Chapter 5

How well do they say it?
Clarity, consistency and structure

Learning outcomes

This chapter offers you opportunities to:
- check arguments for clarity and internal consistency
- identify logical consistency in an argument
- check for logical order
- understand what is meant by joint and independent reasons
- identify intermediate conclusions and understand their use

Introduction

In Chapter 3, we saw that there are normally six features to check for when searching for an argument, as summarised in the table on page 47:
- author’s position;
- propositions and reasons;
- a line of reasoning;
- conclusion;
- persuasion;
- use of indicator and signal words.

However, on their own, these features merely help us to identify whether an author is using an argument. They don’t tell us whether the argument is well-structured and consistent. This chapter looks at how authors construct clear, consistent and logical arguments. You will have opportunities to look in more depth at how an argument is structured as a line of reasoning through the use of joint and independent reasons, interim conclusions and logical order.

By understanding how an argument is structured, you can:
- use the structure of the argument to focus reading;
- improve comprehension by understanding how one part of an argument links to another.
Stating the point

Clarity is important to constructing a good argument. Sometimes an author can present a great deal of interesting information but their point of view, or position, becomes lost in the detail. If the author's position is clear, then it is more likely that their audience will grasp what they are trying to say, and make the effort to follow an argument through to the end.

In a good argument, the author's position will be apparent through a number of means, such as:

- the introductory sentences;
- the final sentences;
- the conclusion;
- the overall line of reasoning;
- an overall summary of the argument;
- careful selection of facts so the argument is not lost.

Passage 5.2

Individuals have free will and so can control their own destiny. On the other hand, groups also have an identity. Research by Campbell (1984), for example, has shown that girls who mix with boys are more likely to have seen a fight and become involved in a fight than girls who mix mostly with girls. This suggests that aggressive behaviour is affected by the social environment and isn't just about character. In everyday life, our sense of self is such that we believe we are making independent decisions. We are aware we have choice and we make decisions for ourselves. Groups can also force decisions upon members, sometimes without them realising.

Passage 5.3

This report researched whether a new sports centre should be constructed in region X. Market research suggests that there is little popular demand for another sports centre in the area. However, very few people in the region use sports facilities to improve their health. The government is trying to encourage more personal responsibility for health and fitness. A sports centre would be useful in promoting this objective. People in the area are not aware of health issues and are not interested in sport. There may be government subsidies available.

Activity

Read the following passages. For each, consider:

- Is the author's position clear?
- What makes the author's position clear or unclear?

Passage 5.1

The brain of an elephant is five times larger than that of humans. Some people believe elephants are very intelligent but, even if that were true, are they really five times brighter than humans? But maybe we are looking at this the wrong way. After all, is it fair to compare the brain size of a large animal with that of a small creature? Perhaps it is relative size that matters? Human brains weigh as much as 2.5 per cent of body weight whereas elephants' brains are less than half of a per cent of their total body weight. Proportionally, the brain of a human is ten times greater than that of an elephant. Maybe it is the ratio of brain to body size that matters? If that were the case, then the shrew, with its heavier brain, would be brighter than humans and elephants – and yet shrews do little more than eat.
Internal consistency

Clarity and internal consistency

One important aspect of presenting a clear authorial position is creating a consistent argument, so that all parts of the line of reasoning contribute to the conclusion. Nothing then contradicts or undermines the main message. Inconsistencies make an argument hard to follow, leaving the audience uncertain about what the author is trying to persuade them to believe.

Example 1

Apples are good for your teeth. Acid corrodes. Apples consist mainly of acid so they can't be good for teeth.

Here, the message lacks internal consistency. The reader is left wondering whether apples are good for your teeth or not.

Including opposing arguments

A strong line of reasoning will usually give consideration to alternative points of view, including those that appear to contradict the main argument. A good argument manages such apparent contradiction by:

- making it clear throughout the line of reasoning what position it wants the audience to take;
- making it clear when it is introducing an alternative point of view (see signal words on page 175 below);
- counter arguments to show why the alternative point of view is less convincing;
- resolving any apparent contradictions by showing how the main argument holds true.

Example 2

Apples are better for your teeth than refined sugar snacks. Some people argue that apples are an acid and that acid damages tooth enamel. However, any food, if left on the teeth, is bad for them. Refined sugars are particularly damaging to teeth. Compared with the sugary snacks most people eat, apples provide a more beneficial alternative and have long been recommended by dentists.

