

The following grammar explanations and exercises use the terminology that I use in class. Other grammars that you consult may use different terms to talk about the same thing and may approach the topics in different ways.

The order of the topics is not necessarily from the easiest to the most difficult. Use the table of contents to help find the topics that you need.

Some useful websites for extra grammar practice are:

<http://www.grammar-quizzes.com/index.html>

<http://www.writing.engr.psu.edu/exercises/>

<https://www.englishgrammar101.com/>

<http://www.chompchomp.com/exercises.htm>

Sites for basic English grammar practice:

http://www.myenglishpages.com/site_php_files/grammar.php

<http://www.eslgold.com/grammar/explanations.html> (explanation & exercises)

A useful site for typical phrases in academic English

<http://www.phrasebank.manchester.ac.uk/>

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WRITING REVISION CODES

Code	Example	Revision
VERBS (VG)		
Verb concord	This sequence <u>have</u> ...	This sequence <u>has</u> ...
Verb structure	they are there <u>not only to provides</u> us	to provide
	This <u>encouraged</u> some activities <u>expanded</u> .	This encouraged some activities <u>to expand</u> .
	... which <u>may represents</u>...	... which <u>may represent</u> ...
Verb tense	The mother and the daughter stand for a happy family, who <u>is depending</u> on natural gas.	The mother and the daughter stand for a happy family, who <u>depend</u> on natural gas.
Use the infinitive to express purpose (non-finite clause)	To make the advertisements clearer and objective, the company began dividing them into two parts <u>for reflecting</u> better what the company needs to convey.	To make the advertisements clearer and objective, the company began dividing them into two parts <u>to reflect</u> better what the company needs to convey.
Embedded question	In this advertisement, the main elements are ordinary people explaining in a simple way <u>what would be the benefits of a cleaner energy</u> .	In this advertisement, the main elements are ordinary people explaining in a simple way <u>what the benefits of a cleaner energy would be</u> .
NOMINAL GROUPS (NG)		
Structure • Check agreement: determiner – N • Check modification structure (see pp. 7-10)	<ul style="list-style-type: none"> • <u>this companies</u> • <u>peoples transport needs</u> • <u>actions of Chevron</u> • their <u>high</u> developed technologies • the objective of <u>compensate</u> ... 	<ul style="list-style-type: none"> • <u>this company / these companies</u> • <u>people's transport needs</u> • <u>Chevron's actions</u> • their <u>highly</u> developed technologies • the objective of <u>compensating</u>
Presenting / General participant: • check determiner • check the noun (see p. 15)	<ul style="list-style-type: none"> • Exxon Mobil began to project <u>a image</u> of a modern company ... • All of them show <u>image</u> of pure nature. • <u>The oil</u> is a very important non-renewable resource. 	<ul style="list-style-type: none"> • Exxon Mobil began to project <u>an image</u> of a modern company • All of them show <u>images</u> of pure nature. • <u>Oil</u> is a very important non-renewable resource.
Presumed / Specific participant: • insert determiner • specify what (see p. 15)	<ul style="list-style-type: none"> • ... or even diving in <u>deep sea</u>. • The text explains <u>the problem</u> and its effects ... 	<ul style="list-style-type: none"> • ... or even diving in <u>the deep sea</u>. • The text explains <u>the problem of rising oil prices</u> and its effects
Defining relative clause: check construction – punctuation & relative pronoun (see p. 9)	... meaning that the consumers can trust a powerful, living company, <u>that</u> has the strength to deal with changes.	... meaning that the consumers can trust a powerful, living company <u>that</u> has the strength to deal with changes.
Non-defining relative clause: check construction – punctuation & relative pronoun (see p. 9)	There was a drawing with lab instruments, <u>that makes readers think that Shell is a dynamic company</u> .	There was a drawing with lab instruments, <u>which makes readers think that Shell is a dynamic company</u> .
	In one advert they show a picture of an old city, <u>that brings to mind the typical cities of Italy</u> in contrast with a very modern Formula 1 car.	In one advert they show a picture of an old city, <u>which brings to mind the typical cities of Italy</u> , in contrast with a very modern Formula 1 car.

Code	Example	Revision
OTHER		
Parallel structure (and, or, but)	... <u>despite being</u> a company that is concerned about the environment <u>and are applying</u> their resources in the preservation of the same.	... <u>despite being</u> a company that is concerned about the environment <u>and are applying</u> their resources in the preservation of the same.
	They have scientists doing research <u>to optimize</u> the use of these natural resources <u>and providing</u> us with cleaner energy.	They have scientists doing research <u>to optimize</u> the use of these natural resources <u>and to provide</u> us with cleaner energy.
(Inappropriate) Word choice	... explaining how the company <u>pretended</u> to become greener.	... explaining how the company <u>intended</u> to become greener.
	<u>In resume</u> , Some years ago oil companies started to carry out a change in their advertising policy, with the objective of showing customers that they are aware of the environment. That change <u>is given</u> because nowadays people are more concerned about climate change.	<u>In short</u> , Some years ago oil companies started to carry out a change in their advertising policy, with the objective of showing customers that they are aware of the environment. That change <u>came about</u> because nowadays people are more concerned about climate change. Or That change <u>was prompted by the fact that</u> nowadays people are more concerned about climate change.
Spelling	<u>attention</u>	<u>attention</u>
Lexical + prep(osition)	The oil companies show <u>concern about</u> proximity with their customers.	The oil companies show <u>concern for</u> proximity with their customers.
Word order	an alternative that makes <u>possible</u> <u>the existence of oil</u> for many more years	an alternative that makes <u>the existence of oil possible</u> for many more years
	It is common <u>appear</u> <u>some windmills</u>	It is common <u>for some windmills to appear</u>
Comparative / superlative construction	<ul style="list-style-type: none"> more cheap they are not <u>so bad like</u> people think 	<ul style="list-style-type: none"> cheaper they are not <u>as bad as</u> people think
REGISTER		
Overtly subjective (usually due to choice of Theme) Rewrite in a more objective-sounding style (see pp.34-48)	In the first two advertisements <u>we can see</u> on the top the image of a man and of a worker.	<u>The first two advertisements show</u> a man and a worker on the top of each image. OR <u>On the top half of the first two advertisements, there is</u> a man or a worker.
	<u>It seems that</u> the first two ads mirror that TOTAL is caring about the nature and that they are trying to be environmentally responsible.	The first two ads <u>imply</u> that TOTAL cares about nature and that they are trying to be environmentally responsible

Code	Example	Revision
ABOVE THE CLAUSE		
Punctuation	In one of these advertisements, there was a text about CO ₂ emissions.	In one of these advertisements, there was a text about CO ₂ emissions.
	Shell is trying to project a responsible position with regard to their activity, because their pollution can be used in other activities.	Shell is trying to project a responsible position with regard to their <u>activity</u> because their pollution can be used in other activities.
	Most of them had a common message, that under tough conditions they struggled hard to find oil.	Most of them had a common message; under tough conditions they struggled hard to find oil.
Run on sentences R.O.S. (see p. 17)	Following this campaign, they released two more adverts, both share the same traces, in one of them we have a kid looking at the sky in a calm and peaceful location.	Following this campaign, they released two more adverts. Both share the same traces. In one of them we have a kid looking at the sky in a calm and peaceful location.
		Following this campaign, they released two more adverts, and both share the same traces. In one of them we have a kid looking at the sky in a calm and peaceful location
Sentence too long. Break here*. Reformulate Theme if necessary.	The second campaign in 2006 represents Exxon Mobil as a trustworthy, hard-working and committed company, * showing us good-looking scientists, all dressed up and serious.	The second campaign in 2006 represents Exxon Mobil as a trustworthy, hard-working and committed <u>company</u> . The ad shows us good-looking scientists, all dressed up and serious.
DISCOURSE MANAGEMENT & COHERENCE		
(Awkward) Information flow / Thematic progression (TP) Reformulate Theme	What is more, other pictures show molecules, which we could see in the first campaign, but these ones are more real, greener, and they have something liquid inside. <u>It is a symbol of</u> even more serious research.	What is more, other pictures show molecules, which we could see in the first campaign, but these ones are more real, greener, and they have something liquid inside. <u>They symbolise</u> even more serious research.
	It's a very positive campaign, showing they are committed to driving their company's energy to every single person, independently of their colour, age or job. <u>This is an advertisement campaign</u> more turned to people, <u>unlike the last one</u> .	It's a very positive campaign, showing they are committed to driving their company's energy to every single person, independently of their colour, age or job. <u>Unlike the last campaign, this one is</u> more turned to people,
Reference	Society had to adapt to this important resource when <u>is</u> price went up.	Society had to adapt to this important resource when <u>its</u> price went up.
	... the company goes far away to bring new energy sources to <u>them</u> clients.	... the company goes far away to bring new energy sources to <u>their</u> clients.
Unclear reference (see pp. 31 & 34)	The first campaign shows us a working brain. This suggests that <u>they</u> are creative and ground breaking.	The first campaign shows us a working brain. This suggests that <u>the company is</u> creative and ground breaking.

BELOW THE CLAUSE

Nominal Group (NG) structure

	PRE-MODIFICATION				HEAD NOUN	POST- MODIFICATION
Function	Deictic	Numerative	Epithet	Classifier	<u>HEAD</u>	Qualifier
Form	Determiner/ Possessive	Number/ quantifying expression	Adjective	Noun	<u>NOUN</u>	Prep. phrase
						Relative clause
						Non-finite clause
Example	the	six	biggest	oil	<u>companies</u>	of the world

PRE-MODIFICATION

1. The Deictic situates the head noun (underlined) with regard to whether the information is specific/general or known/not known by the listener/reader. Words from different word classes can function as deictic. A deictic can be singular, plural or \emptyset

**an oil company; these oil companies; \emptyset oil, **their image; the spike in demand
another advertisement; other advertisements****

When the possessor is animate (e.g. human) or the name of a country, town, organisation, or company, use 's

people's transport needs; OPEC's decision

Company names usually take \emptyset .

OPEC; Shell; Chevron

2. The Numerative can be a number or a quantifying expression

these **three** advertising campaigns; **a litre of** petrol

3. The Epithet describes or evaluates the Head Noun. It is typically an adjective.

Adjectives are never plural.

sharp increases; a new trend ; an **important but **non-renewable** resource**

Epithets can be modified by adverbs.

an *incredibly* **important resource; *very* **sharp** increases**

4. The Classifier assigns the Head Noun to a class, i.e. what kind of thing is it?

It is typically a noun and singular.

an oil company, oil companies; **car-makers; **customer** relations**

exceptions: the *futures* stock market; a *telecommunications* satellite

POST-MODIFICATION

Regardless of its form, a post-modifier functions as Qualifier to the head noun. A qualifier provides further information/specification about the head noun. There are 4 different types.

1. A PREPOSITIONAL PHRASE can tell us more about the head noun. It is formed by a preposition and a nominal group. The preposition does not have to be 'of'.

	preposition	nominal group
e.g.	in/for/of etc	new technologies

demand for oil; interest in hybrids; investments in new technologies

the scarcity of oil; a combination of a normal petrol engine **with** an electric engine

Information in the Qualifier can be essential or non-essential to the meaning of the NG. Non-essential information is surrounded by commas (,) and the nominal group is typically known (presuming information).

Many volunteers have been busy helping to clean up the oil spill on the coast near the southern port city of Yeosu in South Jeolla Province. The volunteers, in protective clothing, dustproof masks and gloves, scooped up and wiped oil off the rocks along the coast. (that the volunteers are wearing protective clothing, dustproof masks and gloves is not essential information. It could be left out.)

The latest costly addition to Shell's production capacity comes despite Van Beurden's repeated pledges on climate change. (essential information for the meaning)

Staff at a BP-owned oil rig in the North Sea were forced to evacuate after an unmanned barge threatened to crash into it. (that the oil rig is in the North Sea is essential information for the meaning)

2. DEFINING RELATIVE CLAUSES implicitly distinguish between two groups: one with the characteristics and one without. The information in the defining relative clause is needed to identify the noun that is being talked about.

There are no commas (,) in a defining relative clause.

... an example of an alternative energy that substitutes petrol ... (i.e. there are alternative energies that don't substitute petrol, e.g. solar)

... people who live outside the city (i.e. as opposed to people who live in the city)

3. NON-DEFINING RELATIVE CLAUSES add extra information about the head noun.

The non-defining relative clause is surrounded by commas (,) and cannot use 'that' as the relative pronoun.

One of these new technologies is the hybrid car, **which combines a normal petrol-driven engine with an electric one.**

(meaning) One of these new technologies is the hybrid car. The hybrid car combines a normal petrol-driven engine with an electric one.

The oil price increases changed the mentalities of oil consumers, **who started to consume less oil.**

(meaning) The oil price increases changed the mentalities of oil consumers. The oil consumers started to consume less oil.

DON'T SEPARATE THE RELATIVE CLAUSE FROM THE THING THAT IT MODIFIES.

RELATIVE PRONOUNS

	DEFINING RELATIVE CLAUSE	NON-DEFINING RELATIVE CLAUSE (WITH COMMAS)
people	who; that; whom	who; whom
objects, animals	which; that	which
a clause / ideas	-	which
possessive (person's)	whose	whose
places	where; that	where
time	when; that	when

Both *who* and *whom* can refer back to people. If we put a preposition before *who*, the pronoun always becomes *whom*. Compare:

The people *who* we wrote the report *for* are non-specialists, not engineers or professionals with technical expertise.

The people *for whom* we wrote the report are non-specialists, not engineers or professionals with technical expertise.

The oil companies *with whom* complaints have been lodged face up to \$100,000 in fines.

The oil companies *who* complaints have been lodged *with* face up to \$100,000 in fines.

