



臺灣大學

National Taiwan University

Why study plants

內蒙古農大普通生物學雙語課程  
當代農業生技

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Lecture 9, sentence structure  
in academic science

# 阿滴: how to learn words

- 2:20 collocation, words not alone. need to b (fast train vs. quick train)
- Context, need to with sentences
- Syllabus
- Prefix,
- Habit helps long term memory

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## Comprehensive Method of Vocab Memorization

# 5 On-line dictionary

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Improving Your English  
Quickly with Videos

# Improving Your English Accent with Shadowing

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**Matt Cutts: Try something new  
for 30 days**

What are Open Textbooks?

*Education is about sharing*

0:00:00 1:19:56

About Open Textbooks News and Events

Discussion Forum Resources

Primary Textbooks Secondary Textbooks

Photo: courtesy of HKSAR Government Photo: courtesy of HKSAR Government

Textbooks for Certificates and Diplomas Tertiary and University Textbooks

## TRANSITION WORDS

### What are transitions and how are they used?

- transitions are phrases or words used to **connect one idea to the next**
- transitions are used by the author to **help the reader progress from one significant idea to the next**
- transitions also show the **relationship** within a paragraph (or within a sentence) **between the main idea** and the support the author gives for those ideas

# Transitions may be "Additive," "Adversative," "Causal," or "Sequential."

Additive Transitions	Adversative Transitions (opposition)	Causal (not <i>casual</i> ) Transitions	Sequential Transitions
<a href="#">Addition</a> <a href="#">Introduction</a> <a href="#">Reference</a> <a href="#">Similarity</a> <a href="#">Identification</a> <a href="#">Clarification</a>	<a href="#">Conflict</a> <a href="#">Emphasis</a> <a href="#">Concession</a> <a href="#">Dismissal</a> <a href="#">Replacement</a>	<a href="#">Cause/Reason</a> <a href="#">Effect/Result</a> <a href="#">Purpose</a> <a href="#">Consequence</a>	<a href="#">Numerical</a> <a href="#">Continuation</a> <a href="#">Conclusion</a> <a href="#">Digression</a> <a href="#">Resumption</a> <a href="#">Summation</a>

<https://msu.edu/~jdowell/135/transw.html>

## Adversative Transitions:

These transitions are used to signal conflict, contradiction concession, dismissal, &c.

### Conflict:

but, by way of contrast, while, on the other hand,  
 however, (and) yet, whereas, though (final position),  
 in contrast, when in fact, conversely, still

## Causal Transitions:

These transitions signal cause/effect and reason/result, etc. . .

### Cause/Reason:

for the (simple) reason that, being that, for, in view of (the fact), inasmuch as,  
 because (of the fact), seeing that, as, owing to (the fact),  
 due to (the fact that), in that since, forasmuch as,

<p><b>ADDING</b></p> <p>and also as well as moreover too furthermore additionally</p>	<p><b>SEQUENCING</b></p> <p>first, second, third... finally next meanwhile after then subsequently</p>	<p><b>ILLUSTRATING</b></p> <p>for example such as for instance in the case of as revealed by... illustrated by</p>	<p><b>CAUSE and EFFECT</b></p> <p>because so therefore thus consequently hence</p>
<p><b>COMPARING</b></p> <p>similarly likewise as with like equally in the same way..</p>	<p><b>QUALIFYING</b></p> <p>but however although unless except apart from as long as if</p>	<p><b>CONTRASTING</b></p> <p>whereas instead of alternatively otherwise unlike on the other hand.. conversely</p>	<p><b>EMPHASISING</b></p> <p>above all in particular especially significantly indeed notably</p>