Here, the argument is internally consistent: apples are better for your teeth than refined sugar products. All the reasons support this. The opposing view (that acids corrode teeth) is included but its importance is minimised. It is worth noting that the main argument is strong partly because it is worded in a more tentative way that it is easier to defend. It is easier to argue that something is ‘more beneficial than . . .’ rather than making an absolute statement such as ‘Apples are good . . .’, which may not hold true in every circumstance.

Precision

The example above demonstrates that arguments may need to be very precisely worded. Imprecise wording is a common cause of inconsistency, as in the example below.

Example 3

Apples are good for your teeth and have long been recommended by dentists. It may seem strange that this is the case, given that apples consist of acid and acid corrodes enamel. However, the acid is relatively harmless, and certainly apples are more beneficial than alternative snacks made of refined sugar, such as sweets and cakes.

Here, the argument is relatively well structured and is more consistent than Example 1. However, it is still not a consistent argument. The author’s opening statement is that ‘Apples are good for your teeth.’ However, by the end of the passage, the author is arguing that the acid is ‘relatively harmless’ and that ‘apples are more beneficial than alternative snacks’. An argument about the relative benefits is not the same as the absolute statement that ‘apples are good’, so the message is not internally consistent.
Activity: Internal consistency

**Activity**

Read through the following passages.
- Identify whether each is: A internally consistent, or B inconsistent, and why.
- For the inconsistent ones, consider how you could adapt them to make them consistent.

**Passage 5.4**

All drugs which enhance performance should be banned from sport as they confer an unfair advantage on those who take them. Anyone caught taking them should be automatically banned from national and international competition. Sportspeople who take such drugs are not acting in the spirit of fair competition. On the other hand, if someone needs drugs on medical grounds, they should be allowed to compete as they did not intend to cheat.

**Passage 5.5**

Trainers should discourage sportspeople from taking performance enhancement drugs as these can have serious effects upon their health. Some of these drugs have resulted in distorted body shapes, skin conditions, and increased aggression. The long-term effects of some of these drugs are unknown. On the other hand, some individuals with conditions such as asthma need medication which contains those drugs. For them, taking the drugs may be more beneficial than not taking them. Therefore, it would be wrong to ban performance enhancement drugs altogether.

**Passage 5.6**

Reality TV is not delivering what the public wants. Too many programmes are cheaply made, turning a camera on the experiences of ordinary people who are duped into wanting their short period of fame. As a result, investment in quality programmes is declining. There is much less variety on television. The promise of choice heralded by digital TV has not materialised. Far from exercising choice, last night almost the whole nation switched on to watch the final episode of the latest reality show. What has happened to television drama, good comedy programmes and well-researched documentaries?

**Passage 5.7**

The countryside is a lost cause. The green fields and woodlands known as ‘green belts’ that surround our cities are essential to maintain the beauty of the countryside. Over 8 per cent of the countryside is now built up. Green belts are ever more essential to provide lungs to our growing cities, helping them to ‘breathe’. Unfortunately, the countryside is rapidly disappearing as the extensive building of new homes stretches out of the cities. Before long it will be gone and once that happens, it will be difficult, if not impossible, ever to restore the complex ecosystems of lost woodlands and hedgerows.

**Passage 5.8**

Christopher Columbus was courageous in attempting to sail West to find the East Indies as, before then, everyone believed the world was flat and that he would sail over the edge. Fourth-century Christian writers such as Lactanius and Indicopleustes described the world as rectangular, but their views were not widely known. Leading medieval scholars such as Augustine, Aquinas and Albertus knew the world was round, but their mind was on higher religious issues. In Columbus’s time, the scholars of Salamanca had made more accurate calculations than Columbus and, although they knew the shape of the earth, they realised Columbus had under-estimated the distances involved. They opposed his voyage but he persisted. Without his courage, the Americas might never have been discovered.

**Answers: see pp. 79-80.**

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Logical consistency

In clear and consistent arguments, the reasons support the conclusion that the author draws from them. When evaluating an argument, we need to check whether the reasons given by the author do indeed support the conclusion. In other words, we need to check that the argument adds up. When we do this, we are checking for logical consistency.

Sometimes, authors lose track of their own arguments and draw a conclusion that does not follow from the reasons given. Sometimes, there may not be good reasons for the argument and we may feel the author is clutching at straws in the hope we won't notice the lack of logic. For Example 1 below, consider why the reason does not support the conclusion.