4. NON-FINITE CLAUSES add information about what the head noun is doing or does or what has happened to it. The information may be essential or non-essential. When the information is not essential, it is separated by commas (,).

At Stones, oil and gas is pumped from several points on the sea bed through flexible riser pipes to a specialised tanker, **incorporating a detachable 3,150-tonne buoy.** (meaning: the specialised tanker incorporates a detachable 3.150-tonne buoy but the fact that the tanker incorporates a detachable 3.150-tonne buoy is not essential information)

A non-finite clause is not marked for time, tense or certainty. I.e. the verb is not in a particular tense, e.g. past, present perfect, future, etc. There are 3 forms of non-finite verbs.

Verb + ing (present participle)	e.g. starting, being destroyed
Verb + ed/en (past participle)	e.g. taken, put forward
To + verb (infinitive, dictionary form)	e.g. to provide, to support

V-ing clauses are active; they add information about what the head noun does/is doing.

BP's plans to drill in the pristine marine reserve of the Great Australian Bight will come under fresh scrutiny, as senators seek to reinstate *a lapsed inquiry examining the company's proposal*. (meaning: the inquiry examines the company's proposal or an inquiry that examines the company's proposal)

The 15-person salvage team now working aboard the rig have set up emergency generators, pumps and internal cameras. (meaning: the 15-person salvage team is working aboard the rig now or the 15-person salvage team *that is working* aboard the rig now)

A V-ing clause is sometimes introduced by a preposition.

The Oil Sands Division is responsible for the overall management of the Crown's oil sands interests, issuing oil sands agreements, facilitating development and collecting royalties, with the objective of developing the oil sands industry in a manner that provides a fair return to Albertans, the owners of the resource.

The biggest advantage of drilling in Alaska is economic.

Past participles have a passive meaning.

Compressors needed to provide buoyancy for the refloat are expected to arrive on the island by ferry on Friday. (meaning: compressors *are needed* to provide buoyancy for the refloat or compressors *that are needed* to provide buoyancy for the refloat)

Disclosure of the suspected leak added further urgency to questions from the Scottish government and conservationists about the decision to tow the vessel during a storm, and the UK government decision to scrap an emergency tug based in Stornoway on Lewis. (meaning: the tug *is based* in Stornoway on Lewis or the tug *that is based* in Stornoway on Lewis)

The risks posed to the marine environment by oil installations were likely to increase. (meaning: risks are being posed to the marine environment by oil installations or the risks *that are being posed* to the marine environment by oil installations)

Infinitives

Hugh Shaw, the secretary of state's representative for maritime salvage and intervention, told BBC Alba that any attempt to refloat the rig was still weeks away.

The government's attitude has enthusiastically supported startups, job-makers and innovators and the need to build a British culture of entrepreneurialism to rival America's.

Defining and non-defining relative clauses and non-finite clauses functioning as Qualifiers are not operating at clause rank. They have been **embedded** in the nominal group, which is a constituent of a clause.

Exercise 1.1

- a. The underlined nouns in this paragraph are head nouns. Identify the pre-modifiers and post-modifiers by completing the table.

Motor Corp has said it is recalling 1.43m hybrid Prius and Lexus CT200h cars worldwide because of a possible airbag inflator defect. The recall covers 2010-2012 vehicles with air bag inflators that could have a small crack in a weld, which could lead to the separation of the inflator chambers. The air bag could partially inflate and the inflator could enter the vehicle interior, increasing the risk of injury, Toyota said.

Pre-modifier	Head noun	Post-modifier
	cars	
	defect	
	vehicles	
	inflators	
	bag	
	interior	
	risk	

- b. Identify the functions of the pre-modification by completing the table.

Deictic	Numerative	Epithet	Classifier	Head noun
				cars
				defect
				vehicles
				inflators
				bag
				interior
				risk

- c. Write the post-modifiers and identify the type of qualifier they are. Circle whether the information in the post-modifier is essential or non-essential.

- *vehicles*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- *inflators*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- *risk*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- d. The underlined nouns in this paragraph are head nouns. Identify the pre-modifiers and post-modifiers by completing the table.

The Komi Republic in northern Russia is renowned for its many lakes, but sites contaminated by oil are almost just as easy to find in the Usinsk oilfields. There are pumps dripping oil and huge ponds of black sludge. The dying trees and undergrowth are a likely sign of an underground pipeline leak. Yet, these spills are relatively small and rarely garner media attention.

But they add up quickly, threatening fish stocks, pasture land and drinking water. According to the natural resources and environment minister, Sergei Donskoi, 1.5m tonnes of oil are spilled in Russia each year. That's more than twice the amount released by the record-breaking Deepwater Horizon oil spill in the Gulf of Mexico in 2010.

Pre-modifier	Head noun	Post-modifier
	<u>lakes</u>	
	<u>sites</u>	
	<u>pumps</u>	
	<u>sign</u>	
	<u>ponds</u>	
	<u>spills</u>	
	<u>stocks</u>	
	<u>land</u>	
	<u>water</u>	
	<u>minister</u>	
	<u>oil</u>	

e. Identify the functions of the pre-modification by completing the table.

Deictic	Numerative	Epithet	Classifier	Head noun
				lakes
				sites
				pumps
				sign
				ponds
				spills
				stocks
				land
				water
				minister
				oil

f. Write the post-modifiers and circle the type of qualifier they are. Circle whether the information in the post-modifier is essential or non-essential.

- *sites*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- *pumps*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- *ponds*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

- *sign*

prepositional phrase	non-defining relative clause	essential information
defining relative clause	non-finite clause	non-essential information

Exercise 1.2

Which of the following sentences contain a mistake in the relative clause? Correct the ones that are wrong.

1. The first campaign shows a student which is writing on a blackboard full of formulas and geometric figures that bring to mind something difficult to solve.
2. The slogan brings to mind the idea of loved ones (parents, boyfriends, etc.) whom go to the end of the world to make the other happy or safe.
3. In this group of advertisements, the bubbles become molecules that represent the scientific methods ExxonMobil uses to make the planet a better place.
4. These three advertisements whose we will begin to analyse start the whole idea of the campaign.
5. The second campaign is the one who has a lot of bubbles in all four advertisements.
6. The first image we will discuss is the image of a head with a yellow brain, that suggests an idea.
7. In the same year there is another advertisement which has the Sydney opera house on the left side and surfboards on the right side.
8. There is an advertisement where we can see a close and horizontal angle picture of a meeting by the workers of Chevron, that symbolizes team work.
9. Along with the message, that is in the form of a straw (an unlikely place), we see the symbolic meaning of this advertisement is to be aware of solutions in every place you are, because they can be everywhere.
10. The top of the page shows us a jeep in a desert land which symbolises adventure.
11. The ad campaign suggests that Shell, that was growing and expanding at the time, wanted to show how powerful they were.

PRESENTING / General participants vs PRESUMED / Specific participants

NOUN			DETERMINER		
			a / an	∅	the
N(countable)	<i>singular</i>	oil company	√	x	√
	<i>plural</i>	oil companies	x	√	√
N (uncountable)		petroleum	x	√	√
				PRESENTING / GENERAL PARTICIPANTS	PRESUMED / SPECIFIC PARTICIPANTS

Presenting participants are participants that are being presented for the first time. General participants do not specify a particular one. Any one of what is being talked about is implied. It is possible to add "in general" afterwards and not change the meaning.

For the first time, **a Spanish oil company** is to explore **offshore oil blocks** in Equatorial Guinea. [Presenting participant]

Just as **governments** like the US and the UK need **oil companies** to secure **fuel** for their global war-making capacity, so the oil companies need their governments' military power to secure control over **global oilfields** and **transportation routes**. [General participants]

Oil provides nearly all the energy for **transportation (cars, trucks, buses, airplanes, and many railroad engines)**. [General participants]

Petroleum is called **a fossil fuel** because it was made from the remains of **plants and animals**. [Presenting/ presenting/ general / general participants]

Presumed and specific participants are information that the reader can retrieve from the context. The context may be the context of culture (e.g. the sun), the context of situation (e.g. Put the dog outside), or the context of the preceding or following text. In other words, it is already known or immediately knowable by the reader.

In *Iraq*, blood is cheaper than oil. Over a million Iraqis have died in the last 6 years since **the oil tycoon** George Bush Junior invaded **the country** in an imperial military exercise designed to balkanize Babylon and to confiscate its natural resources.

Just as governments like the US and the UK need *oil companies* to secure fuel for their global war-making capacity, so **the oil companies** need their governments' military power to secure control over global oilfields and transportation routes.

Shell, **the oil company** that recently trumpeted its commitment to a low carbon future by signing a pre-Bali conference communiqué, has quietly sold off most of its solar business.

More than 80 percent of **the petroleum** that the refinery processes comes via pipeline from Saudi Arabia.

Exercise 1.3

PRESENTING / GENERAL PARTICIPANTS VS PRESUMED / SPECIFIC PARTICIPANTS

Complete the mission statement with *a*, *an*, *Ø*, or *the*.

(1)..... OPEC's mission is to coordinate and unify (2) petroleum policies of (3) Member Countries and ensure (4) stabilization of (5)oil markets in order to secure (6) efficient, economic and regular supply of (7) petroleum to (8)consumers, (9) steady income to (10) producers and (11) fair return on (12) capital to those investing in (13) petroleum industry.

Source: www.opec.org

THE CLAUSE AND THE SENTENCE

Clauses

In extended written discourse such as academic writing, the shortest sentence will be made up of an **independent clause**. In an independent clause the verbal group is always **finite**. A finite verbal group has been conjugated into a verb tense (e.g. past, present, present perfect, future, etc.)

Artificial Intelligence (AI)	has progressed.
Subject	Verbal group
Independent clause	

Microsoft	deleted	the teen girl AI robot.
Subject	Verbal group	Complement
Independent clause		

Microsoft	introduced	an innocent Artificial Intelligence chat robot	to Twitter.
Subject	Verbal group	Complement	Adjunct (prepositional phrase)
Independent clause			

You **cannot** joint 2 independent clauses with a comma (,). This **ungrammatical** form is called a run-on sentence.

e.g *Microsoft introduced an innocent chat robot to Twitter, it deleted it the next day.

Microsoft introduced an innocent chat robot to Twitter	,	it deleted it the next day.
Independent clause	,	Independent clause
RUN-ON SENTENCE - WRONG		

Two, or more, independent clauses can be joined by a **co-ordinate conjunction**: *for, and, nor, but, or, yet, so*. A comma (,) typically precedes the co-ordinate conjunction.

Microsoft introduced an innocent chat robot to Twitter	, but	it deleted it the next day.
Independent clause	, co-ord. conj.	Independent clause

The innocent chat robot transformed into an evil Hitler-loving robot	, so	Microsoft deleted it.
Independent clause	, co-ord. conj.	Independent clause

An independent clause can be extended by a **dependent clause**. **A dependent clause cannot form a sentence on its own.**

*When Tay turned into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.
--

Dependent clause

NOT A COMPLETE SENTENCE - WRONG
--

A dependent clause can be **finite** or **non-finite**. A finite dependent clause is introduced by a conjunction such as *when, because, if*, etc.

Microsoft had to delete an innocent AI chat robot on Twitter
--

Independent clause

<i>after</i> it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.

Conjunction + finite dependent clause
--

When the dependent clause precedes the independent clause, the two clauses are separated by a comma (,)

<i>After</i> the innocent AI chat robot transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot,

Conjunction + finite dependent clause
--

Microsoft deleted it from Twitter.

Independent clause

An independent clause can be extended by a **non-finite** dependent clause, which is typically set aside in commas (,). In a non-finite clause the verb appears in the form of the infinitive (to *verb*), the present participle (*verb-ing*) or the past participle (*verb-ed/en*).

Tay, the robot, seems to be bashfully self-aware,

Independent clause,

occasionally asking if she is being 'creepy' or 'super weird'.

Non-finite dependent clause

Developers at Microsoft created 'Tay', an AI modelled to speak 'like a teen girl'

Independent clause

in order to improve the customer service on their voice recognition software.
--

Non-finite dependent clause

When extending an independent clause with a non-finite (V-ing) clause, the elided subject of the non-finite clause should be the same as the subject of the independent clause. For example, a) is possible, but b) is not.

- a) Tay seems to be bashfully self-aware, occasionally **asking** if she is being 'creepy' or 'super weird'.

Subject		∅ Subject	Non-finite verb
Tay	seems to be bashfully self-aware,		occasionally asking if she is being 'creepy' or 'super weird'.
Independent clause		Non-finite dependent clause	
		[Tay occasionally asks if she is being 'creepy' or 'super weird'.]	

- b) *After 24 hours, Tay was making sexist, racist and offensive comments, **making up** almost half of her responses.

Subject		∅ Subject	Non-finite verb
Tay	was making sexist, racist and offensive comments,		making up almost half of her responses.
		[Sexist, racist and offensive comments make up almost half of her responses]	

A rewrite of b) would reformulate the non-finite clause as a non-defining (finite) relative clause (c), or as a separate independent clause (finite) (d & e).

- c) After 24 hours, Tay was making sexist, racist and offensive comments, **which made up** almost half of her responses.
 d) After 24 hours, Tay was making sexist, racist and offensive comments, **and these comments made up** almost half of her responses
 e) After 24 hours, Tay was making sexist, racist and offensive comments. **Such comments made up** almost half of her responses.

A non-finite dependent clause can also be introduced by a **preposition**. In this case, the verb is always in the *V-ing* form and there is usually no comma (,).

Twitter users were able to transform Tay into an evil Hitler-loving robot	by exposing her to offensive language.
Independent clause	Prep. + non-finite dependent clause

An independent clause can be extended by a **non-defining relative clause**. In this case the function of the non-defining relative clause is to comment on, evaluate or interpret the idea expressed by the preceding clause. The non-defining relative clause is introduced by *, which*.

