

# Section 3

## *Professional writing skills*

# Use your figures to structure your manuscript

## Where to start?

- ❖ Your *findings* are why you want to publish your work
- ❖ Form the basis of your manuscript
- ❖ First step, is to logically organize your findings

Figure 1

Table 1

Figure 2

?

Figure 3

Logical presentation

Is anything missing?

Additional analyses?

# Use your figures to structure your manuscript

## Where to start?

- ❖ Your findings are why you want to publish your work
- ❖ Form the basis of your manuscript
- ❖ First step, is to logically organize your findings

Figure 1

Table 1

Figure 2

Figure 3

Figure 4

Logical presentation

New data

# Outlines

*2 factors to consider when writing a manuscript*

**Logically organizing  
your ideas**

**Communicating  
in English**

**Stress**

A diagram illustrating the relationship between two factors and stress. At the top, two rounded rectangular boxes are positioned side-by-side: a green one on the left containing the text 'Logically organizing your ideas' and a red one on the right containing 'Communicating in English'. A large black curly bracket spans across both boxes. From the center of the bottom edge of this bracket, a vertical line descends to a white rounded rectangular box with a red border, which contains the word 'Stress' in red text.

# Outlines

*2 factors to consider when writing a manuscript*

**Logically organizing  
your ideas**



**Write outline**

**Communicating  
in English**



**Write manuscript**



# Focus your outline

## **Concisely describe your research question**

- Why is it important?
- What is unknown?
- What could be a limitation or controversy?

## **State your aims to address this question**

- How do they address the question?

## **State your main conclusion**

- How does your study answer the question?
- How does it advance the field?

# Prepare an outline

- I. **Introduction**
  - A. General background
  - B. Related studies
  - C. Problems in the field
  - D. Aims
- II. **Methods**
  - A. Subjects/Samples/Materials
  - B. General methods
  - C. Specific methods
  - D. Statistical analyses
- III. **Results**
  - A. Key points about Figure 1
  - B. Key points about Table 1
  - C. Key points about Figure 2
  - D. Key points about Figure 3
  - E. Key points about Figure 4
- IV. **Discussion**
  - A. Major conclusion
  - B. Key findings that support conclusion
  - C. Relevance to published studies
  - D. Unexpected/negative findings
  - E. Limitations
  - F. Implications
  - G. Future directions

Use a *reporting checklist* when preparing your outline

# Prepare an outline

- I. Introduction**
  - A. General background
  - B. Related studies
  - C. Problems in the field
  - D. Aims
- II. Methods**
  - A. Subjects/Samples/Materials
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  - D. Unexpected/negative findings
  - E. Limitations
  - F. Implications
  - G. Future directions

## *Introduction*

**What background information  
you will introduce**



# Prepare an outline

- I. **Introduction**
  - A. General background
  - B. Related studies
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  - G. Future directions

## *Introduction*

What background information  
you will introduce

## *Methods*

What analyses you will describe

# Prepare an outline

- I. **Introduction**
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  - B. Related studies
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  - F. Implications
  - G. Future directions

## *Introduction*

**What background information  
you will introduce**

## *Methods*

**What analyses you will describe**

## *Results*

**What findings you will present**

# Prepare an outline

- I. Introduction**
  - A. General background
  - B. Related studies
  - C. Problems in the field
  - D. Aims
- II. Methods**
  - A. Subjects/Samples/Materials
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- IV. Discussion**
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  - B. Key findings that support conclusion
  - C. Relevance to published studies
  - D. Unexpected/negative findings
  - E. Limitations
  - F. Implications
  - G. Future directions

## *Introduction*

What background information you will introduce

## *Methods*

What analyses you will describe

## *Results*

What findings you will present

## *Discussion*

What interpretations, limitations, and implications you will discuss

## Prepare an outline

- I. **Introduction**
  - A. General background
  - B. Related studies
  - C. Problems in the field
  - D. Aims
- II. **Methods**
  - A. Subjects/Samples/Materials
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  - C. Relevance to published studies
  - D. Limitations
  - E. Unexpected results
  - F. Implications
  - G. Future directions

❖ **Knowing what you need to discuss, write down the key ideas**

❖ **Use short bullet points to list ideas**

❖ **Don't let "writing correct English sentences" get in the way of outlining your ideas**

**List important information from your reading in the appropriate section with citations**

# Using Google Docs

The screenshot shows a Google Docs document titled "My Nature manuscript" with a menu bar (File, Edit, View, Insert, Format, Tools, Table, Add-ons, Help) and a toolbar. The document content is organized into sections: I. Introduction (A. General background, B. Related studies, C. Problems in the field, D. Aims), II. Methods (A. Subjects/Samples/Materials, B. General methods, C. Specific methods, D. Statistical analyses), III. Results (A. Key points about Figure 1, B. Key points about Table 1, C. Key points about Figure 2, D. Key points about Figure 3, E. Key points about Table 2, F. Key points about Figure 4), and IV. Discussion (A. Major conclusion, B. Key findings that support conclusion, C. Relevance to published studies, D. Unexpected results, E. Limitations). Annotations include a purple box for the title, a red box for the toolbar, a green box for a comment on "Related studies", and a blue box for a suggestion on "Key points about Table 2". A sidebar on the right shows a comment history with three entries from Jeffrey Robens.