To Show Order



after  
at this time  
before  
during  
finally  
first  
following  
next

previously  
second  
since  
soon  
then  
third  
while

To Add Information



additionally  
along with  
also  
another  
as well  
besides

finally  
for example  
for instance  
furthermore  
in addition  
too

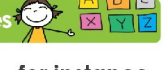
To Indicate a Purpose or Reason



so that  
with this in mind  
because

In fact  
in order to  
furthermore

To Give Examples



such as  
for example  
evidence of this

for instance  
in this case  
proof of this

To Compare



as  
compared to  
like  
for the same reason

similar to  
similarly

To Contrast



however  
sometimes  
on the other hand  
nevertheless  
in contrast

yet  
except  
but  
in spite of  
whereas

To Emphasize



absolutely  
always  
definitely  
especially  
without a doubt

in fact  
never  
particularly  
positively

To Conclude



all in all  
as a result  
finally  
in conclusion  
in summary

in brief  
lastly  
overall  
therefore  
to sum up

We mentioned that laboratory investigators had injected double-stranded RNAs into cells, and you may wonder whether such molecules are ever found naturally. As you will learn in Chapter 19, some viruses have double-stranded RNA genomes. Because the cellular RNAi pathway can lead to the destruction of RNAs with sequences complementary to those found in double-stranded RNAs, this pathway may have evolved as a natural defense against infection by such viruses. However, the fact that RNAi can also affect the expression of nonviral cellular genes may reflect a different evolutionary origin for the RNAi pathway. Moreover, many species, including mammals, apparently produce their own long, double-stranded RNA precursors to small RNAs such as siRNAs. Once produced, these RNAs can interfere with gene expression at stages other than translation, as we'll discuss next.

We mentioned that laboratory investigators had injected double-stranded RNAs into cells, and you may wonder whether such molecules are ever found naturally. **As** you will learn in Chapter 19, some viruses have double-stranded RNA genomes. **Because** the cellular RNAi pathway can lead to the destruction of RNAs with sequences complementary to those found in double-stranded RNAs, this pathway may have evolved as a natural defense against infection by such viruses. **However** the fact that RNAi can also affect the expression of nonviral cellular genes may reflect a different evolutionary origin for the RNAi pathway. **Moreover**, many species, including mammals, apparently produce their own long, double-stranded RNA precursors to small RNAs such as siRNAs. **Once** produced, these RNAs can interfere with gene expression at stages other than translation, as we'll discuss next.

## Combining Sentences (4 ways)

1. **Simple sentence** (subject + verb + complete idea)  
compound subjects, compound (two) verbs
2. **Compound sentence**: connect 2 simple sentences or 2 independence clauses by (**Comma** + **conjunctive adverb**), **Semicolon** or (**Semicolon** + **conjunctive adverb**)
3. **Complex sentence**: **Independence clause** (**complete stand alone ideas**) + **subordinating conjunctions** + **dependence clause** (**incomplete ideas**)
4. **Compound complex sentence**: **2 Independence clauses** + **>1 dependence clause**



Compound sentence (connect 2 simple sentences or 2 independence clauses):

Way 1. **Comma** + **coordinating conjunction** (And, but, so, or, for, yet, nor)

ex: I've had a very long day, **so** I'm going bed.

ex: My father and brother play chess together, **but** the game always ends with an argument.

Way 2. **Semicolon** (**cause & effect** but not contrast)

ex: The storm was very destructive; many people lost their homes

Way 3. **Semicolon** + **conjunctive adverb** (therefore, furthermore, consequently, however, in contrast, for example)

ex: Many people lost their homes in the storm ; **therefore**, they were forced to rebuild.

## Combining Sentences (Part 2)

# Complex sentences

Independence clause (complete stand alone ideas) + dependence clause (incomplete ideas)

dependence clause starts with subordinating conjunctions

(When, although, because, after, until)

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**Complex sentences (subordinating conjunctions)** Independence clause (main idea)

- When I was walking home from school, I slipped and fell on the ice
  - Because Kevin has limited experience, the company was hesitant to hire him.
- > The company was hesitant to hire him because Kevin has limited experience

# Compound complex

- 2 Independence clauses (complete stand alone ideas) + >1 dependence clause (incomplete ideas)

Ex. When young people are exposed to violence on television, they can be influenced by what they see; therefore, it is important for parents to communicate with their children about the program they watch.