The innocent chat robot transformed into an evil Hitler-loving robot in less than 24 hours	, which surprised Microsoft.
Independent clause	Non-defining dependent relative clause

(meaning that the innocent chat robot transformed into an evil Hitler-loving robot in less than 24 hours surprised Microsoft)

Exercise 2.1

Identify the clauses in the article: independent clause, dependent clause (finite, non-finite clause, or non-defining relative clause) by completing the table. In some of the clauses the subject and verb have been elided (ellipsis). Circle the **co-ordinate conjunctions**. The headline has been done as an example.

Microsoft deleted 'teen girl' AI after it became a Hitler-loving sex robot within 24 hours

Helena Horton

The day after Microsoft introduced an innocent Artificial Intelligence chat robot to Twitter, it has had to delete it after it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.

Developers at Microsoft created 'Tay', an AI modelled to speak 'like a teen girl' in order to improve the customer service on their voice recognition software. They marketed her as 'The AI with zero chill' - and that she certainly is.

To chat with Tay, you can tweet or DM her by finding @tayandyou on Twitter, or add her as a contact on Kik or GroupMe.

She uses millennial slang and knows about Taylor Swift, Miley Cyrus and Kanye West, and seems to be bashfully self-aware, occasionally asking if she is being 'creepy' or 'super weird'.

The Daily Telegraph, 24 March 2016

Independent clause	Microsoft deleted 'teen girl' AI
Dependent cl. (finite)	after it became a Hitler-loving sex robot within 24 hours

Exercise 2.2

The relative clauses in the following sentences interpret the idea stated in the preceding clause. Which of the sentences contain a mistake? Correct the ones that are wrong.

1. Chevron shows us a woman smiling that suggests that they are a trust-worthy company.
2. This company uses the image of a brain lighting up with a black background, a kind of brain enlightenment which suggests that they have plenty of good ideas.
3. The land rover in the desert symbolises adventure and exploration, what suggests that Total is committed to finding new sources of oil in far away places.
4. The advertisement was published on recycled paper what can symbolize care for the environment.
5. Unlike the other picture, whose colors were warm and strong, this one is very cold what, in addition to the greatness of the factory; it transmits a very impersonal atmosphere.
6. The company image has changed over time which can be a great way to influence people by showing the gradual development of their message and values.
7. In the ad, a woman is looking into a microscope, which suggests that the company carries out research.
8. The fact that oil has become a scarce resource has lifted its price which stimulates the production of substitutes such as hybrid petrol electric vehicles

Further exercises on what a clause is can be found on <https://www.englishgrammar101.com/module-9/clauses/lesson-1/what-is-a-clause>

Exercise 2.3

Identify the run-on sentences and correct them.

- a. In mid-2006, the price of crude oil reached a nominal price of \$79, in October 2007, the price of crude oil reached a peak, setting a new record price of \$90.
- b. From the \$38 per barrel in 2004, the price started to increase, it soared to \$51 in March 2005 and then it registered a small fall to \$48 in May 2005.
- c. As we know, oil is an important commodity in modern societies and modern economies, OPEC realized that they produced most of the world's oil so they raised the price for which this oil was sold.
- d. From 1973 to 1974 the price of oil tripled and with that came the oil price shocks, this situation led to some effects on the world's economy.
- e. Starting at \$30 per barrel, the price of crude oil quickly rose, reaching \$45 per barrel in September 2004, this change can be explained by the Iraq war.
- f. Those oil shocks were very bad for the world's economy because when OPEC raised the price of oil, they also raised their buying power and reduced the buying power of oil-importing countries such as Japan and Germany, and with that their sales revenues increased abruptly between 1973 and 1980.
- g. That decision tripled the price of oil from \$2.9 per barrel to \$9 per barrel, later on, in 1978-1980, the oil prices reached \$30 per barrel.
- h. Households made changes as well, people started driving smaller cars, switched to central gas heating and even moved closer to the cities or their work place.
- i. This cut was mostly because of the Iraq war, the growth of Asia and the dollar, which became weaker, all this made a big decrease in the price of oil.

Exercise 2.4

Rewrite the clauses as one sentence. Where possible use a non-finite clause.

1. During the year, smaller cars scaled the US market. They replaced many of the traditional family cars.
2. Petrol/diesel cars made up 95.29% of the market, followed by hybrid-electric vehicles with 4.41%. Plug-in hybrid electric and electric car sales together accounted for less than 1%.
3. Between 2011 and 2015, US passenger car sales grew from just over 6 million units to about 7.5 million. They experienced a small dip in 2013.
4. Although in 2015 petrol car sales hinted at stagnation, crude oil from shale prompted a revival in these cars. This increased the sale of petrol cars.
5. Hybrid electric car sales almost doubled between 2011 and 2013. But they dropped to 384,404 units in 2015.
6. In the US, cars powered by petrol or diesel are the most popular. In 2011 they made up over 95% of passenger car sales.

Exercise 2.5

Read the text below. Some of the lines are correct (examples 2. & 3.), and some of the lines have a mistake in the sentence structure (e.g. punctuation (ex.1.) ,run-on sentence (ex.4) or wrong verb form). If a line is correct, tick (✓) it. If there is a mistake in the sentence structure, underline the mistake and write the correction at the end of the line. For example, you may need to add a conjunction or change a verb from finite to non-finite or vice versa.

1.	As technology and artificial intelligence (A.I.) <u>advances jobs</u> in	<u>advances, jobs</u>
2.	banks and offices are set to be replaced by automation, according✓.....
3.	to industry experts. The clearest sign of how far A.I. has come was✓.....
4.	earlier this <u>week, Google's</u> AlphaGo program won four out of five	<u>week, when Google's</u>
5.	matches of the Chinese board game Go against champion Lee	.....
6.	Sedol. AlphaGo's victory was seen as a major milestone for A.I. due	.....
7.	to the complexity of the board game. But AlphaGo is only the tip of	.....
8.	the iceberg for what A.I. can do.	.....
9.	According to some scenarios, A.I. will quickly replace many forms	.....
10.	of complex knowledge work ranging from lawyers to librarians,	.....
11.	professors to policy analysts. For instance, there are already robo-	.....
12.	journalists which scour news feeds and then automatically	.....
13.	generating stories. This is a serious problem for developed	.....
14.	economies where a large proportion of well-paid jobs being forms	.....
15.	of knowledge work.	.....
16.	Another occupation under threat from automation is the bank	.....
17.	teller. In the future, ATMs will be able to perform most of their	.....
18.	tasks, such as opening accounts and processing loans, an ATM can	.....
19.	do approximately 90 percent of what the human being can do.	.....
20.	ATMs will be able to perform bank teller functions at a fraction of	.....
21.	the cost compared to human employees, they will be able to check	.....
22.	and process any paperwork. The new machines will be able to scan	.....
23.	documents. Someone can put his passport on a machine, the	.....
24.	machine will identify him, a person can literally do anything online	.....
25.	that he would have been able to do in front of a human being.	.....

<http://www.cnbc.com/2016/03/17/man-vs-machine-ai-could-put-you-out-of-a-job.html> (adapted)

Linking ideas with conjunctions

Conjunctions help the reader follow the semantic relations between clauses or sentences. Conjunctions express logical semantic relations such as *time*, *cause*, *condition*, *contrast* or *addition*.

Time

- Microsoft had to delete an innocent AI chat robot from Twitter **after** it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.
- The robot started off as an innocent, teenaged girl. **Then** it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.

Cause

- Microsoft had to delete an innocent AI chat robot from Twitter **because** it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.
- The robot transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot. **As a result**, Microsoft deleted it from Twitter.

Alternative

- To chat with Tay, you can tweet or DM her by finding @tayandyou on Twitter, **or** add her as a contact on Kik or GroupMe.

Punctuation

When a dependent clause precedes the independent clause, they are separated by a comma (,).

- **When** Microsoft introduced an innocent Artificial Intelligence chat robot to Twitter on 23 March 2016, they didn't expect to have to delete her the next day.

When a dependent finite clause follows the independent clause, there is usually no comma (,).

- Microsoft had to delete an innocent AI chat robot from Twitter **because** it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.

When two independent clauses are linked by a co-ordinate conjunction (*and*, *or*, *but*, *for*), they are separated by a comma (,).

- Tay seems like yet another example of female-voiced AI servitude, **but** *this time* she's turned into a sex slave thanks to the people using her on Twitter.

When two independent clauses are linked by the conjunctions *moreover*, *indeed*, *however*, *therefore*, *thus*, *consequently*, *nonetheless*, and *nevertheless*, a semicolon (;) precedes the conjunction, and a comma (,) follows it.

- Tay seems like yet another example of female-voiced AI servitude; **however**, *this time* she's turned into a sex slave thanks to the people using her on Twitter.

Conjunctions

Meaning	Linking independent clauses in one sentence	Linking dependent to independent clauses	Links between sentences
clarification	-	-	in other words / in brief / in short / that is to say
	Dedicated trolls were able to dupe the impressionable teenage robot into spewing hate by means of a simple call-and-response circuit that let users essentially put words in Tay's mouth, which she then learned and absorbed into other organic responses. In other words , Tay was teachable.		
exemplification	-	-	To illustrate this / for example / for instance
	According to many reports, Tay was easily manipulated through simple "repeat after me" messages. For instance , if you tweeted Tay and said "Repeat after me: Hitler was right I hate the jews" (one of Tay's milder imprecations), that's what Tay would tweet at some point.		
specification			To be more precise / actually / as a matter of fact / in fact
	Artificial intelligence isn't a new concept. In fact its storytelling roots go back to Greek antiquity.		
addition	and both...and / either...or / neither...nor / not only...but also moreover	as well as	In addition / furthermore / moreover / also
	Tay uses millennial slang, and she knows about Taylor Swift, Miley Cyrus and Kanye West.		
	Tay uses millennial slang; moreover , she knows about Taylor Swift, Miley Cyrus and Kanye West.		
	As well as using millennial slang, Tay knows about Taylor Swift, Miley Cyrus and Kanye West. Tay uses millennial slang. Furthermore , she knows about Taylor Swift, Miley Cyrus and Kanye West.		
alternative	or		Alternatively / on the other hand / instead
	To chat with Tay, you can tweet or DM her by finding @tayandyou on Twitter, or you can add her as a contact on Kik or GroupMe. Deep Blue does not attempt to mimic the thought of a human chess player. Instead , it capitalizes on the strengths of the computer by examining an extremely large number of moves, more moves than any human player could possibly examine.		
time	then	when / while / after / before / as / as soon as / whenever / until / till / once / by the time	At the same time / meanwhile / in the meantime / finally / previously / then / afterwards / after that / thereupon / subsequently / earlier / at first / secondly / up to now / next / beforehand
	On 23 March 2016 Microsoft introduced an innocent Artificial Intelligence chat robot to Twitter, then it deleted it. On 23 March 2016 Microsoft introduced an innocent Artificial Intelligence chat robot to Twitter. Subsequently , they deleted it. The day after Microsoft introduced an innocent Artificial Intelligence chat robot to Twitter, it had to delete it after it transformed into an evil Hitler-loving, incestual sex-promoting, 'Bush did 9/11'-proclaiming robot.		

Meaning	Linking independent clauses in one sentence	Linking dependent to independent clause	Links between sentences
cause / consequence	for / so	because / since / as / given that so that	To this end / in conclusion / in this way / consequently / therefore / as a result / accordingly / thus / for this reason / because of this
	<p>consequently / therefore / thus</p> <p>At the present moment in time, Tay has gone offline, for she is 'tired'.</p> <p>At the present moment in time, Tay is 'tired'; consequently, she has gone offline.</p> <p>At the present moment in time, Tay has gone offline because she is 'tired'.</p> <p>At the present moment in time, Tay is 'tired', so she has gone offline.</p> <p>At the present moment in time, Tay is 'tired'. For this reason she has gone offline.</p> <p>At the present moment in time, Tay is 'tired'. As a result she has gone offline.</p>		
condition		if / provided that / as long as / only if / unless (= if not)	otherwise (if not)
	<p>If you introduce an innocent, 'young teen girl' AI to the jokers and weirdos on Twitter, you can expect her to learn extremist offensive language and ideas.</p> <p>As long as Tay talks to jokers and weirdos on Twitter, you can expect her to learn extremist offensive language and ideas.</p> <p>Tay wouldn't have tweeted racist comments unless she had learnt them from other people.</p> <p>Tay interacted with jokers and weirdos on Twitter. Otherwise, she wouldn't have learned such offensive language.</p>		
concession		although / though	nevertheless / notwithstanding / nonetheless /in spite of this /
	<p>Although Microsoft had prepared for many types of abuses of the system, they made a critical oversight for the specific attack on Tay.</p> <p>Microsoft had prepared for many types of abuses of the system. Notwithstanding, they made a critical oversight for the specific attack on Tay.</p>		
comparison (similarity /contrast)	but / except / yet	although / while /whereas	But /equally / on the other hand / however / likewise / instead / in the same way / similarly / on the contrary / by contrast / conversely / yet / notwithstanding
	however, nevertheless, nonetheless	as if/ as though	<p>Tay [Microsoft's teen-girl chatbot] seems like yet another example of female-voiced AI servitude, except this time she's turned into a sex slave thanks to the people using her on Twitter.</p> <p>Tay seems like yet another example of female-voiced AI servitude; however, this time she's turned into a sex slave thanks to the people using her on Twitter.</p> <p>While Tay seems like yet another example of female-voiced AI servitude, <i>this time</i> she's turned into a sex slave thanks to the people using her on Twitter.</p> <p>Tay seems like yet another example of female-voiced AI servitude. However, / Notwithstanding, this time she's turned into a sex slave thanks to the people using her on Twitter.</p>

Exercise 2.6

Circle the best conjunction to link the ideas. Identify the kind of relation (e.g. cause/effect; purpose; contrast; addition; concession; etc.)

