantification of avoidance, re-experiencing and dissociation symptoms provoked by exposure to an audiotaped individual trauma script [41]. We found that the total RSDI score was significantly reduced in oxytocin-treated patients (Table 2, $p = 0.012$). Thus, intranasal oxytocin treatment significantly attenuated PTSD symptoms triggered by trauma-script

Independent variable = “Intranasal oxytocin”

Dependent variable = “provoked PTSD symptoms”

Tip 2: use the active/passive voice effectively

Intranasal oxytocin reduces provoked PTSD symptoms

- ¹First, we analyzed the efficacy of oxytocin treatment on PTSD symptoms triggered by trauma-script exposure.
- ²Provoked PTSD symptoms were assessed with the RSDI questionnaire that allows quantification of avoidance, re-experiencing and dissociation symptoms provoked by exposure to an audiotaped individual trauma script [41].
- ³We found that the total RSDI score was significantly reduced in oxytocin-treated patients (Table 2, $p = 0.012$).
- ⁴Thus, intranasal oxytocin treatment significantly attenuated PTSD symptoms triggered by trauma-script exposure.

Sentence 1 → Sentence 2

¹First, we **analyzed** the efficacy of oxytocin treatment on PTSD symptoms.

Sentence 1 → Sentence 2

¹ First, we analyzed the efficacy of oxytocin treatment on PTSD symptoms.

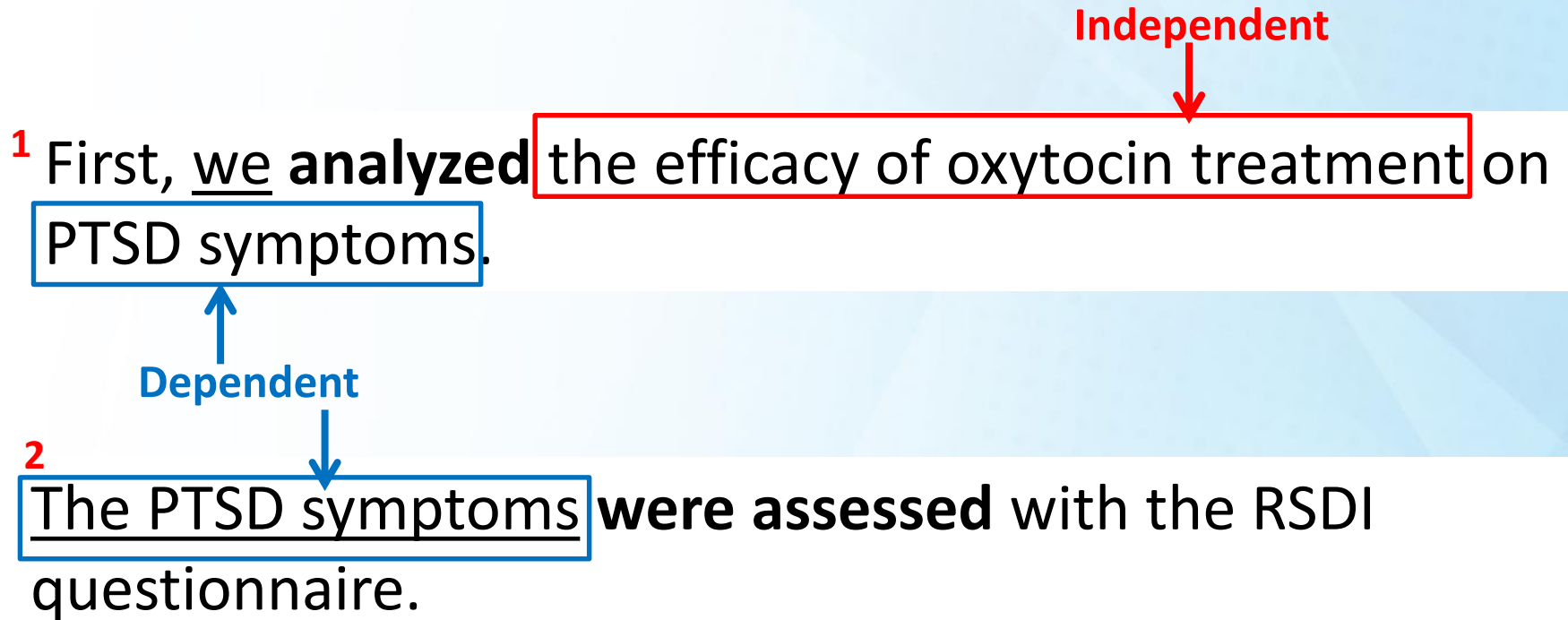
↑
Dependent variable

Independent variable



The active voice is used to move the story forward.