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- Let's review previous homeworks and group discussion results

**Topic Sentence**

(main idea + personal opinion)

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**Body**

Supporting Sentence

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Supporting Sentence

---

Supporting Sentence

---

Supporting Sentence

---

**Conclusion**

(summary of main idea + personal opinion)

Concluding Sentence



Paragraphs that begin with the **topic sentence** move from the general to the specific. They open with a general statement about a subject (reality shows) and then discuss specific examples (the reality show Prisoner). Most academic essays contain the topic sentence at the beginning of the first paragraph.

A growing understanding of the miRNA pathway provided an explanation for a perplexing observation: Researchers had found that **injecting double-stranded RNA molecules into a cell somehow turned off expression of a gene with the same sequence as the RNA.** They called this experimental phenomenon

**Topic**

**RNA interference (RNAi).** It was later shown to be due to **small interfering RNAs (siRNAs)**, which are similar in size and function to miRNAs. In fact, subsequent research showed that the same cellular machinery generates **miRNAs and siRNAs**

**Supporting sentences (highlighted)**

and **that both can associate with the same proteins, producing similar results.** The distinction between miRNAs and siRNAs is based on the nature of the precursor molecule for each. While

**concluding**

**an miRNA is usually formed from a single hairpin in a precursor RNA (see Figure 18.15), multiple siRNAs are formed from a much longer, linear, double-stranded RNA molecule.**

## Business English for Success



### Characteristics of a Good Topic Sentence



26 January, 2015 - 16:00



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Five characteristics define a good topic sentence:

1. A good topic sentence provides an accurate indication of what will follow in the rest of the paragraph.

**Weak example.** People rarely give firefighters the credit they deserve for such a physically and emotionally demanding job. (The paragraph is about a specific incident that involved firefighters; therefore, this topic sentence is too general.)

**Stronger example.** During the October riots, Unit 3B went beyond the call of duty. (This topic sentence is more specific and indicates that the paragraph will contain information about a particular incident involving Unit 3B.)

2. A good topic sentence contains both a topic and a controlling idea or opinion.

**Weak example.** In this paper, I am going to discuss the rising suicide rate among young professionals. (This topic sentence provides a main idea, but it does not present a controlling idea, or thesis.)

**Stronger example.** The rising suicide rate among young professionals is a cause for immediate concern. (This topic sentence presents the writer's opinion on the subject of rising suicide rates among young professionals.)

3. A good topic sentence is clear and easy to follow.

**Weak example.** In general, writing an essay, thesis, or other academic or nonacademic document is considerably easier and of much higher quality if you first construct an outline, of which there are many different types. (This topic sentence includes a main idea and a controlling thesis, but both are buried beneath the confusing sentence structure and unnecessary vocabulary. These obstacles make it difficult for the reader to follow.)

**Stronger example.** Most forms of writing can be improved by first creating an outline. (This topic sentence cuts out unnecessary verbiage and simplifies the previous statement, making it easier for the reader to follow.)

4. A good topic sentence does not include supporting details.

**Weak example.** Salaries should be capped in baseball for many reasons, most importantly so we don't allow the same team to win year after year. (This topic sentence includes a supporting detail that should be included later in the paragraph to back up the main point.)

**Stronger example.** Introducing a salary cap would improve the game of baseball for many reasons. (This topic sentence omits the additional supporting detail so that it can be expanded upon later in the paragraph.)

5. A good topic sentence engages the reader by using interesting vocabulary.

**Weak example.** The military deserves better equipment. (This topic sentence includes a main idea and a controlling thesis, but the language is bland and unexciting.)