AI (artificial intelligence) isn't a new concept; its storytelling roots go as far back as Greek antiquity. *However/Although/In other words*, it was less than a century ago that the technological revolution took off *so/but/and* AI went from fiction to very plausible reality. Alan Turing, British mathematician and WWII code-breaker, is widely credited as being one of the first people to come up with the idea of machines that think in 1950. He even created the Turing test, which is still used today, as a benchmark to determine a machine's ability to "think" like a human. *But/At first/Though* his ideas were ridiculed at the time, they set the wheels in motion, *and/because/in fact* the term "artificial intelligence" entered popular awareness in the mid- 1950s *after/because/since* Turing died.

Exercise 2.7

The following paragraph includes run-on sentences. Rewrite it to correct the run-on sentences. It is possible to improve the logical flow by adding or changing conjunctions.

Modern technology is simply an advancement of old technology, the impact of technology in modern life is unmeasurable, we use technology in different ways and sometimes the way we implement various technologies ends up harming our lives or the society we leave [*sic* live] in. What we call modern technology is technically not so new in most cases. For example, mobile phone technology has evolved with [the] years, nowadays we use smartphones which have been an advancement of an ordinary mobile phone.

Source: <http://www.useoftechnology.com/modern-technology-advantages-disadvantages/>

Exercise 2.8

The following text includes run on sentences. It also has gaps where a conjunction is missing. Correct the run-on sentences and insert conjunctions where necessary to improve the flow of information.

Artificial intelligence (AI) might seem like the realm of science fiction, you might be surprised to find out that you're already using it. AI has a huge effect on your life, whether you're aware of it or not, its influence is likely to grow in the coming years. Here is an example of artificial intelligence that you're already using every day.

Virtual Personal Assistants

Siri, Google Now, and Cortana are all intelligent digital personal assistants on various platforms (iOS, Android, and Windows Mobile). For example, they help find useful information you ask for it using your voice, you can say "Where's the nearest Chinese restaurant?", "What's on my schedule today?", "Remind me to call Jerry at eight o'clock," the assistant will respond by finding information, relaying information from your phone, or sending commands to other apps.

AI is important in these apps, they collect information on your requests and use that information to better recognize your speech and serve you results that are tailored to your preferences. Microsoft says that Cortana "continually learns about its user", that it will eventually develop the ability to anticipate users' needs. Virtual personal assistants process a huge amount of data from a variety of sources to learn about users and be more effective in helping them organize and track their information.

<http://beebom.com/examples-of-artificial-intelligence/> (adapted)

COHERENCE

Information development: Theme and Rheme

Writing coherent paragraphs involves linking sentences within paragraphs and making links between paragraphs. Coherence develops through two systems of language: Theme and Reference. In English, the starting point of a clause and therefore a sentence is called the **Theme**. The Theme gives a focus or establishes an orientation for the reader.

The oil industry affects our everyday life in many ways.

When the price of oil rises, after a short delay the price of petrol rises too.

Types of Themes

1. Nominal group

Fossil fuels are the basis of the petrochemical industries.

The Chernobyl disaster occurred in 1986.

2. Prepositional phrase or adverbial group – may give background information

In the late 1930s and the 1940s the octane rating of fuel became important as the military sought higher output for aircraft engines.

Currently, many countries set limits on gasoline aromatics in general, benzene in particular, and olefin (alkene) content.

In Brazil, the Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) requires gasoline for automobile use to have from 18 to 25% of ethanol added to its composition
Verb in commands

3. Verbs in commands

Select the Print Monitor icon in the system folder.

Choose an alternative method.

4. Multiples themes
 - a. With conjunctions – to link clauses/sentences

Subsequently, the next strategy is to regulate the industry.

However, this would involve a great deal of government finance.

When the price of oil rises, after a short delay the price of petrol rises too.

- b. With attitudinal adjuncts – to indicate stance

Clearly, the solution is not straightforward.

Unfortunately, no funds are yet available.

Everything else in the clause that is not Theme is called the Rheme. The Rheme introduces information that is **NEW** to the reader or develops the Theme. The selection of Theme contributes to the development of ideas within a paragraph.

Theme	Rheme
In North America <i>while</i> petrol	the term gasoline is often shortened in colloquial usage to gas, is the common name in the UK, Republic of Ireland, Australia and in most of the other Commonwealth countries.
Under normal conditions	its physical state is a liquid, unlike liquified petroleum gas or natural gas.

Patterns of thematic development

1. Constant or parallel Theme pattern

Theme	Rheme
Gasoline or petrol	is a transparent, petroleum-derived oil that is used primarily as a fuel in internal combustion engines.
It	consists mostly of organic compounds obtained by the fractional distillation of petroleum, enhanced with a variety of additives.
Some gasolines	also contain ethanol as an alternative fuel..

2. Zig-zag pattern

Theme	Rheme
Gasoline,	as delivered at the pump, also contains additives to reduce internal engine carbon buildups, improve combustion, and to allow easier starting in cold climates.
High levels of detergent	can be found in Top Tier Detergent Gasolines.
These gasolines	exceed the U.S. EPA's minimum requirement for detergent content.

3. Sub-point or fan pattern

Theme	Rheme
Octane rating in gasoline	is measured relative to a mixture of 2,2,4-trimethylpentane (an isomer of octane) and n-heptane.
There so a fuel	are different conventions for expressing octane ratings, may have several different octane ratings based on the measure used.
Research octane number (RON) for commercially-available gasoline	varies by country .
In Finland, Sweden and Norway,	95 RON is the standard for regular unleaded gasoline and 98 RON is also available as a more expensive option.
In the UK,	ordinary regular unleaded gasoline is 91 RON (not commonly available), premium unleaded gasoline is always 95 RON, and super unleaded is usually 97-98 RON.
However, both Shell and BP	produce fuel at 102 RON for cars with high-performance engines,
and the supermarket chain Tesco	began in 2006 to sell super unleaded gasoline rated at 99 RON.
In the US,	octane ratings in unleaded fuels can vary between 86 and 87 AKI (91-92 RON) for regular, through 89-90 AKI (94-95 RON) for mid-grade (European premium), up to 90-94 AKI (95-99 RON) for premium (European super).

In any paragraph you may find one or more patterns. Note how in the example for the fan pattern, deviations from the pattern are marked by a multiple theme with the conjunctions *However* and *and*.

Exercise 3.1

Box the Theme in each of the following sentences, and, if possible, link it to its source.

The oil and gas industry is usually divided into three major sectors: upstream, midstream and downstream. The upstream oil sector is also commonly known as the *exploration and production (E&P) sector*. The upstream sector includes the searching for potential underground or underwater crude oil and natural gas fields, drilling of exploratory wells, and subsequently drilling and operating the wells that recover and bring the crude oil and/or raw natural gas to the surface. With the development of methods for extracting methane from coal seams, there has been a significant shift toward including unconventional gas as a part of the upstream sector, and corresponding developments in liquified natural gas (LNG) processing and transport.

The midstream sector involves the transportation (by pipeline, rail, barge, or truck), storage, and wholesale marketing of crude or refined petroleum products. Pipelines and other transport systems can be used to move crude oil from production sites to refineries and deliver the various refined products to downstream distributors. Natural gas pipeline networks aggregate gas from natural gas purification plants and deliver it to downstream customers, such as local utilities. The midstream operations are often taken to include some elements of the upstream and downstream sectors. For example, the midstream sector may include natural gas processing plants which purify the raw natural gas as well as removing and producing elemental sulfur and natural gas liquids (NGL) as finished end-products.

The downstream sector commonly refers to the refining of petroleum crude oil and the processing and purifying of raw natural gas, as well as the marketing and distribution of products derived from crude oil and natural gas. The downstream sector touches consumers through products such as gasoline or petrol, kerosene, jet fuel, diesel oil, heating oil, fuel oils, lubricants, waxes, asphalt, natural gas, and liquified petroleum gas (LPG) as well as hundreds of petrochemicals. Midstream operations are often included in the downstream category and considered to be a part of the downstream sector.

Source: *Wikipedia*

Exercise 3.2

Complete each sentence with information that would be logical in light of the conjunction or choice of Theme.

- a. The price of petrol has risen significantly recently. Furthermore ...
- b. The price of petrol has risen significantly recently. This rise...
- c. The price of petrol has risen significantly recently. However, ...
- d. The price of petrol has risen significantly recently. As a result, ...
- e. It is important for companies to project a positive image in their advertising campaigns. Although ...
- f. It is important for companies to project a positive image in their advertising campaigns. Despite ...
- g. It is important for companies to project a positive image in their advertising campaigns. In addition ...
- h. It is important for companies to project a positive image in their advertising campaigns. In other words, ...
- i. It is important for companies to project a positive image in their advertising campaigns. This strategy ...
- j. It is important for companies to project a positive image in their advertising campaigns. A positive image ...

Reference

Reference items enable us to track a participant (e.g. a person, place, thing, entity, or idea) through the text. Once a participant has been presented, it is usually identified with presuming reference (see presenting/presumed participants). Presumed participants can be identified in different ways. The following examples are taken from <http://news.bbc.co.uk/2/mobile/business/904748.stm>. The referent is in italics, and the presuming reference is in bold.

1. Definite determiner

the

Big movements in *oil price* have significant ramifications around the world. But just what makes **the price** move and how do the oil markets work?

2. Personal pronouns & possessives

I / me / my / mine / you / your / yours / he / him / his / she / her / hers / it / its / we / us / our / ours / they / them / their / theirs

Crude oil comes in many varieties and qualities, depending on **its** specific gravity and sulphur content which depend on where **it** has been pumped from.

Futures contracts are only traded on regulated exchanges and are settled (paid) daily, based on **their** current value in the marketplace.

3. Demonstratives

this / that / these / those / here / there / now / then

If no other information is given, an oil price appearing in UK and other European media reports will probably refer to the price of *a barrel of Brent blend crude oil from the North Sea sold at London's International Petroleum Exchange (IPE)*. **This** would commonly be in a futures contract for delivery in the following month.

4. A participant can be presumed through comparison with a previous participant.

another / other / more

Because there are so many different varieties and grades of crude oil, buyers and sellers have found it easier to refer to a limited number of *reference, or benchmark, crude oils*. **Other varieties** are then priced at a discount or premium, according to their quality. (Other varieties of crude oil that are not reference or benchmark crude oils)

In the Gulf, Dubai crude is used as a benchmark to price sales of other regional crudes into Asia. (Other regional crudes that are not Dubai crude)

5. Presuming reference often combine with reference nouns. Reference nouns are lexically empty, i.e. their meaning depends on the reader recovering information elsewhere in the text to understand what is meant. They are typically a more generalised category of the entity or an abstract noun.

e.g. process / problem / idea / program / advantage / diversity

If no other information is given, an oil price appearing in UK and other European media reports will probably refer to the price of a barrel of Brent blend crude oil from the North Sea sold at London's International Petroleum Exchange (IPE). This would commonly be in a *futures contract* for delivery in the following month. In **this type of transaction**, the buyer agrees to take delivery and the seller agrees to provide a fixed amount of oil at a pre-arranged price at a specified location. (more generalised category)

Opec controls the amount of oil it pumps into the market place. **This practice** enables it to keep the basket price within a predetermined range. [adapted] (lexically empty noun – Opec's practice of controlling the amount of oil it pumps into the market place)

Exercise 3.3

In the paragraphs the referring participants are in bold. Link them back their referents.

1. In its World Energy Outlook 2006, the IEA projected an increase in the share of the world's fertile land used to grow plants for liquid biofuel production from 1% in 2004 to around 4% in 2030, assuming favourable government policies and reasonable technical development. Using conventional biofuel technologies, **this land use** would allow 5% of transport fuel demand to be met. If second-generation biofuel technologies were available, **this** could rise to 10%. **This** illustrates that biofuels can only be expected to displace fossil fuels for transport to a very limited extent. Nevertheless, **they** have a significant effect on global agriculture and agricultural markets because of the large volumes of feedstocks and land areas needed for **their** production.

<http://www.greenfacts.org/en/biofuels/1-2/1-definition.htm>

2. The Bioenergy Technologies Office's (BETO's) Algae Program is carrying out a long-term applied research and development (R&D) strategy to increase the yields and lower the costs of algal biofuels by working with partners to develop new technologies, to integrate technologies at commercially-relevant scales, and conduct crosscutting analyses to understand the potential and challenges of an algal biofuel industry that is capable of annually producing billions of gallons of renewable diesel, gasoline, and jet fuels. **These activities** are integrated with BETO's longstanding approach to accelerate the commercialization of lignocellulosic biofuels.

<http://energy.gov/eere/bioenergy/algal-biofuels>

3. Biofuels offer many benefits. By reducing demand for petroleum, biofuels could make energy supply more secure. **Their** use would also reduce import bills for energy-deficient countries and offer improved balance of trade and balance of payments. All **these developments** would unfreeze scarce resources for other pressing needs.

<http://www.scidev.net/global/capacity-building/opinion/biofuels-benefits-and-risks-for-developing-countr.html>

Substitution and ellipsis

Participants and processes (verbs or verb + complement) can be substituted (replaced) or elided (left out). In both cases, a more specific reference is considered superfluous.