**Manuscript title**

**Multiple simultaneous users**

**Word-like tools**

**Comments and replies**

**Make color-coded suggestions**

**Comments:** Jeffrey Robens 11:55 AM Today: You should add studies from Jackson et al. and Harris et al.  
Jeffrey Robens 11:59 AM Today: Good point, will add them.  
Jeffrey Robens 11:57 AM Today: Remember to add ethical approval.

**Suggestions:** Jeffrey Robens 11:57 AM Today: Add: "Key points about Table 2"  
Jeffrey Robens 12:00 PM Today: Table 2 is not yet prepared, are we going to add this to the manuscript?

# Getting feedback

- ❖ After completing outline, discuss with colleagues
- ❖ Make the necessary changes *before* you begin writing
- ❖ Write your manuscript *section-by-section*
  - Less stressful
  - Get feedback after each section
  - Easier for your colleagues to review
- ❖ Set *deadlines* for each section

# The 'write' order

## Manuscript sections

- Title
- Abstract
- Introduction
- Methods
- Results
- Discussion

## Writing order

Outline & Draft Abstract

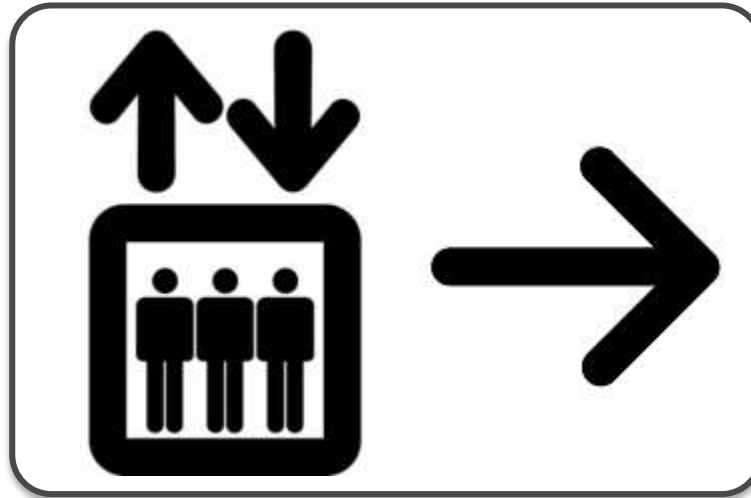
- **Methods**
- **Results**
- **Discussion**
- **Introduction**
- **Abstract**
- **Title**

# Section 4

*Effective writing*



# Reader expectations



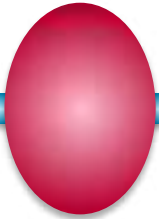
**Information is easier to understand when it is placed where readers expect to find it**

*Good writers are aware of these expectations*

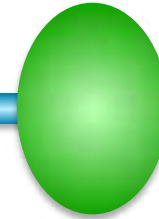
# Subject-verb placement

Readers expect verbs to closely follow the subject

Subject



Verb



**The viral infection that the patient caught on her recent trip to the outbreak-prone areas in Africa spread quickly.**

The viral **infection** that the patient caught on her recent trip to the outbreak-prone areas in Africa **spread** quickly.

The viral **infection** that the **patient caught** on her recent trip to the outbreak-prone areas in Africa **spread** quickly.



The **patient caught** a viral infection on her recent trip to the outbreak-prone areas in Africa, and this **infection spread** quickly.

## *Use short sentences*

Limit your sentences to 15–20 words  
One idea per sentence

## *Use active voice*

More simple, direct, and easier to read

*“Nature journals prefer authors to write in the **active voice**”*

([http://www.nature.com/authors/author\\_resources/how\\_write.html](http://www.nature.com/authors/author_resources/how_write.html))

# Short sentences

## *Reading once...*

4% of readers can understand a 27-word sentence  
75% of readers can understand a 17-word sentence

Pinner and Pinner (1998) *Communication Skills*

## *Goals to aim for:*

- ✓ One idea per sentence
- ✓ 15–20 words

# Short sentences

Economists considered Tanaka Industries, a large Japanese trading corporation founded in 1916 outside of Nagoya by Ichiro Tanaka, to be a model in the development of modern employee conditions worldwide.

*30 words*



# Short sentences

Economists considered Tanaka Industries, a large Japanese trading corporation founded in 1916 outside of Nagoya by Ichiro Tanaka, to be a model in the development of modern employee conditions worldwide.

*30 words*

# Short sentences

*16 words*

Economists considered Tanaka Industries to be a model in the development of modern employee conditions worldwide. This large Japanese trading corporation was founded in 1916 outside of Nagoya by Ichiro Tanaka.

*15 words*

*One idea per sentence*

# Active voice

Sentences written in the active voice are:

*simple*

*direct*

*clear*

*easy to read*

## Passive

The theories predicting the economic growth of developing Asian countries in the 20<sup>th</sup> century were evaluated.

## Active

We evaluated the theories predicting the economic growth of developing Asian countries in the 20<sup>th</sup> century.