Sentence 1 → Sentence 2



The **passive voice** is more **static** and less powerful;
often used to describe **less important** information.

Sentence 3 → Sentence 4


³We found that the RSDI score **was significantly reduced** in oxytocin-treated patients.

effect

In scientific writing, the **passive voice** can be used to **describe an effect**.

Sentence 3 → Sentence 4

³ We found that the RSDI score **was significantly reduced** in oxytocin-treated patients.



⁴ Thus, oxytocin treatment **significantly attenuated** PTSD symptoms.



In the **active voice**, the **relationship between cause and effect** becomes **clearer**.

3. Improving clarity at paragraph-level:

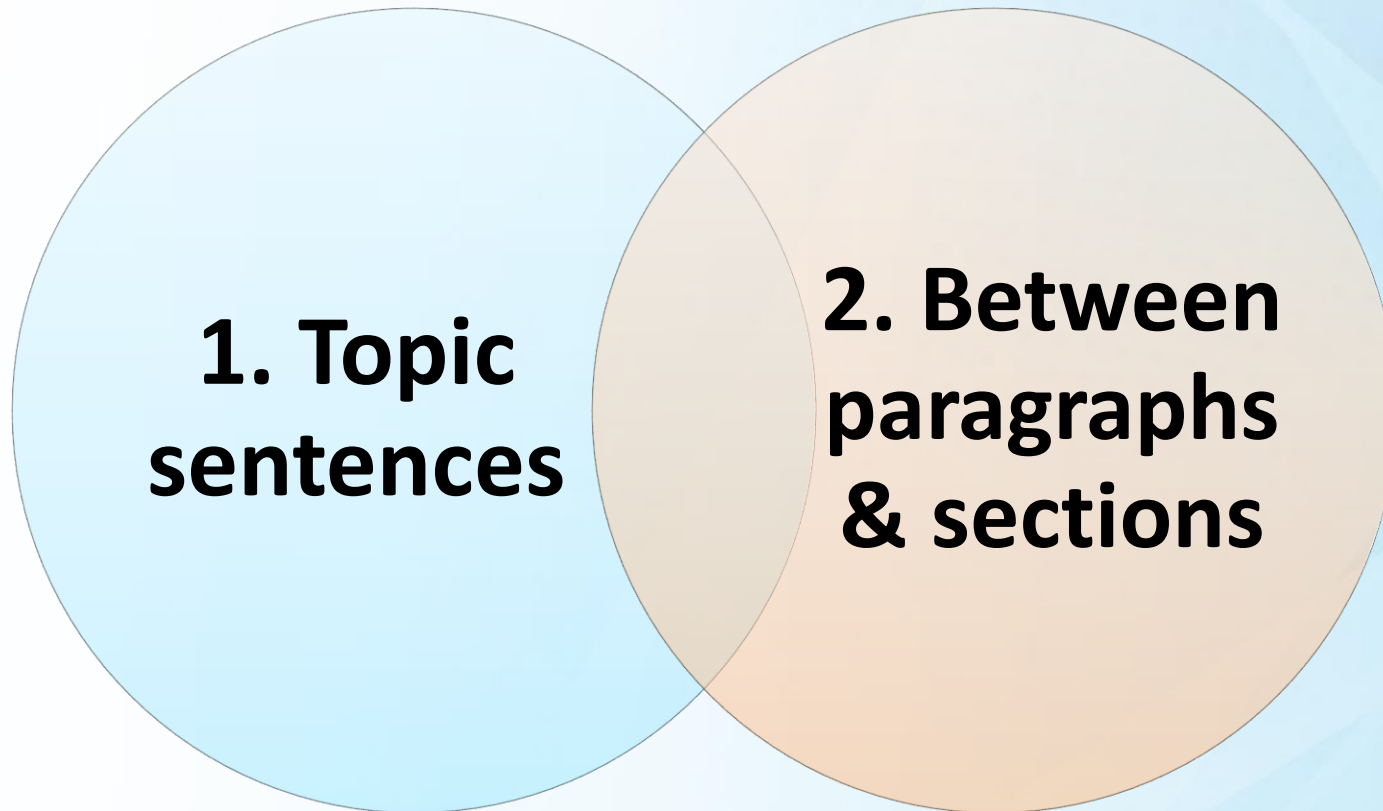
Repeat key terms





Tip 3: repeat key terms

Tip 3: repeat key terms



1. Repeat key terms in topic sentences

What is a **topic sentence**?

a sentence that expresses the **main idea** of the paragraph in which it occurs.