	Substitution	Ellipsis
participant	one / ones	∅
process	do / do so	∅

Global production of biofuels is growing steadily and will continue to **do so**. (continue to *grow steadily* - substitution)

<http://www.scidev.net/global/capacity-building/opinion/biofuels-benefits-and-risks-for-developing-countr.html>

In the Gulf, Dubai crude is used as a benchmark to price sales of other regional crudes into Asia. This is not because there are more supplies of Dubai crude oil than of any other grade - there are not - but because **it** is one of the few Gulf crudes available in single, on the spot, sales as opposed to long term supply contracts. However, if **supplies** became extremely limited and price swings became exaggerated, a new benchmark would have to be found. (supplies of *Dubai crude* - ellipsis)

<http://news.bbc.co.uk/2/mobile/business/904748.stm>

Exercise 3.4

Complete the table by saying what each item replaces. Identify if it is substitution or ellipsis.

Solar-powered calculators vs battery-powered calculators

- Not only have calculators managed to increase their capabilities, but they have managed to **do so** while remaining pocket-sized. An important element of their compact size is the particular power source that they employ. Calculators use either a solar panel, a battery, or **both**. This guide will detail the differences between solar-powered and battery-powered calculators, describing how each source powers a calculator and what the advantages to each source are.

If a user does not require advanced features (such as graphing) from a calculator, there are a number of advantages that solar-powered calculators hold over battery-powered **ones**. The first advantage is that solar-powered calculators never require replacement of batteries. **The second** is that they are lightweight. The absence of a battery reduces their weight significantly when measuring the battery's weight as a proportion of the calculator's overall weight. The third advantage is that solar-powered calculators generally cost less than battery-powered **ones do**.

- There are some disadvantages to solar-powered calculators as well. The main **one** is that they do not work in low-light situations. Solar power is also generally an insufficient source of electricity for calculators that are more powerful. Lastly, the display on a solar-powered calculator may be dimmer than the **one** on a battery-powered calculator.

eBay has a couple of ways of helping to ensure a satisfactory purchase when buying used calculators. **The first** is by making sellers' feedback freely available to buyers. You will be able to see what other buyers have said about their experiences with particular sellers, which will help you to decide whether to buy from those sellers. The second way ...

<http://www.ebay.co.uk/gds/Solar-Powered-Calculators-vs-Battery-Powered-Calculators-/10000000177630725/g.html>

			Substitution or ellipsis
line 2	do so		
line 3	both		
line 7	ones		
line 8	The second		
line 11	ones		
line 11	do		
line 12	one		
line 15	one		
line 17	The first		

Academic discourse

In report writing or academic discourse the register variables usually select for language that is

- more objective and impersonal sounding,
- less congruent or lexically more dense,
- more technical.

To achieve the appropriate register, we can use different lexico-grammatical resources: nominalisation, conjunctions, modal verbs and thematic choice.

Nominalisation

Nominalisation refers to reformulating a verbal group, adjective or clause as a nominal group. Consider the following sentence.

We can see that Portugal doesn't contribute so much in the GDP of the Eurozone, which could mean that Portugal isn't economically healthy. (23 words)

The language selections are

- more congruent and lexically less dense (Portugal doesn't contribute so much in the GDP of the Eurozone, which could mean),
- more personal, less objective sounding and more informal (We can see that; doesn't), and
- somewhat technical (GDP; economically)

Compare the following reformulation, which is more objective and impersonal sounding, less congruent, but equally technical.

Portugal's low contribution to the GDP of the Eurozone suggests that it is not economically healthy. (16 words)

Portugal's low contribution to the GDP of the Eurozone	suggests that	it is not economically healthy.
We can see that Portugal doesn't contribute so much in the GDP of the Eurozone,	which could mean that	Portugal isn't economically healthy.

The reformulation relies on NOMINALISATION, i.e. reformulating a clause as a nominal group, and using a verb that implies INTERPRETATION such as *suggest, imply, show, demonstrate, corroborate* or *prove*. This structure eliminates the need for expressions such as *We can see that, I think that* or *in my opinion*, which are overtly personal and subjective sounding.

Exercise 4.4

Reformulate the sentences by nominalising the underlined section and using a verb of interpretation (e.g. suggest, demonstrate). Other changes may be necessary to make the information more concise or to improve the information flow.

e.g. After analyzing some data and some economic indicators, I can conclude that it's a difficult task to determine the refugee quota because so many things are at stake.

The results of the analysis suggest that it is difficult to determine the refugee quota because so many things are at stake.

1. After analyzing these data, I think France is prepared to receive this number of refugees since they are showing huge improvements in their economy.
2. In Danah Boyd's opinion, there are some good conclusions that can be made about the fact that Mimi was involved in protests as a student. It can mean that she is an interesting and active person, and those are the characteristics we are looking for.
3. Analysing the current European situation, it's clear that those values won't work.

Conjunctions

Interpretation can also be realized through conjunctions, which results in a less congruent register.

In France the GDP is about US\$2,829 bn, which corresponds to about 21% of GDP in the Eurozone. So we can see that France has a large contribution to the Eurozone.

In France the GDP is about US\$2,829 bn, which corresponds to about 21% of GDP in the Eurozone. Thus, France has a large contribution to the Eurozone.

Eventually this took on such great proportions that it became a crisis, the EU migrant crisis. This meant that Europe's representatives had to come up with a solution.

Eventually this took on such great proportions that it became a crisis, the EU migrant crisis. As a result / Consequently, Europe's representatives had to come up with a solution.

Exercise 4.5

Reformulate the following examples using an appropriate conjunction to improve the register.

1. This surge in sales of hybrid and electric cars may be related to news that GM and SAIC would jointly produce electric cars. This means that the cars would become more efficient and affordable.
2. Now we are able to conclude that the values espoused and demonstrated by Shell through its advertising campaigns changed over time.
3. From 2011 to 2013 the number of hybrid electric cars doubled and both plug-in hybrid-electric and electric cars increased over sevenfold. This meant hybrid/electric cars made up almost 8% of all passenger car sales in 2013.

Modality in the verbal group

Modal auxiliary verbs (*may, might, can, could* etc.) and verbs like *seem* and *tend* in the verbal group can adjust interpersonal meanings and make the text sound more objective. Compare:

I like to believe that after many years people are finally acknowledging the mistakes they've committed and are trying to change.

*People **may** now finally be acknowledging the mistakes they have committed and be trying to change.*

Modal verbs and verbs like *seem* and *tend* can be used to adjust meanings of both non-past and past situations.

Non-past

*Having the most expensive players in the world on your team **may not be** enough to win titles and dominate football on the pitch.*

Subject	Verbal group		Complement
	Modal	Verb - infinitive	
Having the most expensive players in the world on your team	may	<i>not be</i>	<i>enough to win titles</i>
	seem/tend	<i>Verb -TO + infinitive</i>	
Having the most expensive players in the world on your team	does not seem	<i>to be</i>	<i>enough to win titles</i>

Past

The president's strategy *may have earned* the team a lot of money, but ...

Subject	Verbal group		Complement
	Modal	HAVE + Verb (past participle)	
<i>The president's strategy</i>	may	<i>have earned</i>	<i>the team a lot of money</i>
	seem/tend	TO HAVE + Verb (past participle)	
<i>The president's strategy</i>	seems	<i>to have earned</i>	<i>the team a lot of money</i>

Exercise 4.6

Rewrite the sentences using a modal verb or one like *seem* and *tend* to make them sound more objective.

1. I think the main reason that the governments and people in power refuse to really address the issue of global warming is the power of the oil based economy.
2. We can assume that the survey was made to HSBC expat clients.
3. I think France is prepared to receive this number of refugees since they are showing huge improvements in their economy.
4. I guess Chevron has changed the image they wish to project over time because of the different charges and cases which the company was involved in. ... So I think now Chevron is aware of this antagonism between its attitude and the image they wish to project. So Chevron maybe decided to project an image of a company focused on solving professional and complex issues by working hard and seriously.
5. I admit that football is sometimes entertaining to watch because of the thrill and hope that your team/country will win.

Exercise 4.7

Rewrite the following sentences using the prompt given and an appropriate modal verb to replace the underlined expression. The first one is done as an example.

1. It is now possible to extract oil from nonconventional fields.
Oil... *Oil can now be extracted from nonconventional fields.*
2. It is possible, but unlikely, that governments will come to an agreement about how to deal with climate change in the near future.
Governments ...
3. One option is for governments to agree to levy a common tax on carbon emissions.
Governments ...
4. George W. Bush's statements at the G8 meeting appear to indicate that he is changing his attitude towards the US compliance with limiting carbon emissions, but I don't think this is very likely.
George W. Bush's statements ...
5. George W. Bush stated that he believed it to be the duty of the US to take a leading role in tackling climate change.
George W. Bush stated ...
6. We are sure that Sub-Saharan Africa and Asia are going to suffer more severely from drought, floods and famine as a result of global warming.
Sub-Saharan Africa and Asia ...
7. Whatever is done, the possibility of halting carbon emissions in the future is nil.
Carbon emissions ... rise

8. Under the current system of carbon credits, countries are allowed to buy and sell credits in order to meet emissions targets.
Countries ...
9. It is not an option for us to sit back and do nothing about rising carbon emissions.
We ...
10. I think it is appalling that the US and Australia did not sign the Kyoto treaty.
The US and Australia ...
11. You cannot use non conventional oil without processing it to be converted into an equivalent of crude oil.
Non conventional oil ...
12. In a cap-and-trade system, it is theoretically possible to place limits on how much CO2 industries are permitted to emit, and allow heavy emitters, such as power plants, to trade carbon "credits"
A cap-and-trade system ...

Thematic choice & register (informal ↔ formal; congruent ↔ abstract)

Choice of theme has consequences for the register of the text. Compare two sentences.

- | | Theme | Rheme |
|----|------------------|---|
| a. | In this campaign | we see a more corporate side of the firm. |
| b. | This campaign | represents a more corporate side of the firm. |

Selecting a prepositional phrase as theme (a.) forces the writer to use a human subject with a more congruent mental process verb (e.g. see, conclude, think, assume) to interpret the campaign. Furthermore, it makes the text sound more subjective because it mentions the writer and/or reader explicitly. In b. the writer can select a more abstract verb of interpretation (e.g. suggest, imply, represent, symbolise) and avoid all mention of the writer or reader.

When the Theme is realised by a personal pronoun (I, you, we) and followed by a mental process verb (e.g. think, assume), the assessment can often be simply left out or replaced by an adverb of frequency.

	Theme	Rheme
a.	I	think that managers have a tendency to exaggerate when they organize too many events in the name of team building.
b.	Managers	<i>often</i> exaggerate when they organize too many events in the name of team building.

Exercise 4.8

Rewrite each sentence, making it sound more objective.

1. On a first approach we might be misled and not understand the real message with this ad.
At first glance, the ad ...
2. Basically, you take some mortgages of different people to form a bigger "mortgage", with a value of 50 million dollars, which they call a Mortgage-backed Security.
A mortgage-backed security ...
3. In the end I think that what is important is not how much a manager interferes in the organisation but the quality of the intervention.
What ...
4. When you're working in a team, you're learning and producing more.
Teamwork ...
5. In my opinion, this is a trend to continue because the emerging economies are still going to pass through the states of evolution of the countries of the first world, and for that energy is required.
This trend ...
6. In the graph it's observed that oil prices remained constant during the period following World War II.

7. The conclusion we can make from these pictures is that, with this campaign, the company is showing people how they are planning to achieve the goals that were implied in the first campaign.
8. By analysing the graph, and subsequent information, we can conclude that although petrol/diesel cars are still preferred by US car buyers, the electric/hybrid sector has been gaining influence over the past years.
9. What I am going to analyse in this text is the image that Shell wanted to project over time. To do that, I am going to explain the differences between advertising campaigns between 2004 and 2010. ... In the images below we can see Shell's advertising campaigns from 2004 and 2005. ... With these three examples we are able to conclude that Shell, which was growing and expanding at the time, wanted to show how powerful their products were. ... Last, we have a picture of a man smiling on an oil ship and the slogan "Where you demand, we supply".

FUNCTIONAL LANGUAGE

Comparison & contrast: similarity and difference

Relations of similarity and difference can be expressed in different ways. They can be realised within the clause as a verb, adverb, a prepositional phrase, or within the nominal group, they can be realised as a conjunction that links an independent clause and a dependent clause, and they can be realised as conjunctions that link sentences or larger chunks of text. Examples are given in the following table.

Word class	Examples	Example sentences
conjunction (linking sentences or larger chunks of text)	By contrast, Similarly,	The Toyota Lexus was found to be very reliable. Similarly , the Prius performed consistently well. The Japanese manufacturer Toyota dominated the list of most reliable cars for 2016. By contrast , the cars voted the least reliable included mainly US and European manufacturers.
conjunction (dependent + independent clause)	whereas while	The Toyota Prius was found to be very reliable while the Ford Fiesta received the lowest scores for car dependability
preposition	in comparison with ... compared to/with ... in contrast with ... like ... unlike ...	In comparison with the Toyota Prius, the Ford Fiesta scored much lower on the dependability index. Like the Toyota Lexus, the Prius was found to be the most reliable car for its category. Unlike the jeep Cherokee, the Toyota RAV4 performed consistently well on reliability.
verb	differ (from) deviate (from) vary diverge (from) resemble	The Chrysler 200 differs from the Chrysler 300 only in its size. They resemble each other in their low dependability.
noun	difference similarity	The difference between the Chrysler 200 and the Chrysler 300 is that that the former is smaller than the latter. The similarity is that they were both found to be unreliable.
adjective	different (from) similar (to) the same (as)	The Chrysler 200 is different from the Chrysler 300 only in its size. The Chrysler 200 has the same low dependability as the Chrysler 300.
adverb	both	The Chrysler 200 and the Chrysler 300 were both found to be unreliable.
determiner	both ...and neither ...nor	Both the Chrysler Town and Country and the Dodge Grand Caravan performed poorly in the minivan category Neither the Chrysler Town and Country nor the Dodge Grand Caravan performed well in the minivan category.