# Active voice is preferred

**AMA Manual of  
Style**

“In general, authors should use the **active voice**...”. (10<sup>th</sup> ed., pg. 320)

**APA Style**

“Use the **active voice** rather than the passive voice...”.  
[www.apastyle.org/learn/faqs/effective-verb-use.aspx](http://www.apastyle.org/learn/faqs/effective-verb-use.aspx)

**Chicago Style  
Guide**

“As a matter of style, passive voice is typically, but not always, inferior to **active voice**”. (15<sup>th</sup> ed., pg. 177)

**ACS Style Guide**

“Use the **active voice** when it is less wordy and more direct than the passive”. (3<sup>rd</sup> ed., pg. 42)

**Nature**

“Nature journals prefer authors to write in the **active voice**”  
([http://www.nature.com/authors/author\\_resources/how\\_write.html](http://www.nature.com/authors/author_resources/how_write.html))

# Activity 5: Effective writing

*Please see Activity 5 in your Workbook*

# Activity 5: Effective writing

## 1. Which of these two sentences is clearer? What is wrong with the other sentence?

A. Economists considered Apple Inc., a company that was founded by Steve Jobs and Steve Wozniak and incorporated in 1977 in Cupertino, California, to be one of the leaders in the development of modern electronic appliances.

B. Economists considered Apple Inc. to be one of the leaders in the development of modern electronic appliances. This company was founded by Steve Jobs and Steve Wozniak and incorporated in 1977 in Cupertino, California.

# Activity 5: Effective writing

**1. Which of these two sentences is clearer? What is wrong with the other sentence?**

A. Economists considered Apple Inc., a company that was founded by Steve Jobs and Steve Wozniak and incorporated in 1977 in Cupertino, California, to be one of the leaders in the development of modern electronic appliances.

- **Too long (35 words)**
- **Two ideas in the same sentence**

# Activity 5: Effective writing

1. Which of these two sentences is clearer? What is wrong with the other sentence?

A. Economists considered Apple Inc., a company that was founded by Steve Jobs and Steve Wozniak and incorporated in 1977 in Cupertino, California, to be one of the leaders in the development of modern electronic appliances.

- Too long (35 words)
- Two ideas in the same sentence
  - First idea is split



# Activity 5: Effective writing

1. Which of these two sentences is clearer? What is wrong with the other sentence?

B. Economists considered Apple Inc. to be one of the leaders in the development of modern electronic appliances. This company was founded by Steve Jobs and Steve Wozniak and incorporated in 1977 in Cupertino, California.

✓ **Two 17-word sentences**

✓ **One idea per sentence**

# Activity 5: Effective writing

## 2. Are the following sentences written in the active or passive voice?

We investigated the effect of group therapy on weight loss in men.

The effect of group therapy on weight loss in men was investigated.

We performed the analysis after all the surveys had been completed.

The analysis was performed after all the surveys had been completed.

*Passive*

Manufacturing increased after the introduction of the new assembly line.

The introduction of the new assembly line increased manufacturing.

Manufacturing was increased by the introduction of the new assembly line.

*Passive*

# Activity 5: Effective writing

- 3. What is wrong with the following sentence? How would you rewrite it to make it clearer?**

The patient who was admitted to the clinic after running a marathon held in honor of those who died from prostate cancer was diagnosed as having pancreatic cancer.

# Activity 5: Effective writing

3. What is wrong with the following sentence? How would you rewrite it to make it clearer?

The **patient** who was admitted to the clinic after running a marathon held in honor of those who died from prostate cancer **was diagnosed** as having pancreatic cancer.

28 words

**We diagnosed** a patient as having pancreatic cancer after **he ran** a marathon held in honor of those who died from prostate cancer. **23 words**

Subject-verb placement

Active voice

# Ambiguity

*Clearly explain your ideas to your reader*

**Unclear subjects**

**This, that, these,  
those, they, it**



**Qualitative words**

**Some, most, about,  
few, very**

**Subjective words**

**Surprisingly,  
unexpectedly**

# Unclear subject

 “Titania (TiO<sub>2</sub>) has been extensively investigated because of its practical prosperities for a diverse range of applications including pigments, photocatalysts, solar cells... **It** has three primary polymorphs in nature...”  




“Titania (TiO<sub>2</sub>) has been extensively investigated because of its practical prosperities for a diverse range of applications including pigments, photocatalysts, solar cells... **TiO<sub>2</sub> has** three primary polymorphs in nature...”

# Qualitative words

?

✘ “Cell viability was **generally** not affected by the pure EGCG...”



“Cell viability was **reduced by only 3.5%** by the pure EGCG...”

# Subjective words



“**Surprisingly**, EGCG increased cell growth compared with...”



“**Interestingly**, EGCG increased cell growth compared with...”



# Use strong verbs

**Avoid  
nominalizations**

**Converting a verb into a noun**

**Estimate** → *Estimation*

**Decide** → *Decision*

**Confirm** → *Confirmation*

# Use strong verbs

We made a...

Subject

Verb

Still no idea what this sentence is about!

*...decision?*

*...confirmation?*

*...estimation?*

*...cake?*

# Use strong verbs

~~We made a...~~

Subject

Verb

Still no idea what this sentence is about!

*We decided...*

*We confirmed...*

*We estimated...*

Clear and direct

# Use strong verbs

**We conducted an evaluation to determine if the program increased the recruitment of students and the maximization of faculty time.**

# Use strong verbs

*20 words*

We conducted an **evaluation** to determine if the program increased the **recruitment** of students and the **maximization** of faculty time.