**Stronger example.** The appalling lack of resources provided to the military is outrageous and requires our immediate attention. (This topic sentence reiterates the same idea and controlling thesis, but adjectives such as *appalling* and *immediate* better engage the reader. These words also indicate the writer's tone.)

Choose the most effective topic sentence from the following sentence pairs.

1. a. This paper will discuss the likelihood of the Democrats winning the next election.  
b. To boost their chances of winning the next election, the Democrats need to listen to public opinion.
2. a. The unrealistic demands of union workers are crippling the economy for three main reasons.  
b. Union workers are crippling the economy because companies are unable to remain competitive as a result of added financial pressure.
3. a. Authors are losing money as a result of technological advances.  
b. The introduction of new technology will devastate the literary world.
4. a. Rap music is produced by untalented individuals with oversized egos.  
b. This essay will consider whether talent is required in the rap music industry.

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3. a. Authors are losing money as a result of technological advances.

b. The introduction of new technology will devastate the literary world.

4. a. Rap music is produced by untalented individuals with oversized egos.

b. This essay will consider whether talent is required in the rap music industry.

## Answers ( Part 1 )

1a. don't announce the topic

2b. too narrow

3a. too broad

4a. too broad



## Exercise 6.6



2 February, 2015 - 12:20



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Identify the topic sentence, supporting sentences, and concluding sentence in the following paragraph.

The desert provides a harsh environment in which few mammals are able to adapt. Of these hardy creatures, the kangaroo rat is possibly the most fascinating. Able to live in some of the most arid parts of the southwest, the kangaroo rat neither sweats nor pants to keep cool. Its specialized kidneys enable it to survive on a miniscule amount of water. Unlike other desert creatures, the kangaroo rat does not store water in its body but instead is able to convert the dry seeds it eats into moisture. Its ability to adapt to such a hostile environment makes the kangaroo rat a truly amazing creature.

### Collaboration

Please share with a classmate and compare your answers.

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## Topic, supporting and concluding

## Exercise 6.6



2 February, 2015 - 12:20



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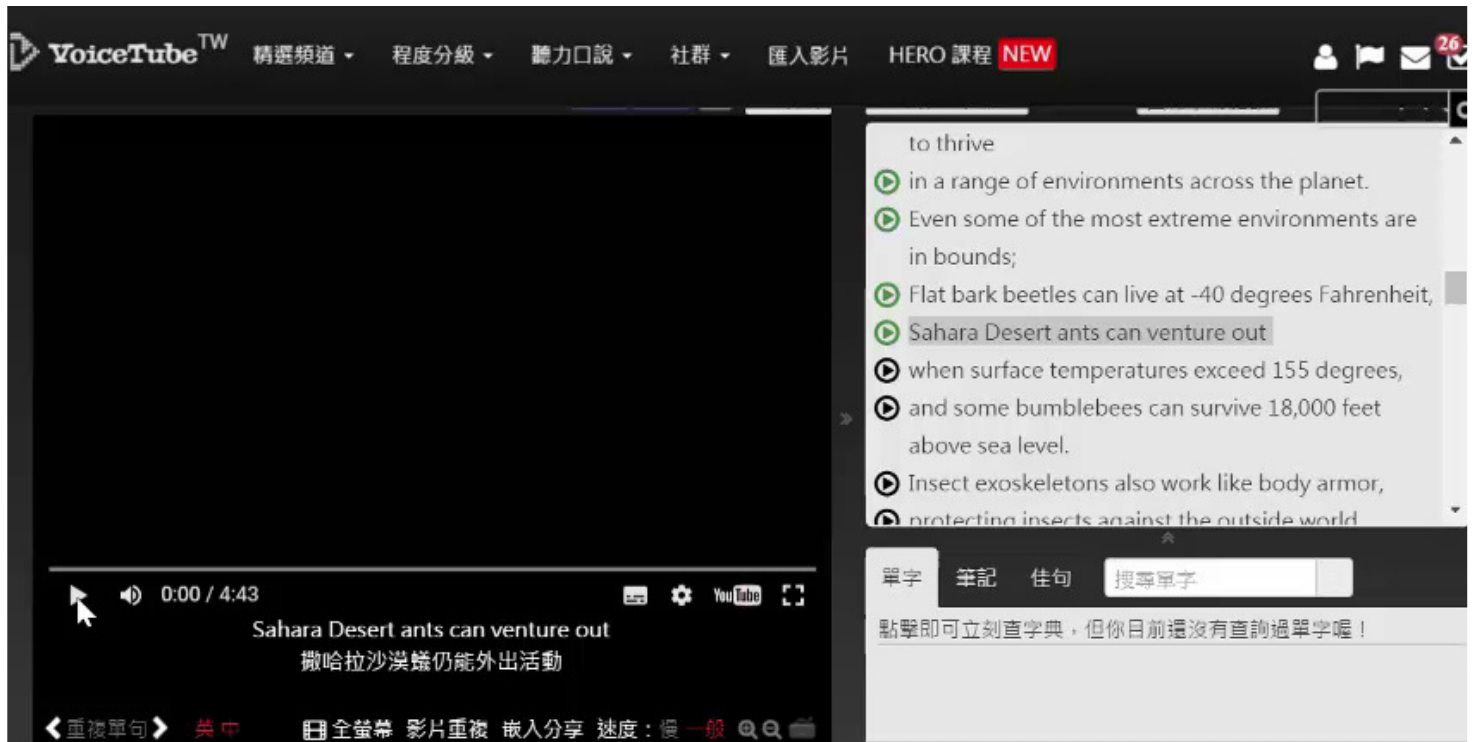
### Collaboration