**Example 1**

There was a murder near the station last night. There are always young lads hanging around there. One of them probably did it. The local council should ban young people from hanging around the station.

In the example above, the conclusion is that young people should be banned from hanging around the station. The reason given to support the conclusion is that one set of young people is often found near a station where a murder took place. This reason does not support the conclusion because there is nothing to show that:

- those young people did commit the murder;
- even if they did so, other young people would do the same;
- a general ban on young people would prevent future murders.

This is partly a question of lack of evidence. However, it is also faulty reasoning, as the conclusion does not follow from the reasons presented. An alternative conclusion might have been that if the young people were in the vicinity when the murder took place, they might have seen or heard something that would help to solve the case. For Example 2, see if you can identify the conclusion and the reasons given to support it before reading on.

**Example 2**

Behaviour is better in schools in rural areas than in inner city schools. Children brought up in the country have more responsibility for contributing to the family livelihood and care for vulnerable animals. This fosters a more mature attitude and a respect for life in general. Children in inner city schools often have more material possessions but value them less. They show less respect for parents and teachers. Children from the cities should be sent to school in rural schools. This would lead to more children who are respectful and well behaved.

In this case, the conclusion is provided in the last two lines: if children were sent from city to country schools, their attitude and behaviour would improve. The main reason given is that children in rural areas have better behaviour and attitudes.

However, the alleged better behaviour of children in the countryside is attributed to the responsibilities they have at home, not to the schools themselves. As city children would not gain such responsibilities simply by going to rural schools, it does not follow logically that moving school would lead to a change in their behaviour. The reasons provided in the example provide better grounds for an alternative conclusion: that the behaviour of city children might improve if they were given more responsibilities.
Activity: Logical consistency

Activity

Read through the following passages. Decide whether each is logically consistent or not. Give your reasons.

Passage 5.9
The deepest parts of the oceans are known as the abyssal zone. The bathyl zone, which is that part of the abyssal zone found on the continental shelf, is too deep even for light to penetrate. Despite this absolute darkness, animal life still thrives there. Humans form part of the animal kingdom. As animals survive in the bathyl zone, this proves that we do not need light in order to survive.

A consistent  B inconsistent

Passage 5.10
Accidents happen on building sites when workers don’t take sufficient care of health and safety. Many employees are lax in following health and safety guidance. This means that there will be a rise in accidents on building sites over the next year.

A consistent  B inconsistent

Passage 5.11
Although subjects such as sports, media and popular culture involve theoretical understanding of the application of scientific principles, these subjects often have lower status at universities and with the public than subjects such as history and the classics, which are less intellectually demanding. This is partly because the former subjects attract more students from working-class backgrounds. Students who take these subjects go on to earn less than those who take more traditional subjects. This perpetuates working-class people in lower-income jobs. Therefore, working-class students should be encouraged to take traditional subjects, such as history.

A consistent  B inconsistent

Passage 5.12
Layers of sediment are laid down over time, and build up to fill the valleys and seas until they form a sequence of rocks. The oldest rocks are always at the bottom, unless the beds of rock have been overturned, such as by folding or faulting. When there is too much molten lava under the earth or in a volcano, molten rock is forced through the layers of sediment. These are known as igneous intrusions and they harden into volcanic dikes that cut through many layers of sedimentary rock. Therefore, where an igneous intrusion cuts through a sequence of sedimentary rock, it is always more recent than the surrounding layers.

A consistent  B inconsistent

Passage 5.13
It is impossible to find any place where there is absolute silence. Now, Everywhere you go there are mobile phones ringing, people shouting, car horns blaring, music pouring from ghetto-blasters or ringing out in its irritating tinny tones from personal stereos. There is no place where you can go that does not have a sound of some kind breaking the silence. Noise pollution is definitely on the increase.

A consistent  B inconsistent

Passage 5.14
Computers can now compete with humans in complex games such as chess and beat them. This was believed impossible until the end of the last century. Since then, computer memories have become ever larger and faster. Now, very large memories can be stored in tiny spaces. Computers do not feel emotions, a faculty which is needed in order to empathise with other people. Nonetheless, computers will one day be able to out-perform humans at everything.

A consistent  B inconsistent

Answers: see p. 80.
Independent reasons and joint reasons

If an author gives two or more reasons to support a conclusion, these may be either:
- joint reasons, or
- independent reasons.

Joint reasons

In this case, the reasons are connected in some way and mutually reinforce each other.