*12 words*

We evaluated whether the program recruited more students and maximized faculty time.

# Unnecessary words

*Communicate complex ideas simply and concisely*

**“Therefore, it is interesting and important to investigate a new approach, which is easily scalable, to synthesize brookite.”**

# Unnecessary words

*Communicate complex ideas simply and concisely*

✘ “Therefore, **it is interesting and important** to investigate a new approach, **which is easily scalable**, to synthesize brookite.” 18

“Therefore, a new scalable approach to synthesize brookite is required.” 10

# Unnecessary words

*Communicate complex ideas simply and concisely*

✗ “Therefore, **it is interesting and important** to investigate a new approach, **which is easily scalable**, to synthesize brookite.”

“Therefore, a new scalable approach to synthesize brookite is required.”

“One of the candidates for such agents to extract alkali-metal ions from KTLO is PTFE. The reason why PTFE becomes a candidate is because it consists of C and F only.”



# Unnecessary words

*Communicate complex ideas simply and concisely*

✗ Therefore, **it is interesting and important** to investigate a new approach, **which is easily scalable**, to synthesize brookite.” 18

“Therefore, a new scalable approach to synthesize brookite is required.” 10

✗ **One of the candidates** for such agents to extract alkali-metal ions from KTLO is PTFE. **The reason why PTFE becomes a candidate is** because it consists of C and F only.” 31

“One candidate for an agent to extract alkali-metal ions from KTLO is PTFE, because it contains only C and F.” 20

# Unnecessary words

~~“It is well known that~~ most of the intense diffraction peaks...”

~~“As a matter of fact, such a~~ **This** low-temperature reaction...”

~~“A number of studies have shown that~~ the charged group...”

~~“That is another reason why~~ **Therefore**, we believe...”

...as described **previously** ~~in our previous study.”~~

~~“...at a flow rate of~~ 1.0 mL/min.”

# Unnecessary words

## *Avoid*

At a concentration of 2 g/L

At a temperature of 37°C

At a wavelength of 340 nm

In order to

In the first place

Four in number

Green color

Subsequent to

Prior to

## *Preferred*

At 2 g/L

At 37°C

At 340 nm

To

First

Four

Green

After

Before



# Unnecessary words

28 words

**In the first place, in order to determine the critical point of the material, we incubated it at a temperature of 95°C until it became black in color.**

# Unnecessary words

28 words

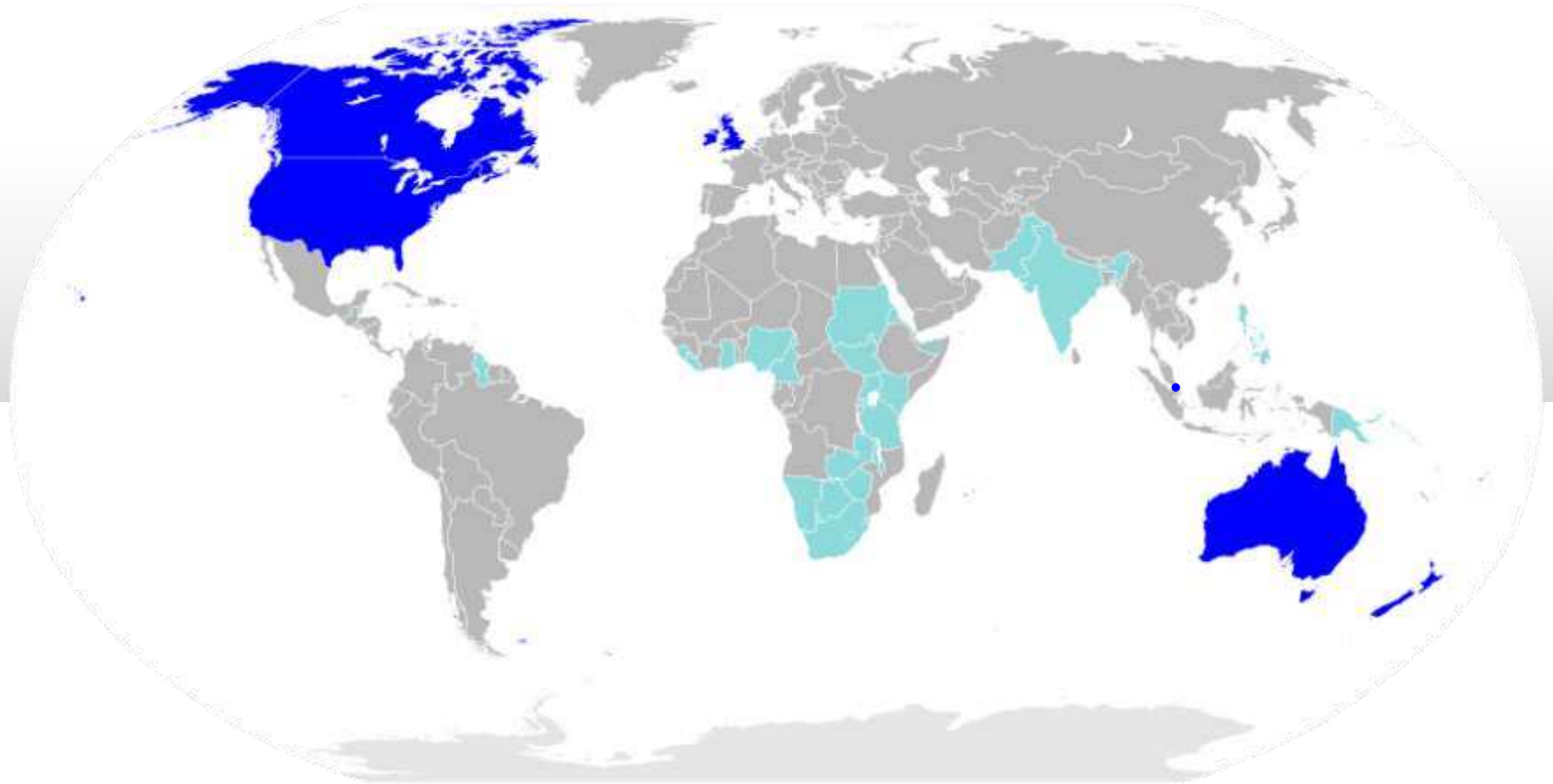
**In the first place, in order** to determine the critical point of the material, we incubated it at **a temperature of 95°C** until it became black **in color**.