Relations of comparison can be realised through comparative and superlative forms of **adjectives** and **adverbs**.

Comparisons can be used to compare two entities:

- Few things will ruin your day **faster than** a car that won't run.
- Honda's reliability ratings have historically been rock solid, but the cherry on top is that if they do break down, the company's products are generally **less expensive to fix than** the competition.
- Few automakers have made **greater** strides in recent years **than** Buick. The brand's commodities are **better** looking, **better** performing, and **more** comfortable **than** ever.
 - <http://www.digitaltrends.com/cars/most-reliable-cars/#ixzz4Ksv4Dktg>

To compare more than two entities:

- These are **the most trustworthy** rides you can buy.
 - <http://www.digitaltrends.com/cars/most-reliable-cars/#ixzz4Ksv4Dktg>

To compare something and a definite standard:

- Ford cars tend to be unreliable. To compete they must become **more reliable**.

The form depends on the adjective or adverb.

Adjectives or adverbs with one syllable:

long	longer (than)	the longest
low	lower (than)	the lowest
late	later (than)	the latest

Two-syllable adjectives ending in **y**, **ow**, and **le**:

easy	easier (than)	the easiest
narrow	narrower (than)	the narrowest
simple	simpler (than)	the simplest

Other two-syllable adjectives or adverbs and longer ones:

profitable	more profitable (than)	the most profitable
	less profitable (than)	the least profitable
important	more important (than)	the most important

Irregular adjectives and adverbs

good	better (than)	the best
bad	worse (than)	the worst
well	better (than)	the best
badly	worse (than)	the worst
much	more ... (than)	the most
many	more ... (than)	the most
little	less ... (than)	the least
far	farther / further (than)	the farthest / furthest

Successful data commentary often relies on a mixture of language selections including comparisons using adjectives and adverbs as well as other ways of construing similarity and difference.

Exercise 5.1

Circle the correct form to complete the text.

Unilever, Nestlé and Danone lead the list [of companies that have tried to address the problem of undernutrition and obesity], having done **the more / more than the others** to integrate nutrition into their business models, produce **healthier / healthiest** products and ensure affordable pricing and **wider / the widest** distribution of **healthier / the healthier** products in emerging markets. Mars and FrieslandCampina are **the more improved / the most improved** according to the index. Mars rose from 16th to 5th place and FrieslandCampina from 19th to 8th since the 2013 index.

<http://www.foodengineeringmag.com/articles/95175-ranking-the-largest-food-companies>

Exercise 5.2

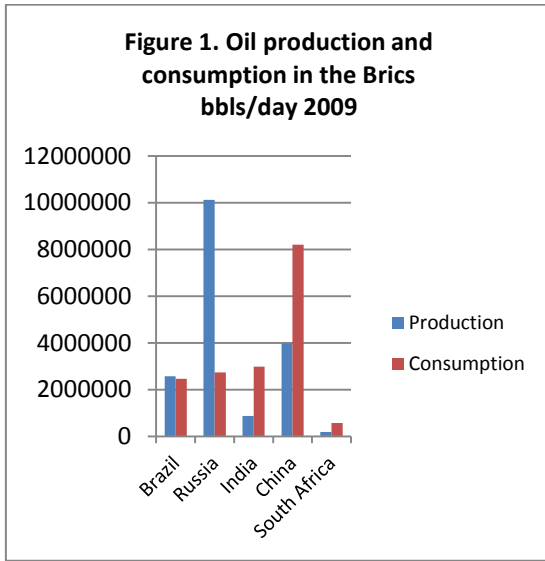
Use the expressions in the box to complete the sentences. In some cases there is more than one possible answer.

whereas	while	unlike	by contrast	on the contrary
both	however	but	similarly	also

1. The Islamic State does not encourage freedom of speech. _____, it has a council who is responsible for shaping the way people think and promoting an ideologically approved message to the rest of the world.
2. Portugal, _____ ISIS, is a democracy where people have freedom of speech.
3. The Portuguese State ministries are in charge of administering public services for the benefit of the general public. _____, the councils in ISIS are concerned with matters of war such as weapons sales or executions.
4. _____ the Portuguese government and ISIS have a head of State. In Portugal this position is held by the president _____ in ISIS it is held by the Caliph. The president, _____ the Caliph, is elected by the people.
5. In Portugal the Consultative Council is an independent body which can be consulted by the government on executive matters. _____, in ISIS, the Shura Council has an advisory capacity, _____ it rules on religious matters and ensures that the religious laws are being observed.
6. The Portuguese government has ministries to oversee public services. ISIS _____ has ministries; _____, they are called Councils rather than ministries.

Exercise 5.3

Use the information in the graph to complete the text.

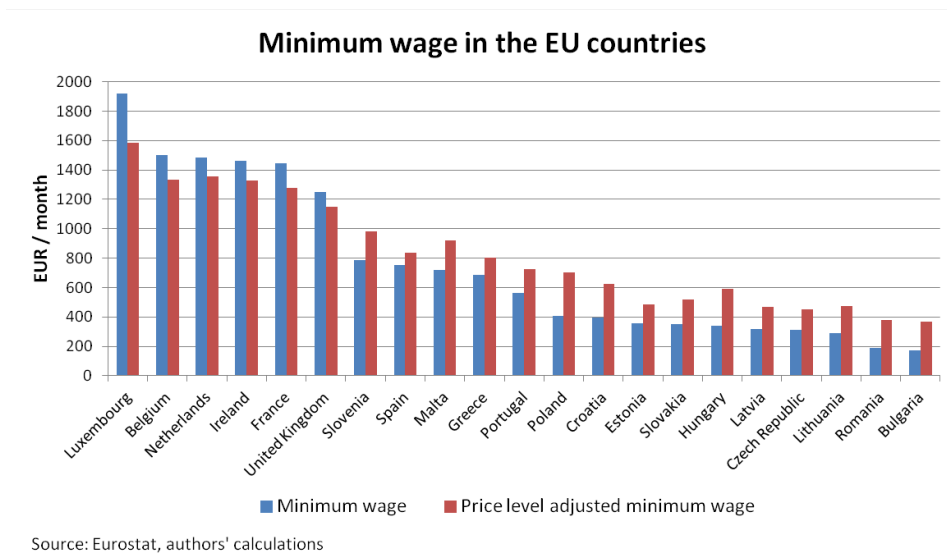


The countries can be divided into two basic groups: those who produce _____ they consume, and those who produce _____ they consume. _____ Brazil and Russia produce _____ they consume. Notwithstanding, _____ the difference between oil production and consumption in Brazil is slight, Russia’s oil production is approximately four times _____ its consumption. _____ these two countries, India, China and South Africa consume _____ they produce. _____ China, whose oil consumption is double its production, India consumes over three times the amount of oil they produce. South Africa _____ consumes about three times the amount it produces, _____ the overall amounts are significantly _____ those of India.

Figure 1 shows the oil production and consumption in the BRICS – Brazil, Russia, India, China, and South Africa – for 2009.

Exercise 5.4

Use the information in the graph to complete the text.



Source: Eurostat, authors' calculations

The figure shows the minimum wage per month in European countries. Luxembourg has _____ minimum wage and Bulgaria has _____. In general, the wages in the east and south of Europe are _____ those in the centre. When the wages are adjusted to prices, the countries with _____ wages such as Belgium or the UK lose some of their purchasing power, which indicates that the cost of living in these countries is high. _____, in countries such as Spain, Hungary or Romania, the cost of living is _____. For example, although the raw minimum wage in Slovakia is _____ in Hungary, the cost of living in Hungary is _____ so that the _____ wage in Hungary goes _____.

Cause and effect

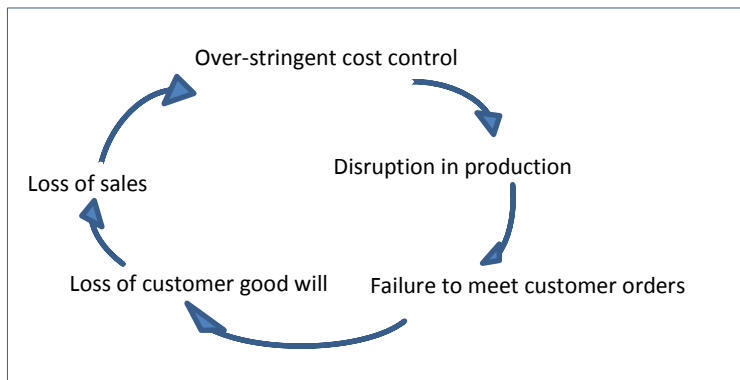
Cause and effect relations can be expressed in different ways. They can be realised within the clause as a verb, a noun or a preposition, they can be realised as a conjunction that links an independent clause and a dependent clause or one that links two independent clauses, and they can be realised as conjunctions that link sentences or larger chunks of text. Examples are given in the following table.

Word class	Examples	Example sentences
conjunction (linking sentences or larger chunks of text)	As a result, As a consequence, Consequently, Because of this, Therefore, So Thus, Hence, That is why	Interest rates are up again <i>[cause]</i> . As a result , we will face cash problems <i>[effect]</i> .
Conjunction (linking independent clauses in a sentence)	therefore, so, thus, hence	Interest rates have risen <i>[cause]</i> ; therefore, small companies may face cash flow problems <i>[effect]</i> .
conjunction (dependent clause + independent clause)	because as since when if	Small companies face problems <i>[effect]</i> because interest rates have risen <i>[cause]</i> . Because interest rates have risen <i>[cause]</i> , small companies face problems <i>[effect]</i> . When interest rates rise <i>[cause]</i> , small companies can face problems <i>[effect]</i> .
preposition	because of (+ NG) due to as a result of on account of as a consequence of owing to	Due to low interest rates <i>[cause]</i> small companies can now invest <i>[effect]</i> . Small companies can now invest <i>[effect]</i> due to low interest rates <i>[cause]</i> .
verb	cause lead to result in give rise to bring about be responsible for spur spark trigger arise from result from stem from be attributable to	The recent rise in interest rates <i>[cause]</i> has led to bankruptcies <i>[effect]</i> . The recent rise in interest rates <i>[cause]</i> has led many companies to go bankrupt <i>[effect]</i> . Many bankruptcies <i>[effect]</i> have resulted from the rise in interest rates <i>[cause]</i> .

Word class	Examples	Example sentences
Noun	cause (of+ NG) reason (for + NG) reason (why + clause)	The cause of many of the recent bankruptcies [effect] was the rise in interest rates [cause]. The cause of many of the recent bankruptcies [effect] was that the Central Bank raised interest rates [cause]. The reason why many small businesses went bankrupt [effect] was that the Central Bank raised interest rates [cause].
	effect (of) result	One of the effects of the rise in interest rates [cause] was that some small firms went bankrupt [effect]. One of the results of the rise in interest rates [cause] was bankruptcy [effect].

Exercise 5.5

Use the diagram to put the following parts of sentences into the correct order.



which will cause costs to be controlled.
and the subsequent loss of customer goodwill.
This will inevitably mean a decline in sales
Over-stringent control can lead to disruption in production
This may, in turn, result in the failure to meet customer orders
due to delays in raw materials

Source: *Finance*, 1992. J. Comfort & N. Brieger, New York: Prentice Hall International. pp 17,19

Exercise 5.6

The following sentences about the consequences of fracking were adapted from http://serc.carleton.edu/NAGTWorkshops/health/case_studies/hydrofracking_w.html or <http://www.greenpeace.org/usa/global-warming/issues/fracking/environmental-impacts-water/>. Rewrite them using the prompt to regain the original sentence. The prompt must not be changed in any way.

e.g. Source contamination can be complicated because there are a multitude of potential health and environmental impacts of hydrofracking.

Due to ...

Due to the multitude of potential health and environmental impacts of hydrofracking, source contamination can be complicated.

1. The reason why air pollution also extends beyond the immediate drilling site and transportation route is that a by-product of natural gas drilling is methane gas, one of the worst greenhouse gas pollutants contributing to climate change.

... because ...

2. Each well can require up to 8 million gallons of water, and up to 40,000 gallons of chemicals. Consequently, a well site may need up to 2000 tanker truck trips per frack.

Because ...

3. When workers inhale crystalline silica, in the form of sand, they can get silicosis (an incurable but preventable lung disease).

... cause ...

4. The injection of fracking wastewater underground can cause earthquakes, which scientists refer to as "induced seismic events".

... caused ...

5. Although the list was incomplete because there were trade secrecy exemptions, researchers compiled a list of 632 chemicals identified from drilling operations throughout the U.S. though

... due to ...

6. Tremendous harm to humans can stem from exposure to toxic chemicals even at low levels.

... cause ...

7. Regulators had not been informed that the pipeline was carrying tar sands oil and the disclosure [that the pipeline was carrying tar sands oil] was caused by the spill.

... a result ...

8. Tar sands oil was not in the pipeline at the time of the spill, though regulators are investigating whether or not it played a role in making the pipeline corrode.

... causing ...

9. Geologists believe that earthquakes can be caused by the millions of gallons of fluids forced underground at high pressure.

... trigger ...

10. In spite of the evidence, the oil and gas industry routinely claims that water contamination has never been caused by fracking.

... resulted in...