Example

It is important that employers in Britain actively encourage older people to remain within the workforce. First of all, as the population ages, there won't be enough young people entering the workforce to meet the needs of the economy. Secondly, the economy benefits from the skills and experience that older people have accrued over their lifetimes. Moreover, older people often have rare skills and useful attitudes that cannot be taught or acquired quickly.

Here, all the reasons support the argument but are independent of each other:
- the first is economic (rare skills);
- the second relates to health concerns;
- the third relates to personal finance.

It is useful to identify whether each separate reason is sufficient in its own right to support the argument. Lots of weak reasons do not add up to a good argument, as is demonstrated in the example below.

Example

It is important that employers in Britain actively encourage older people to remain within the workforce. Firstly, older people have a right to a better standard of living. Secondly, many of them will emigrate if they do not remain active here. Thirdly, older people like to meet younger people and rarely get the opportunity outside of the workplace.

The three reasons may all be true in their own right. Having several reasons makes it sound like there must be a good case. However, an employer might consider that these are social issues that do not make a good business case for retaining older employees.

Independent reasons

The author may use several reasons to support the conclusion, each of which may be valid in its own right but have nothing to do with the other reasons given.
Activity: Independent and joint reasons

**Activity**

For each of the passages below, identify whether joint or independent reasons are used to support the conclusion. The conclusions are written in italics.

**Passage 5.15**

Young people over the age of 16 should be allowed to vote. They pay taxes so should have a voice on how their money is spent. They can fight and die for their country so should be entitled to have a voice in the country’s political process. If they have political obligations, they should also have political rights.

**Passage 5.16**

Expeditions leave behind a range of litter, broken equipment and other unwanted items that are gradually ruining the landscape. Few useful discoveries result from the vast numbers of expeditions now taking place. Furthermore, local economies are distorted by the requirements of expedition teams. Expeditions are sometimes unsafe and survival cannot be guaranteed. Therefore, the number of expeditions to the Arctic should be greatly reduced.

**Passage 5.17**

Telling lies is sometimes justifiable. Lies can be hurtful, but the truth can hurt even more. People do not always need to hear the truth – a fantasy can sometimes provide a practical coping mechanism for dealing with difficult circumstances. Moreover, it isn’t possible always to tell the truth because it isn’t clear what constitutes the ‘truth’. For example, exaggeration is a form of lie but it also holds something of the truth. Lies are an important part of social bonding: we lie to maintain friendships and to keep social situations harmonious.

**Passage 5.18**

The author travelled with the band on tour. She visited their homes, stayed in the same hotels, and attended family parties and funerals. Having had her own band for several years, she knows the life of a rock band from the inside. However, as she was never a member of this band and was not in competition with it, she is able to give an objective account of its highs and lows, its music and the lives of the artists. As a result, the book gives us a faithful representation of the life of the rock band.

**Passage 5.19**

Knowledge management is increasingly important for business. Without it, resources are wasted. For example, companies often make poor use of the training and experience of their staff, failing to cascade it to their other employees. Furthermore, businesses that do not manage knowledge well may appear less up-to-date, and therefore less attractive, to potential customers. With the growth of electronically accessible information, businesses need strategies to help staff cope emotionally with information overload.

**Passage 5.20**

It took a long time for the world to appreciate the art of Magritte because he gave the public so few clues about how to interpret his work. His art calls heavily upon the unconscious, but he steadfastly refused investigation into aspects of his own life that might have helped others to understand the workings of his own unconscious. He refused to talk even about the basic events of his early life. As he didn’t agree with interpretations of art based on personal problems and experiences, he offered little to encourage public interpretations of that nature.

Answers on pp. 80-1.
Intermediate conclusions

In longer and more elaborated lines of reasoning, there may be several sets of reasons to support the overall conclusion. In a well-constructed argument, these will be ordered so that:

- similar reasons are grouped together into sets;
- each set of reasons supports an intermediate conclusion;
- all the intermediate conclusions support the main line of reasoning.

The author may draw an intermediate conclusion on the basis of each set of reasons. This helps the reader to hold in mind the different stages of the argument. Intermediate conclusions help to structure an argument, acting as stepping stones between one stage of an argument and the next.