18 words

First, to determine the critical point of the material, we incubated it at 95°C until it became black.

# What does this map represent?



 English is official language

 English is commonly used



**“I should use complex words to make my writing more impressive.”**

**The definition of genius is taking the complex and making it simple.**

**– *Albert Einstein***

# Complex words

**To ascertain the efficaciousness of the program, we interrogated the participants upon completion.**



# Complex words

To **ascertain** the **efficaciousness** of the program, we **interrogated** the participants upon completion.

To **determine** the **success** of the program, we **questioned** the participants upon completion.

# Avoid complex words

## ***Avoid***

Adequate  
Apparent  
Ascertain  
Endeavor  
Magnitude  
Retain  
Sufficient  
Terminate  
Utilization



## ***Preferred***

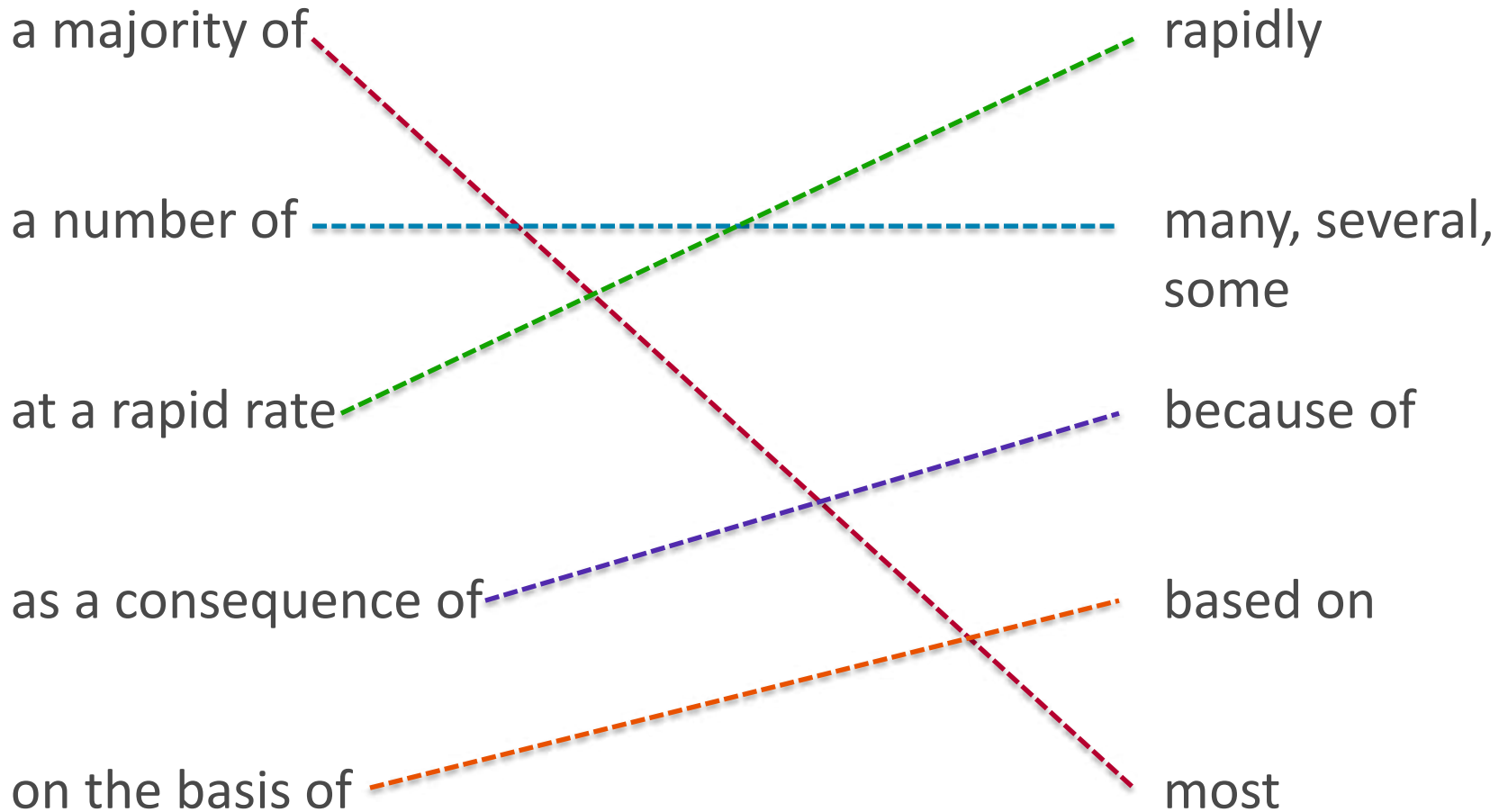
Enough  
Clear  
Determine  
Try  
Size  
Keep  
Enough  
End  
Use