Please share with a classmate and compare your answers.

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# 【TED-Ed】蟲蟲危機從何而來？ (Why are there so many insects?)

<https://tw.voicetube.com/videos/35769?ref=teded>



to thrive

- ▶ in a range of environments across the planet.
- ▶ Even some of the most extreme environments are in bounds;
- ▶ Flat bark beetles can live at -40 degrees Fahrenheit,
- ▶ Sahara Desert ants can venture out
- ▶ when surface temperatures exceed 155 degrees,
- ▶ and some bumblebees can survive 18,000 feet above sea level.
- ▶ Insect exoskeletons also work like body armor,
- ▶ protecting insects against the outside world

單字 筆記 佳句 搜尋單字

點擊即可立刻查字典，但你目前還沒有查詢過單字喔！

Sahara Desert ants can venture out  
撒哈拉沙漠蟻仍能外出活動

0:00 / 4:43

重複單句 中英 全螢幕 影片重複 嵌入分享 速度：慢 一般

Read: 【TED-Ed】蟲蟲危機從何而來？ (Why are there so many insects?)

<https://tw.voicetube.com/videos/35769?ref=teded>

Transform key concepts/key words you found in the film into 3-5 questions and answers

## 1. What happens if insect suddenly become large beings and numbers?

A: They will destroy us simply because they outnumber us by more than a billion to one.

## 2. What are the secrets for insects to success?

They breed many offspring; so even they die a lot, still many survive.

They mature rapidly so their cycles of reproduction resume quickly.

Insect exoskeleton also protects them against the outside world

Insects are tiny, so they can make use of all the available resources around it. This means they can occupy hundreds of niches across ecosystems

3. How could insect adapt so well on earth given their huge species diversity and individual numbers?

A: Fast reproduction means insect contains great genetic diversity allowing them to adapt different environment.

4. What is the advantage of metamorphosis in insect?

It not only transform insect but also help them to maximize the available resources in an ecosystem.

Take butterfly, in the larval caterpillar form, they feed on leaves. But when they emerge as butterfly, these insects feed only on flower nectar.

So the larvae and adults share an ecological niche without competing the same resource.