**Example**

Smokers should be given more freedom to smoke and more personal responsibility for the choices they make. Many know that cigarettes carry serious health risks, but these are risks that consenting adults are willing to take. Most smokers plan to give up before the risk becomes extreme. Adults should be allowed to make up their own mind about whether they smoke or not, without warnings on cigarette packaging. Smokers pay at least as much tax and insurance as anyone else. They also pay additional taxes through levies on cigarettes and are often required to pay higher insurance. Despite this, some medical practitioners refuse them health care. Smokers should have the same rights to health care as any other tax-payer. They should also have the same access to public spaces. In some countries, it is becoming almost impossible to find a place to smoke. Smokers are forced outside no matter what the weather. They are becoming social pariahs where once smoking was the most social of activities.

In the example above, the conclusion is at the beginning of the passage: *Smokers should be given more personal responsibility for the choices they make.*

In the version of the example reproduced below, the intermediate conclusions are underlined. Note that they can be used either to introduce a new set of reasons or to summarise reasons already introduced.

There are three sets of reasons in this passage, each linked to an intermediate conclusion. The intermediate conclusions are underlined.

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Many know that cigarettes carry serious health risks, but these are risks that consenting adults are willing to take. Most smokers plan to give up before the risk becomes extreme. *Adults should be allowed to make up their own mind about whether they smoke or not,* without warnings on cigarette packaging. Smokers pay at least as much tax and insurance as anyone else. They also pay additional taxes through levies on cigarettes and are often required to pay higher insurance. Despite this, some medical practitioners refuse them health care. *Smokers should have the same rights to health care as any other tax-payer.*

*They should also have the same access to public spaces.* In some countries, it is becoming almost impossible to find a place to smoke. Smokers are *forced outside no matter what the weather.* They are becoming social pariahs where once smoking was the most social of activities.
Intermediate conclusions used as reasons

Different types of intermediate conclusions

An intermediate conclusion can have two purposes:
- summative;
- to serve as a reason.

**Summative**

Summing up the argument at intermediate points clarifies the argument by providing it in more manageable bites. It can also reinforce the message, reminding the audience of the overall argument. The example on p. 71 uses this approach. In a good argument, the author will:
- organise reasons into logical groups;
- use a sentence or paragraph to summarise each set of reasons; this summary serves as an intermediate, or interim, conclusion.

**To serve as a reason**

An intermediate conclusion can also serve as a reason. The author may need to establish a solid case for an intermediate conclusion before it can serve as a reason. In other words, one set of reasons is used to establish an intermediate conclusion, and then that interim conclusion becomes a reason to support the overall conclusion (as in the table below).

**Example**

Universities want objective methods of marking students' work but objectivity is time-consuming. Lecturers spend a great deal of time checking their interpretations of students' answers. As there is only one correct answer for multiple-choice questions, there are no opportunities for subjective judgements, making the system fairer. These tests can be marked at speed, and objectively, by a computer. Multiple choice offers a quicker and fairer way of marking. With increased numbers of students, universities want to make better use of lecturers' time. Therefore, universities should make more use of multiple-choice tests.

Here, the overall conclusion is that universities should make more use of multiple-choice tests.

The interim conclusion is that *Multiple choice offers a quicker and fairer way of marking.*

The author of the example needs to establish that multiple choice is a quick and objective way of marking in order to argue that universities should use it. The reasons given to support the interim conclusion are that as there is only one correct answer for a multiple-choice question:
- It can be marked objectively.
- It can be marked quickly.

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The structure of an argument using intermediate conclusions

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Intermediate conclusion 1 then becomes Reason 1

Intermediate conclusion 2 then becomes Reason 2

These two reasons then support the overall conclusion

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Activity: Intermediate conclusions

Passage 5.21
Although most smokers say they enjoy smoking, many smokers wish they didn’t smoke. ‘It feels as if I am setting light to my money,’ wrote one correspondent. Cigarettes can account for up to a half of an individual’s total spending. As people are borrowing more money in general, and paying interest on it, the overall cost of cigarettes is sometimes hidden. However, as many smokers are all too aware, smoking does not make good financial sense. The effects on long-term health are equally devastating. Just as smokers are often building up debts in the bank, they are also accruing unseen deficits in terms of their health. It is easy to forget the health implications of smoking. Warnings about illness and death can seem a long way away. Unfortunately, once cancer of the bowel, the lung, the throat, or the stomach sets in, it is often too late to take any action. Moreover, these diseases can strike unexpectedly whilst people are still young. Smokers spread strong, unpleasant odours all around them, affecting other people without their consent. Smoking impairs the sense of smell so smokers do not realise how much they are inflicting awful odours on others. Some believe that smoking outdoors washes all those nasty odours away, but this is clearly not the case. Furthermore, studies of the houses of people who always smoke outdoors, have found that the chemicals found in cigarettes are over seven times as prevalent as in the houses of non-smokers. Noxious chemicals linger, affecting the health of other people, sometimes fatally. Whether outdoors or in, smoking doesn’t simply kill the smoker, it kills other people and this should not be permitted. The government should take strong action to raise awareness of the risks of smoking and to ban it in public places.