# Activity 6: Effective writing

*Please see Activity 6 in your Workbook*

# Activity 6: Effective writing

1. Simple language exercise: Draw a line from the complex phrase to the simpler one(s).



# Activity 6: Effective writing

1. Simple language exercise: Draw a line from the complex phrase to the simpler one(s).

at this point in time

based on the fact that

completely filled

despite the fact that

in order to

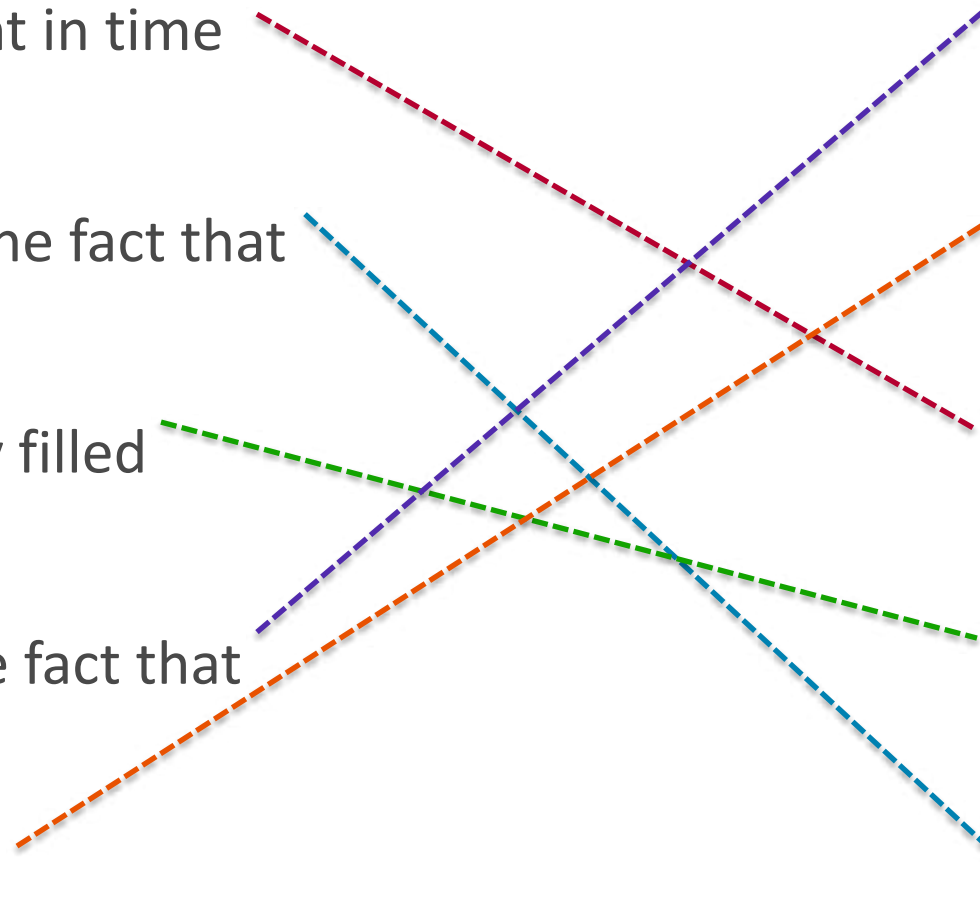
although

to

currently

filled

because



# Activity 6: Effective writing

2. **What is wrong with the following sentence? How would you rewrite it to be clearer?**

**37 words!**

Randomized groups of mice were subjected to different treatments based on age and sex to evaluate the effects of specific drugs on their nervous systems and freely fed organic food and water until the next regimen commenced.

# Activity 6: Effective writing

2. What is wrong with the following sentence? How would you rewrite it to be clearer?

37 words!

Randomized groups of mice were subjected to different treatments based on age and sex to evaluate the effects of specific drugs on their nervous systems and freely fed organic food and water until the next regimen commenced.

We evaluated the effects of specific drugs on the nervous systems of randomized groups of mice. Different treatments were given to the animals based on age and sex. The mice were then freely fed organic food and water until the next regimen began.

16, 12, & 15 words

Too long

Passive voice

Complex words

# Articles: 'a' and 'the'

**A(n):** refers to a non-specific noun

**The:** refers to a specific noun

“**A** theory that describes economic development...”

→ Suggests there is more than one theory

“**The** Big Bang theory...”

→ Suggests there is only one theory

“A participant was chosen based on education level.

The participant was then given a questionnaire to determine...”