- One of the most obvious topic sentences in scientific writing is the statement that describes the key message of the study.
- It contains several key terms.

1. Repeat key terms in topic sentences

Example topic sentence

This motivated us to perform the first study analyzing the **efficacy of oxytocin** on **provoked posttraumatic stress disorder (PTSD) symptoms** in **female PTSD patients**.

In 1993, Pitman and colleagues were the first to test the **efficacy of oxytocin** versus placebo in **PTSD**.

Currently, the **efficacy of oxytocin** on secondary prevention of **PTSD** is evaluated in a double-blind randomized placebo controlled trial.

There are, to the best of our knowledge, only two studies thus far that have analyzed the **efficacy of oxytocin** on **PTSD symptom** intensity in **PTSD patients**, among them one symptom provocation study that was performed in a cohort of male veterans [10].

First, we analyzed the **efficacy of oxytocin** treatment on **PTSD symptoms** triggered by trauma-script exposure.

This is the first study assessing the effects of oxytocin on the intensity of provoked **PTSD symptoms** in **female PTSD patients** and, to the best of our knowledge, the second symptom provocation study analyzing the **efficacy of oxytocin** in PTSD patients ever.

2. Repeat key terms between paragraphs/ sections

Background

This motivated us to perform **the first study** analyzing the efficacy of oxytocin on PTSD symptoms in female PTSD patients.

Discussion

Taken together, we show here for **the first time** that intranasal oxytocin reduces the expression of PTSD symptoms, in particular avoidance.

Conclusion

This study provides **the first evidence** that oxytocin treatment reduces the intensity of PTSD symptoms in female PTSD patients...

2. Repeat key terms between paragraphs/ sections

Background

This motivated us to perform the first study analyzing **the efficacy of oxytocin** on PTSD symptoms in female PTSD patients.

Discussion

Taken together, we show here for the first time that **intranasal oxytocin** reduces the expression of PTSD symptoms, in particular avoidance.

Conclusion

This study provides the first evidence that **oxytocin treatment** reduces the intensity of PTSD symptoms in female PTSD patients...

2. Repeat key terms between paragraphs/ sections

Background

This motivated us to perform the first study analyzing the efficacy of oxytocin on **PTSD symptoms** in female PTSD patients.

Discussion

Taken together, we show here for the first time that intranasal oxytocin **reduces the expression of PTSD symptoms**, in particular avoidance.

Conclusion

This study provides the first evidence that oxytocin treatment **reduces the intensity of PTSD symptoms** in female PTSD patients...

2. Repeat key terms between paragraphs/ sections

Background

This motivated us to perform the first study analyzing the efficacy of oxytocin on PTSD symptoms in **female PTSD patients**.

Discussion

Taken together, we show here for the first time that intranasal oxytocin reduces the expression of PTSD symptoms, in particular avoidance.

Conclusion

This study provides the first evidence that oxytocin treatment reduces the intensity of PTSD symptoms in **female PTSD patients**...

SUMMARY

- Very specific techniques exist to improve clarity.
- Clarity can be compromised at various levels of the text.
 - **Word-level**: word choice
 - **Sentence-level**: appropriate voice
 - **Paragraph-level**: repeat key terms
- Ensuring clarity will help take your manuscript to the next level.



Thank you for your attention! 😊

Questions?



Contact Details

Mikyoung Lee, PhD

Academic Trainer & Consultant at Editage Insights

Cactus Communications Korea Co., Ltd.

4F, 22, World Cup buk-ro, Mapo-gu, Seoul, Republic of Korea 03992

Website: <http://www.editage.co.kr/>

E-mail: insights@editage.co.kr



Dr. Eddy™ personifies our efforts to support authors with good publication practices. He can be found at **Editage Insights**
<http://www.editage.com/insights/ask-dr-eddy>