Passage 5.22
It is a legal offence to assault other people. Hitting and slapping are forms of assault and cause psychological, if not physical, damage. They should always be considered as examples of legal assault. Although this rule is applied to adults, it is often not recognised in the case of children. Slapping is defended as a useful and necessary form of discipline. It is also argued that children are not independent beings. This is not a valid argument. Children may be dependent on adults but they are still people. Therefore, slapping a child should also count as legal assault.

Passage 5.23
Many people speak out in discussion too quickly because they are anxious about leaving a silence. When questioned, people often acknowledge that they spoke early in order to ensure there was no gap in the discussion. They are not used to silences in conversation and don’t know how to manage them skilfully. They can find silences in discussion to be unnerving and embarrassing. However, silence can be productive. First of all, it allows time for reflection so that speakers can construct a more considered and accurate response, making a more useful contribution to the debate. Secondly, it gives more people the opportunity to speak first. For more productive discussions, we need to be skilled in managing silences.

Answers on pp. 81-2.
Summative and logical conclusions

It is important to note the difference between a summative conclusion, and a logical conclusion.

**Summative conclusions**

Summative conclusions are simply conclusions that draw together previous information into a shorter overall summary. For example, if a text presents two main points of view, a summative conclusion would give a short synopsis of these. Summative conclusions tend to draw a piece of writing or debate to a close, without making a judgement, as in the example below.

**Example 1**

**What causes stomach ulcers?**

It used to be assumed that stomach ulcers occurred as a result of stress. People who worked too hard or worried too much were assumed to produce excess stomach acid which would, in turn, cause ulcers. Many still hold this view. On the other hand, research has indicated that 70 per cent of stomach ulcers could be caused by the bacterium *H. Pylori*, which changes the stomach lining so that it is more vulnerable to the effects of stomach acid. This bacterial infection can be treated with antibiotics, rather than forcing the patient to reduce his or her stress levels. Hence, whilst some believe that stomach ulcers are caused by stress, others now believe that they are caused by infection.

In Example 1, the conclusion is in the last sentence and simply summarises what has gone before. In this instance, the author states the two opposing points of view, and does not use the evidence to draw a logical conclusion about which is the most likely explanation for stomach ulcers. As this example does not have a logical conclusion, it is not an example of an argument. This is an example of a summary with a conclusion.

**Logical conclusions**

A logical conclusion is a deduction based on reasons. It is more than simply a summary of the arguments or the evidence. It will include one or more judgements, drawn from an analysis of the reasons given.

**Example 2**

**How can we predict when volcanoes will erupt?**

Predicting volcano eruption is not an exact science. Monitoring summit activity often cannot help us predict flank activity such as eruptions down the sides of the volcano. Scientists monitoring Mount Etna in Sicily thought they had established a link whereby such flank activity was preceded by summit activity for a period of a few months. However, in 1995 summit activity began but there was not a flank eruption for a further six years. They decided Etna's eruptive cycle was more complicated than they had first thought in terms of the relationship between summit and flank activity. This may be true of other volcanoes too. Consequently, a period of summit activity cannot necessarily be used as a predictor for flank activity.

In Example 2, the conclusion is signalled by the word 'consequently'. The author deducts a conclusion from the reasons, so this is an example of an argument. The conclusion is that when the summit of a volcano shows a lot of activity, this does not necessarily mean that lava will start pouring down the side of the volcano. This is clearly based on a judgement that the recent research on Etna undermines earlier research which had suggested a closer link between its flank and summit activity.
Activity: Summative and logical conclusions

Passage 5.24
Are criminals born or made?
In the 1960s, Jacobs suggested a strong genetic component in criminal behaviour. On the other hand, the psychologist Bowlby argued that criminal behaviour is caused by upbringing rather than genetics and noted that a significant number of criminals grew up in families where they experienced abuse or a lack of emotional warmth. More recently, Wilson and Hernstein suggested that a person is more likely to commit a crime if they have genes that predispose them towards criminality as well as facing additional stressors such as childhood abuse or substance misuse in adulthood. Although genes may predispose people towards crime, this is not a cause. As many criminals have experienced abuse and childhood neglect, it is fairer to argue that crime is the result of environment rather than genes, and that criminals are ‘made’ rather than ‘born’.