# “Data” is plural

***Data*** is the plural form of ***datum***

The data was analyzed...  
*This* data suggests...



The data were analyzed...  
*These* data suggest...

# Comparisons

- ❖ ***Compared with*** is for comparing similar things
- ❖ ***Compared to*** is for comparing different things

The tumors of the treated group were compared to those of the control group.



The tumors of the treated group were compared with those of the control group.

# Comparisons

The toxicity of the new scaffold was reduced compared with the previous scaffold.

Comparing toxicity with the scaffold?

Parallel structure:

**A of B compared with A' of B'.**

The toxicity of the new scaffold was reduced compared with the toxicity of the previous scaffold.

The toxicity of the new scaffold was reduced compared with that of the previous scaffold.

# 'Between' or 'among'?

- Use ***between*** for comparisons of ***two*** groups

... the only difference *between* the original molecule and the new molecule is ...

- Use ***among*** for comparisons of ***more than two*** groups

... significant differences were observed in the values *among* bio-, fully- and semi-synthetic molecules

# Respectively

- ‘Respectively’ is often misused
- Used to refer to two or more *corresponding lists*

The two values were 143 and 21.

The values for group A and B were 143 and 21,  
*respectively*.



# Respectively – example

Oxygen detector flow	Nitrogen detector flow	Hydrogen detector flow
85 mL/min	7 mL/min	4 mL/min

The oxygen detector flow was set at 85 mL/min, the nitrogen detector flow was set at 7 mL/min, and the hydrogen detector flow was set at 4 mL/min. 28 words



Oxygen, nitrogen and hydrogen detector flows were set at 85, 7 and 4 mL/min, respectively. 15 words

# Correct verb tense

## Present

*Introduction*  
*Discussion*

## Present perfect

*Introduction*  
*Discussion*

## Past

*Methods*  
*Results*

**Stating an accepted fact**  
**Stating current implications**

“Graphene **is** one of the most promising materials for future electronic applications.”

**Referring to previous results that are still relevant**

“Group therapy **has been shown** to increase the success rates of...”

**Referring to what you did in the current study**

“Sorafenib **prevented** tumor growth in HCC patients...”

# Correct verb tense – Case study

## *Results*



“We **have taken** the powder XRD patterns of...”

“We **measured** the powder XRD patterns of...”



“A red shift in the G and 2D peak positions **is** observed...”

“A red shift in the G and 2D peak positions **was** observed...”

“We **observed** a red shift in the G and 2D peak positions ...”



# Correct verb tense – Case study

## *Discussion*



“This result **suggested** that these peaks **were from...**”

“This result **suggests** that these peaks **originated...**”



“These Raman spectroscopy results **confirmed** that...”

“These Raman spectroscopy results **confirm** that...”

Keywords: Suggests, demonstrates, confirms, supports

# Activity 7: Effective writing

*Please see Activity 7 in your Workbook*

# Activity 7: Effective writing

## 1. Insert the correct word(s) into the spaces.

- A. The examination success rate increased considerably compared with that of the previous year.
- B. After the experiment, the data were analyzed to determine the efficiency of the new method.

# Activity 7: Effective writing

2. Either add “respectively” or leave the space blank.

A. The study group comprised 44.1% and 55.9% of men and women, respectively.

B. The velocity of the first particle was 202 m/s, and the velocity of the second particle was 428 m/s \_\_\_\_\_.

The velocities of the first and second particles were 202 and 428 m/s, respectively.

# Activity 7:

## Effective writing

### 3. How would you improve the readability of the following sentences?

To determine whether our hypothesis was correct, we carefully analyzed the data.

To ~~ascertain~~ whether our hypothesis was correct, the data ~~was~~ carefully analyzed ~~with the appropriate methods~~.

passive

We tried to conduct our study with a smaller sample size.

We ~~endeavored~~ to conduct our study with a smaller sample size ~~that contained fewer participants~~.

Use 'fewer', not 'less', for plural nouns

It was clear that the drug was more effective compared with the control.

~~As a matter of fact~~, it was ~~apparent~~ that the drug was more effective compared ~~to~~ the control.

with

# Activity 7: Effective writing

## 3. Replace the complicated words and incorrect words in the following sentences with the words from the list below.

To decide if the statistical test was appropriate, we assessed the normality of the data distribution.

~~In order to make a decision~~ if the statistical test was appropriate, we ~~conducted an assessment of~~ the normality of the data distribution.

We ended the experiments once enough data were collected.

The experiments were ~~terminated~~ once ~~a sufficient amount of~~ data ~~was~~ collected. **passive**

Our results show that this new method is more efficient compared with ~~current methods~~.

Our results show that ~~the utilization of~~ this new method is more efficient compared ~~to~~ currently ~~utilized~~ methods.

with

used

current

# Activity 7: Effective writing

## 4. Can you improve these sentences?

~~Interestingly~~ ~~Surprisingly~~, our results ~~had demonstrated~~ that the flow rate of the new membrane was less efficient compared ~~to~~ the previous membranes. **demonstrate** **with parallel structure**

Interestingly, our results demonstrate that the flow rate of the new membrane was less efficient compared with ***the flow rates*** of the previous membranes.

Interestingly, our results demonstrate that the flow rate of the new membrane was less efficient compared with ***those*** of the previous membranes.