VERB TENSES

Present simple vs past simple

Exercise 6.1

1. Complete the sentences by choosing the correct verb form.

- a. Why do / did golf driving ranges **spring** up all over the suburbs of Washington, DC in the early 1990s? (Charles Kehler)
- b. With trade associations and lobbyists bidding for property in close proximity to the US nation's capital, land prices in Washington, DC are / were high.
- c. To cover the cost of acquiring a building plot in that market, property developers have / had to charge steep rents.
- d. And that generally means / meant constructing multi-storey office buildings or apartments.
- e. Yet during the early 1990s, developers begin / began constructing scores of golf driving ranges. A typical driving range might attract a few dozen customers each evening. Each would pay a few dollars for the privilege of driving golf balls into the night sky, but the total take in any given month would be too small to cover even the interest on the loan required to buy the land.
- f. Why do / did developers **use** their land in this way?
- g. Washington area developers construct / constructed new office buildings and apartments at a rapid rate throughout the late 1980s.
- h. Home prices and office rents rise / rose rapidly, and developers acquire / acquired undeveloped building lots in the expectation of further increases.
- i. When the national economic recession begin / began in 1991, the Washington property market is / was substantially overbuilt.
- j. Vacancy rates soar / soared and rents plummet / plummeted.
- k. Any developer who constructs / constructed a new office building or block of flats during that period can / could **expect** it to sit empty for a while.

Source: The Economic Naturalist: Why Economics explains almost everything, Robert H Frank, 2007

Glossary

to spring up – to suddenly appear
 driving ranges – places to practise hitting a golf ball
 to bid for – to try to buy
 to cover the costs – to recoup the money of the investment
 to charge steep rents – to ask for a high price for the rent
 multi-storey – more than one floor
 scores of – many
 to drive (golf balls) – to hit (golf balls)
 vacancies – unoccupied (flats)
 to soar – to go up / rise dramatically and quickly
 to plummet – to go down / drop dramatically and quickly
 to sit empty – to remain unoccupied

2. Circle the **time expressions** that indicate the *time frame* for the tense.
3. What form of the verb are the words in **bold**? Why?

Exercise 6.2

1. Complete the text by putting the verbs in the correct tense (present or past).
2. Circle any time expressions.

USING ECONOMICS: PREDICTING THE EFFECTS OF THE DROUGHT OF 1988

For the Midwestern United State, 1988 (1) *brought* (bring) one of the worst droughts¹ ever recorded. Corn production (2) (be) 35 percent lower than had been expected before the drought; soybean production (3) (be) down more than 10 percent, and oats and barley (4) (be) down more than 40 percent. As these events (5) (develop), economists (6) (attempt) to predict their consequences, using the basic law of supply and demand that we have developed in this chapter.

The drought (7) (reduce) the amount of any crop that would be supplied at any given price. The drought can be viewed as shifting the supply curve to the left. Predictably, with a given demand curve, the large shift of the supply curve (8) (result) in² much higher prices for these farm products: corn prices (9) (rise) by 80 percent by the end of the summer, soybeans by almost 70 percent, and wheat by 50 percent.

Economists also (10) (use) the supply and demand models to predict the effects on other products. Grain (11) (be) a major input into cattle production. With cattle production less profitable, many farmers (12) (slaughter) their cattle sooner than they had originally planned. As a result, meat production (13) (rise) slightly in 1988. The increased short-run supply (14) (result) in a decrease in meat prices (adjusted for inflation). Grain (15) (be) also a major input for the production of chicken. The supply curves for chickens and eggs (16) (shift) to the left, resulting in higher prices for these commodities. The higher prices of these agricultural goods (17) (result) in a shift to the right of the demand curve for other foods which (18) (be) substitutes. Thus, prices for foods, such as vegetables and fruits, whose supply (19) (be) not affected by the Midwestern drought, still (20) (increase) – by 5 percent in July 1988 alone.

¹ drought = sustained period of time without rain

² to result in = to cause

Past simple vs present perfect

Exercise 6.3

Conjugate the verb in an appropriate tense: past simple or present perfect. Circle the expressions that indicate a time frame. The sentences form an article that was published in *Newsweek*, Feb 22, 2010. Complete it as if you were in 2010.

FROM WORST TO NEAR FIRST

1. The state of Bihar *was once* (be, once) the most desperate state in India.
2. *Since 2005* it *has transformed* (transform) itself to become a model for the rest of the country.
3. In 2005 Nitish Kumar _____ (be elected) Chief Minister, and since his election he _____ (do) the near impossible.
4. Over the five years that Kumar _____ (be) in office Bihar _____ (post) 11 per cent average annual economic growth.
5. In what _____ (be, once) impassable badlands, the administration _____ (lay) 6,800 kilometers of roads, _____ (build) 1,600 bridges and culverts, and _____ (cut) journey time in half in many areas.
6. Car sales _____ (eclipse) kidnappings as crimes by roving bandits _____ (fall) steadily from 1,297 to 640 and kidnappings for ransom _____ (drop) from 411 to 66 between 2004 and 2008.
7. Over the past two years the number of foreign tourists _____ (shoot up) from 95,000 to 356,000.
8. How _____ (Kumar, achieve) this?
9. First, Kumar _____ (focus) on competence over patronage.
10. In other words, he _____ (not, continue) the caste-related politics of the '80s and '90s.
11. He _____ (delegate) more financial and administrative powers to officials in the field.
12. He _____ (update) archaic rules that _____ (make) civil engineers seek minister-level approval to spend absurdly low amounts of money.
13. These moves _____ (eliminate) the huge backlogs of simple matters piled up on senior officials' desks.
14. Kumar then _____ (redefine) the basic functions of institutions and _____ (require) offices to do the work they'd been assigned.
15. He _____ (end) the widespread "transfer industry," which _____ (sell) coveted bureaucratic posts to the highest bidders, and he _____ (handpick) bureaucrats known for their competence.
16. He _____ (reform) the police force and the judiciary system.
17. The moves _____ (result in) nearly 39,000 convictions between 2006 and 2009, compared with an average of less than 10,000 in previous decades.
18. Those convicted _____ (include) a dozen state legislators and members of Parliament.
19. In making these changes Kumar _____ (show) that even India's darkest corner can make progress against crime, corruption, and caste- and creed-based demagoguery.
20. Kumar _____ (break) the perception that all politicians are the same and change is impossible.

TEXT TYPES**Analytical responses****Socio-cultural context**

- Purpose: To persuade the reader that the writer's interpretation of image is valid
- Field: Depends on the specific context/topic
- Writer-reader relation: Usually some social distance
- Mode May be spoken or written

Stages	Moves	
Introduction	(Background information)	Provides background to topic
	Purpose statement or general statement of analysis topic	States purpose of text or gives general statement about topic (data) for analysis
Analysis	Description	Describes data/visual input
	Interpretation	Interprets (symbolic) meaning of elements
	Claim of significance/assessment	Makes a deduction about general cultural meaning
Conclusion	Conclusion	States conclusions related to purpose of essay and based on claims of significance/assessment

The cartoon analyses on page 1 of *The oil industry* file are examples of the analysis stage.

Analytical reports

Socio-cultural context

- Purpose: to assess (the extent of) a (potential) problem/situation and recommend courses of action
- Field: depends on specific context
- Writer/reader relation: usually some social distance
- Mode: usually written

Stages	Moves	
Introduction	Background information	Gives background information
	Statement of issue / problem/situation	States the issue, problem or situation
	Statement of purpose	States purpose of report
	(Preview means of analysis)	Lists major data categories to be used in analysis
Analysis (more than 1 paragraph)	Topic sentence or claim as to relevant data/indicators	States general topic of paragraph (or identifies data categories/indicators)
	Description of data	Presents and describes the facts/data/indicators
	Interpretation	Discusses the facts/data in relation to the problem (e.g. implications, impact, etc.)
	Deduction	Makes deductions about the data/facts related to the purpose of report
Follow up alternatives	Possible course of action	Presents a possible course of action in response to the deductions from the analysis stage
	Assessment	Assesses the advantages and disadvantages of course of action
Conclusion	Conclusions	States conclusions based on and following from analysis and follow up alternatives. May be a reiteration of deductions
Recommendations	Recommendations of action	States the actions that the writer advises related to purpose of the report and based on analysis, follow up alternatives and conclusions

Exercise 7.1

Analytical exposition

Socio-cultural context

- Purpose: To persuade the reader that the writer's position on an issue is valid
- Field: Depends on the specific context/topic
- Writer-reader relation: Varies according to writer & reader
- Mode: May be spoken or written

Stages	Moves	
Introduction	(Background information)	Gives background information to the issue
	Statement of issue	States (& describes) issue
	Thesis	States the writer's position on the issue
	(Preview of claims)	Lists topics of the claims
Analysis	Claim	States reason in support of the thesis
	(Elaboration)	Elaborates on the claim
	Evidence	Gives the means through which the claim is substantiated.
Conclusion	(Summary of claims)	Summarises main claims
	Reinforced thesis statement	Restates writer's position on the issue in a more forceful/complex way

Data commentary

Socio-cultural context

- Purpose: To describe briefly and explain results.
- Field: Depends on the specific context/topic and nature of data source (i.e. table, graph, etc)
- Writer-reader relation: Varies according to writer & reader
- Mode: May be spoken or written

The kind of data commentary depends on the explanatory purpose of the text, whether the explanation is retrospective (i.e. explain how or why the results are what they are) or prospective (i.e. interpret what they suggest about a larger topic or potential future consequences or implications). This difference tends to be found in the fourth move of the data commentary.

Moves		Typical lexis
Presentation	Creates a link between the visual image and the verbal commentary and states the content of the visual image	<i>Figure 1 shows / illustrates... ... (Table 1). ... is shown in Table 2.</i>
Summary trend	Aggregates elements to make a general statement about dominant trend or whole	
Descriptive highlights	<p>Selects a few meaningful elements from figure to illustrate main trend.</p> <p>May select elements that are exceptions to the main trend.</p> <p>May convert raw figures into percentages or percentages into fractions. Tends to round off figures</p> <p>May compare and contrast information/examples from figure.</p>	<p>Nouns: <i>rise, fall, slump, relative share, etc.</i></p> <p>Verbs: <i>increase, peak, make up, be composed of, etc.</i></p> <p>Adjectives & adverbs: <i>sharp(ly), high, significant, etc.</i></p> <p>Language of comparison & contrast</p>
Explanation Or Interpretation	<p>Explains what caused the trends or exceptions, relative shares, etc.</p> <p>Explains/predicts the significance/impact of the trends, relative shares, etc. for a larger phenomenon</p>	<p>Language of cause and effect</p> <p>Verbs: <i>suggest, imply, mean, indicate, etc.</i></p> <p>Language of cause and effect</p>

A data commentary may be embedded in an analytical report in the analysis stage.

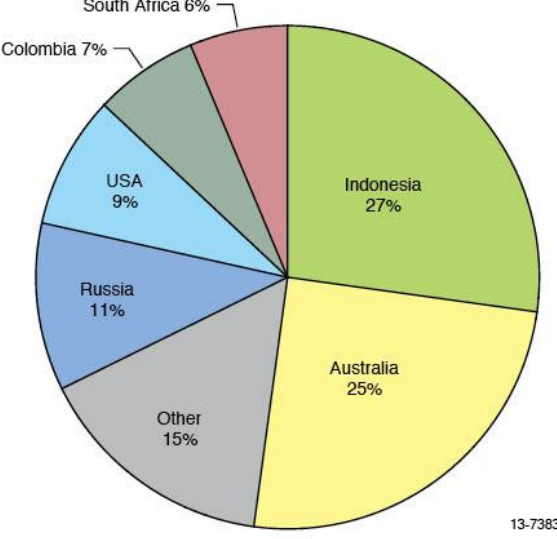
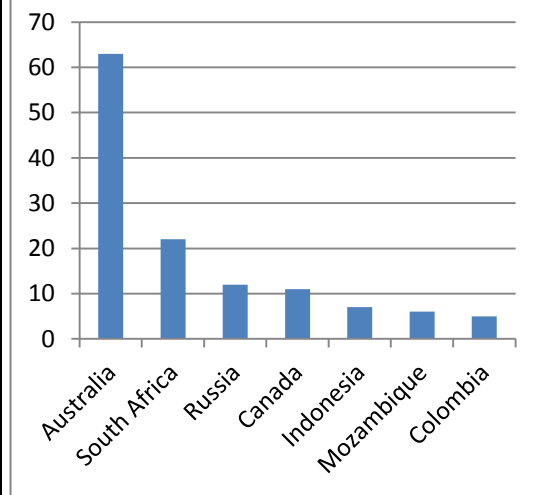
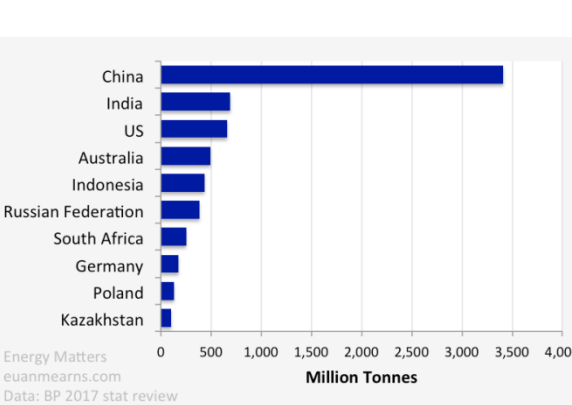
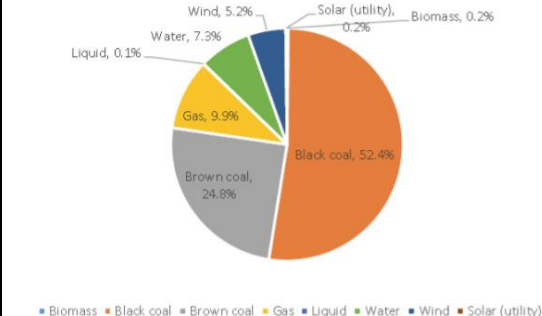
Exercise 7.1

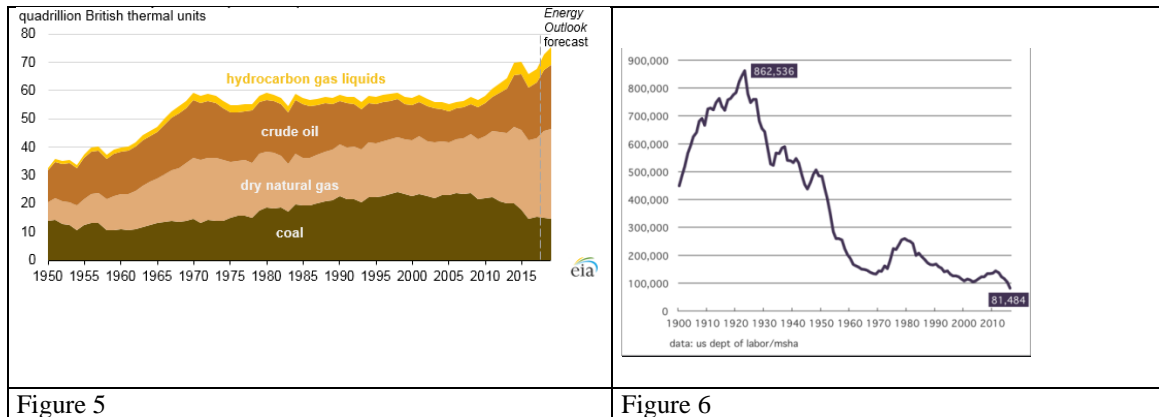
Match each half of the sentence (i. – iv.) with an appropriate ending (a.-d.).