Passage 5.25
Are ‘reality’ shows good for television?
In recent years the number of ‘reality’ shows on television has grown substantially. They are cheap to make and producers argue that viewers want to see ‘real people’ on their screens. However, critics complain that reality shows are made at the expense of original drama or current affairs programmes and that the overall quality of television is being reduced. Consequently, some people argue that reality shows are good for TV because they are cheap and popular whilst others argue that they result in poor quality television.

Passage 5.26
What is the true cost of cancelling debt?
The Jubilee organization has called for the cancellation of Third World debt. Concerns have been raised that this will mean serious losses that either commercial banks or Western governments will be forced to meet. Rowbotham suggests that debt could actually be cancelled with little cost to anyone. He argues that the dominant form of money in modern economies is bank credit. Although banks have accountancy rules about balancing assets and liabilities, credit does not exist in a physical form. It is not money sitting around in a vault waiting to be used or loaned – it is numerical or ‘virtual’ money. Consequently, if banks were not obliged to maintain parity between assets and liabilities they could cancel Third World debt without having to move the equivalent amount of money from the reserves to cover this. Therefore, the cancellation relates to ‘virtual’ money and the banks would experience no real financial loss if Third World debt were to be cancelled.

Passage 5.27
Does organic food taste better?
Supporters of organic produce argue that as well as being healthier than commercially produced food, it tastes better. Fillion and Arazi (2002) carried out blind tastings of organic and non-organic juices and milk with trained panelists. They concluded that although organic juice tasted better, there were no taste distinctions between organic and conventional milk. However, supporters of organic produce maintain that it is ‘common sense’ that organic food tastes better as it has been produced under healthier conditions. Hence, although scientific support for organic produce tasting better is limited, consumers who choose organic are convinced it does.

Answers: see p. 82.
Logical order

The line of reasoning, or the overall argument, should lead forwards with a clear direction, rather than hopping from one point to another in a random way, or leading the audience round in circles. In the example below, the author moves from one point to another without direction or logical order.

**Example 1**

Pets add to the quality of life. Any benefits outweigh the costs. However, they can destroy household furniture. Stroking pets is thought to reduce stress. Property values can be affected by the odour animals leave behind them in carpets and curtains. Many people find talking to a pet helps them sort out personal problems. Problems with pets can be sorted out, so they are not insuperable.

The author above could have constructed a more logical argument by:

- grouping similar points together;
- presenting reasons that support their argument first, so as to establish a good case for it;
- considered opposing reasons after they have established their own case, demonstrating why these are not significant or are less convincing.

Note the difference in the example below, which takes a similar position to that above.

**Example 2**

Pets add to the quality of life. This is evident in several ways. For example, stroking pets can reduce stress. Many people find talking to a pet helps them sort out personal problems. There are some disadvantages to having an animal about the house such as damaged furniture and unpleasant odours. However, these problems can easily be overcome. The benefits of having a pet outweigh the disadvantages.

**Dealing with poor logical order**

If you are trying to follow a jumbled argument such as the one in Example 1, it can help to order the arguments for yourself:

- as lists of arguments ‘for’ and ‘against’, or
- as ‘arguments that support the conclusion’ and ‘arguments that do not support the conclusion’.

Consider how you could do this for Example 3, before reading the box below it.

**Example 3**

Nuclear power stations are not a viable source of energy for the future. Nuclear reactors are more expensive to build than fossil fuelled power stations. Fossil fuels such as coal, gas and oil are a dwindling resource so nuclear fuel offers a useful alternative for the future. Nuclear reactors are also very expensive to decommission so may not be efficient over the longer term. Coal costs may rise as fossil fuels become harder to find, making nuclear fuel more attractive. No truly safe way of storing nuclear fuel has yet been found. Research into alternative fuels has been underway for some time, with some success. Solar power and use of methane from waste are just two alternatives to fossil fuels.