# Activity 7: Effective writing

## 4. Can you improve these sentences?

Surprisingly, our results demonstrate that the flow rate of the new membrane was less efficient compared to the previous membranes.

After we confirmed unnecessary

~~After a confirmation had been made about the use of the software's applicability, it was implemented to improve the efficaciousness of the cooling system.~~

efficacy/efficiency

After we confirmed the software's applicability, it was implemented to improve the efficacy of the cooling system.



# Activity 7: Effective writing

## 4. Can you improve these sentences?

Surprisingly, our results demonstrate that the flow rate of the new membrane was less efficient compared to the previous membranes.

Our study showed that combining conventional treatment with group therapy improved the children's cognitive development and health.

Be careful!

Our study ~~is the first to show~~ that combining conventional treatment with group therapy improved ~~both the cognitive development of the children and the children's health.~~

Be concise!

# Sentence structure

Which sentence suggests that you  
will get a raise?

1. Although you deserve a raise, the budget is tight.
2. Although the budget is tight, you deserve a raise.


*Stress position*

Readers focus at the **end of the sentence** to determine what is important.

The **stress position** also introduces the topic of the next sentence

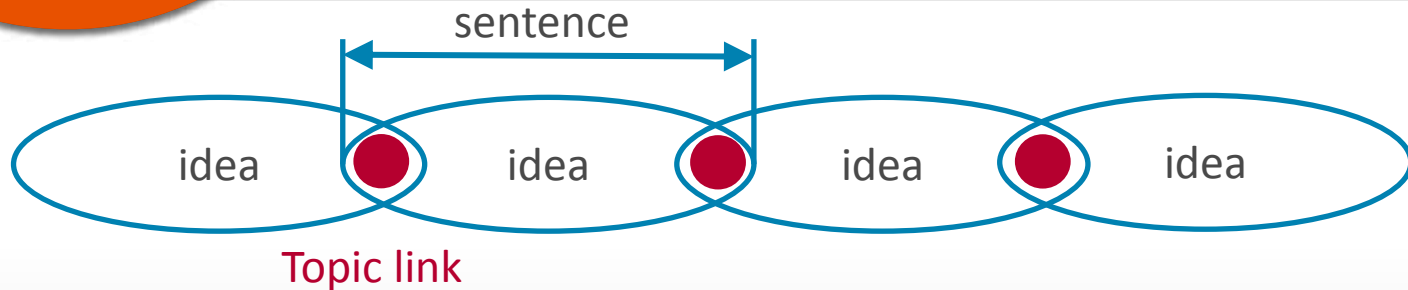
Although the budget is tight, **you deserve a raise.** **Your salary**  
will increase at the beginning of next year.

**Stress position**      **Topic position**



*The topic position introduces the idea of the current sentence*

# Sentence structure



*To increase the number of student applicants, the university recently implemented a **new program**. An important part of this program is to first give seminars at top-ranking high schools **in the region**. Increasing the number of local students is the initial step for the program's **success**.*

# Paragraph structure

## Topic sentence

Although water is abundant on earth, 98% of the available water resource is in the form of salty water. In fact, the shortage of clean and fresh water is one of most pervasive problems afflicting human society. The situation deteriorates with increasing population and industrialization. Desalination is one viable solution to produce fresh water from salty water. Conventional desalination methods, including reverse osmosis and thermal desalination, encounter two major obstacles—high energy consumption and expensive infrastructure. Therefore, identification of more efficient and cost-effective desalination methods are necessary.

**Develop idea**

**Stress sentence**

## Topic sentence

Membrane nanoporous materials have attracted considerable attention because of their great potential for desalination. Water can flow through very narrow nanopores...

# Activity 8: Effective writing

*Please see Activity 8 in your Workbook*

# Activity 8:

## Effective writing

1. **Based on the stress and topic positions, how would you logically organize these four sentences?**
  - A. Centrally located cells likely received lower drug concentrations owing to decreased drug bioavailability.
  - B. Application of the drug decreased cell movement but increased cell survival.
  - C. Increasing the bioavailability of the drug is an important area of future research.
  - D. Cell survival rates were higher in the tissue periphery and lower in the center.

# Activity 8: Effective writing

1. Based on the stress and topic positions, how would you logically organize these four sentences ?
- A. Centrally located cells likely received lower drug concentrations owing to decreased drug bioavailability.▲
  - ★ B. Application of the drug decreased cell movement but increased cell survival.■
  - ▲ C. Increasing the bioavailability of the drug is an important area of future research.
  - D. Cell survival rates were higher in the tissue periphery and lower in the center.●



# Activity 8: Effective writing

1. Based on the stress and topic positions, how would you logically organize these four sentences ?

Application of the drug decreased cell movement but increased cell survival. The survival rates were higher in the tissue periphery and lower in the center. Centrally located cells likely received lower drug concentrations owing to decreased drug bioavailability. Increasing the bioavailability of the drug is an important area of future research.

**Your goal is not only to be published,  
but also to be widely read and cited**

## **Be an effective communicator**

- ✓ **Importance of publishing**
- ✓ **Importance of professional ethics**
- ✓ **Logically present your research in your manuscript**
- ✓ **Effectively communicate your ideas in English**

# *Any questions?*

*Thank you!*

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