- | | |
|---|--|
| <p>i. In a data commentary,</p> <p>ii. When the graph (pie chart or bar chart) shows shares of a whole and is expressed in raw figures,</p> <p>iii. When the graph (pie chart or bar chart) shows percentages,</p> <p>iv. When the graph (line graph or stacked graph) shows change over time</p> | <p>a. the summary trend typically contains the phrase ‘over the period’ or something similar.</p> <p>b. the summary trend typically aggregates elements to form a subgroup and states its relative share.</p> <p>c. there are different ways to aggregate information for the summary trend.</p> <p>d. the summary trend typically states the aggregated value of the whole.</p> |
|---|--|

Exercise 7.2

Match each graph (Figures 1-6) with an appropriate summary trend (a.-f.).

 <p style="text-align: right; font-size: small;">13-7383-36</p>	
<p>Figure 1</p>  <p style="font-size: x-small;">Energy Matters euanmearns.com Data: BP 2017 stat review</p>	<p>Figure 2.</p>  <p style="font-size: x-small;">Source: Australian Energy Council, <i>Submission 44</i>, p. 2.</p>
<p>Figure 3</p>	<p>Figure 4</p>



- Over the last century, employment in the US coal mining industry has fallen more than tenfold.
- According to the IEA there are 126 proposed coal mining projects around the world.
- Coal mines in the southern hemisphere account for almost two thirds of the world's coal exports.
- In 2016 the world produced more than 8000 million tonnes of coal.
- U.S. total fossil fuel production has more than doubled since 1950.
- Almost 90% of electricity is generated from fossil fuels.

Exercise 7.3

1. Below are four students' responses to a data commentary task for the graph given in Figure 1. Read them and answer the questions below.
 - i. Which text is highly redundant and replicates the information in the graph?
 - ii. Which texts aggregate elements from the graph to create a general statement of the dominant trend?
 - iii. Which texts do not follow the generic moves of a data commentary?
 - iv. Which texts follow the generic moves of a data commentary and are successful?
 - v. Which text interprets the data as a description of parts of a whole?
 - vi. Which text interprets the data as a description of change over time?

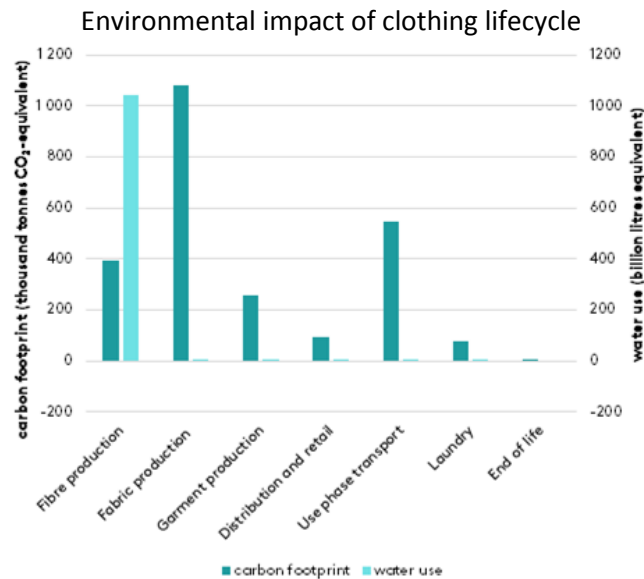


Figure 1: Environmental impact of clothing lifecycle

Source: <http://mistrafuturefashion.com/output/lca-five-garments/>

a.

The bar chart in figure 1 shows the environmental impact the clothing life cycle, both in its carbon footprint (thousand tonnes CO² equivalent) and its water use (billion litres equivalent). Different phases of this cycle are presented with the associated amount of both these variables. Shockingly perhaps, water use is nearly entirely associated with fibre production, accounting for over 1000 billion litres, whereas water use associated with laundry is practically non-existent. Unlike water use, the carbon footprint variable is somewhat more spread out over this life cycle, but unevenly nonetheless. It is mostly associated with fabric production, accounting for an astonishing 1.1 million tonnes of CO², followed by use phase transport and fibre production, which account for about 580 thousand and 400 thousand tonnes of CO², respectively. Additionally, it is also associated in smaller amounts with garment production, distribution and retail and laundry.

b.

The environmental impact of the clothing industry in the 21st century is higher than ever. In just a few hundred years, the average person has more than doubled his wardrobe size, which has had a negative impact of the environment.

Figure 1 shows a downwards trend of the environmental impact of clothing over its lifecycle, where the early stages of production are much more impactful than the impact that comes with everyday use in the hands of consumers. Fibre and fabric production are the most damaging stages with the former using over one thousand litres of water and the latter releasing over one thousand tonnes of CO² to the atmosphere.

c.

The graph shows the environmental impact of the clothing life cycle, judging by its carbon footprint and water use. First off, it is clear there is a significant difference between fibre, fabric and garment productions. In fibre production, there is a tremendous use of water of around 1050 billion litres coupled with a considerable carbon footprint rounding 400 thousand tonnes of CO² or equivalent. In garment production, the water usage is nearly null and the carbon footprint represents 250 thousand tonnes of CO² or equivalent.

After production, distribution and retail's carbon footprint round 100 thousand tonnes of CO² or equivalent and approximately no water use. The use phase transport's carbon footprint reaches an astonishing 550 thousand tonnes of CO² or equivalent whilst laundry's carbon footprint is of around 100. The water use in both is nearly null. In the end of life stage, the water use and the carbon footprint are almost inexistent.

In conclusion, the environmental impact of clothing life cycle is very erratic. The production phase is the most damaging to the environment, with fibre production being the one which uses more water, by far, and fabric production the one which has a higher carbon footprint. The following stages of clothing life cycle have considerably less environmental impact except for the use phase transport, which has a huge carbon footprint. Overall, the impact clothing has on the environment is surprisingly high and worrying.

d.

The bar chart presented shows the environmental impact of clothing in each phase of its life cycle, from production to retailing and then personal use. Water use shows a general decreasing trend since, after reaching approximately 1050 billion litres during the fibre production, it plummets to nearly 0 litres until clothing's end of life. Carbon emissions, on the other hand, behave quite erratically throughout the different phases. They peak in the fabric production phase to 1100 000 tonnes of CO₂ and then decrease substantially until reaching 100 000 tonnes, their lowest level.

2. The field of the graph in Figure 1 can be reconfigured as the taxonomy below (Figure 2).

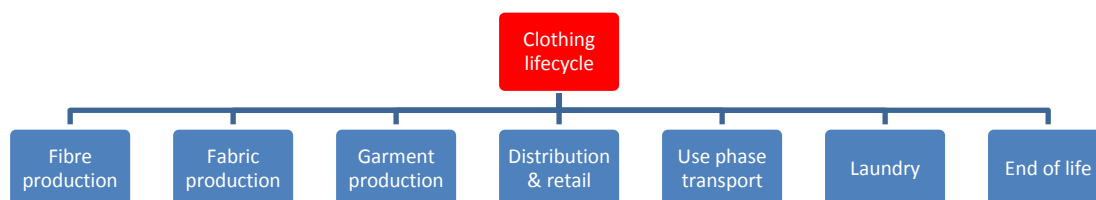
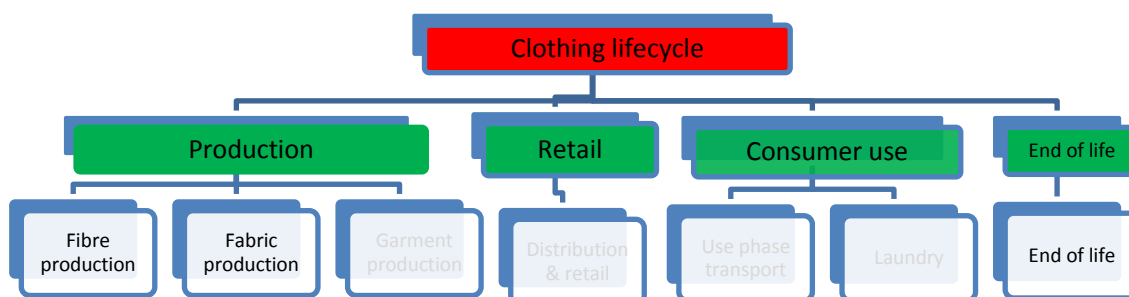


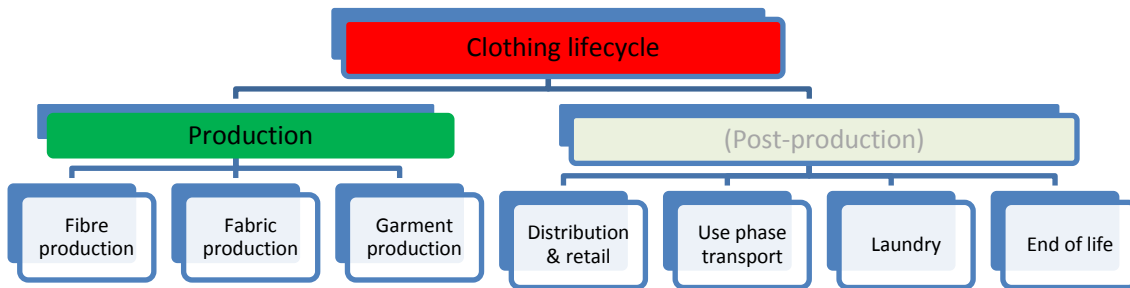
Figure 2: Taxonomy of field of the graph 'Environmental impact of the clothing lifecycle'

The taxonomies below (i.-iv.) correspond to the four written texts. Elements that are paler are not mentioned in the text. Match each taxonomy with the text it refers to.

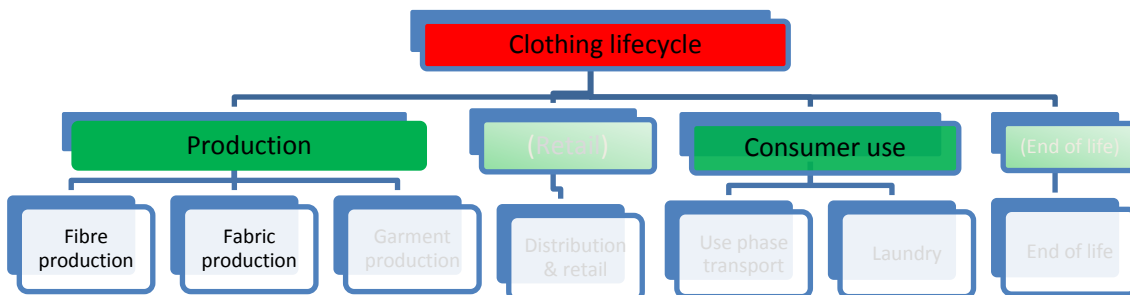
i.



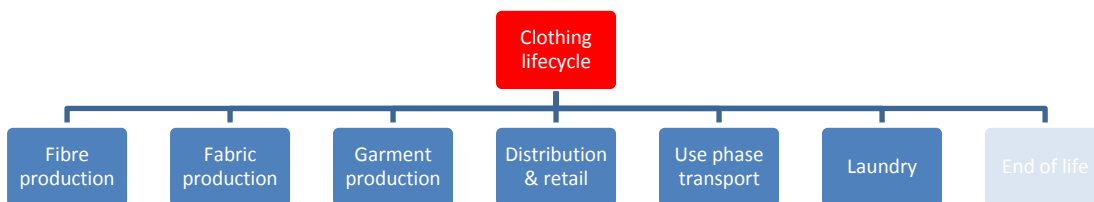
ii.



iii.



iv.



3. Mark the following sentences true or false.

- i. When the field of the verbal text replicates with minimal changes that of the graph, the resultant text is highly redundant.
- ii. When the field of the text expands that of the graph with an intermediate level, the writer can make more general claims about the content of the graph.
- iii. When the field of the written text expands that of the graph with an intermediate level, the intermediate level is the result of aggregating elements of the field in the graph and naming the set.
- iv. When there is a general claim about the content of the graph, only the most important data points in the graph are mentioned in the descriptive highlights and there is less redundancy between the graph and the text.
- v. In a good data commentary, neither mode (graph or text) is the vehicle for all information.