<table>
<thead>
<tr>
<th>Arguments for nuclear power stations</th>
<th>Arguments against nuclear power stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fossil fuels will become more expensive as reserves dwindle.</td>
<td>- More expensive to build.</td>
</tr>
<tr>
<td>- Fossil fuels are likely to run out.</td>
<td>- More expensive to decommission.</td>
</tr>
<tr>
<td></td>
<td>- No truly safe way of storing nuclear waste.</td>
</tr>
<tr>
<td></td>
<td>- Other alternatives to fossil fuels exist.</td>
</tr>
</tbody>
</table>
Activity: Logical order

The following passage is not ordered logically. This makes it difficult to follow its line of reasoning. You do not need to be a specialist in the subject to identify how the argument could be better constructed. Write a short list of the ways the passage is poorly organised – then order the sentences into a more logical sequence yourself. The sentences are numbered to help you write out a preferable order.

Passage 5.28

Circadian rhythms

1: In experiments, human volunteers spent several weeks underground in constant light. 2: At first, their natural clock and sleep patterns were disrupted. 3: After a few weeks, they reverted back to the natural circadian rhythm with a 24-hour clock more or less in line with the outside world. 4: Our natural clocks are helped to adjust by exposure to sun-light and do respond to patterns of light and dark. 5: Our bodies remain more responsive to biological rhythms than to the demands of clock time or the distractions of the outside world.

6: Since the mapping of human genes as part of the genome project, we have a greater understanding of circadian rhythms and their role in genetic conditions. 7: Some families have genetic conditions which make them less sensitive to circadian rhythms. 8: This may help explain patterns of sleep disturbances found in those families. 9: Our work patterns, leisure patterns, architecture, lighting, food, drugs and medication compete with our natural clocks. 10: These biological rhythms are known as circadian rhythms and we know they are particularly strong in birds.

11: In humans they are particularly controlled by the suprachiasmatic nucleus (SCN) in the anterior hypothalamus at the base of our brains. 12: If this part of the brain is damaged, a person loses all sense of a natural 24-hour clock, where sleep coincides with night-time. 13: In other people, circadian rhythms are much stronger than was expected. 14: Astronauts, who lose this connection to the sun's rhythms for a long time, find it hard to adjust. 15: Many require medication to help them sleep.

16: Night-workers, even after 20 years on shift patterns, do not adjust circadian rhythms to suit the demands of night working. 17: Certain illnesses such as peptic ulcers and heart disease, as well as increased risk of car crashes, are much more common to night-shift workers. 18: As the long-term effects of disrupting circadian rhythms are yet to be discovered, we should take care to ensure the health of shift-workers and those with genetic conditions that make them less sensitive to the biological 24-hour clock. 19: It may be that conditions associated with mental ill-health, such as schizophrenia and bi-polar disorders, are also linked to malfunctions in circadian rhythms.

Answer

Compare your response with those on pp. 83-4 below.
This chapter looked at some ways of evaluating how well an argument is presented. A well-presented argument is not necessarily the correct argument, but it can be more convincing. The benefits of understanding how to present an argument well are that you are better able to:

- construct your own arguments in a convincing way;
- identify when you are being convinced by an argument because of the way it is being presented, rather than the quality of the evidence and the inherent merits of the case.

The chapter opened by looking at the author's position. This isn't always evident in an argument. However, if you can identify what the author's underlying position is, it is easier to anticipate the logical conclusion and reasons which support it. This aids comprehension and can help to evaluate the quality of the argument. The author's position is usually reflected in the conclusion. It is much easier to construct your own arguments if you are clear what your position is, and draw up a conclusion that reflects it. If you cannot do this, then your thinking may be muddled and further work is needed to establish what you really think and why.

Many of the other themes covered in this chapter follow on from having a clear authorial position. A clear position helps to sort ideas so that those that support the argument are easily distinguished from those that contradict it. This assists with internal consistency as a strong argument will present apparently contradictory information in such a way that it does not undermine the main argument. Indeed, a well-managed consideration of apparent contradictions can strengthen the main argument.

Once it is clear which information supports the argument, it is easier to order the argument in a logical way, so that similar points are grouped together. This helps the audience to see how the different components of the argument link together. A good argument presents materials in a logical order – that is, one which makes the best sense of the material, so that each point seems to follow on quite naturally from the one that precedes it. There can be more than one way of presenting an argument in a logical order. The important point to bear in mind is that the argument should be presented so that it leads the audience forward in an ordered way through the key points in a way that is clear, structured, and makes sense. This is examined further in Chapter 10.

Information about the sources


