

## Topic 4

# Identifying assumptions

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## Aims

- to help students identify assumptions in arguments
- to provide some practice in judging whether or not assumptions are justified

## Introduction

This topic introduces essential skills needed for analysing the structure of arguments (AO1) and for critically evaluating argument (AO2). Students usually enjoy spotting assumptions but easily misuse the word, confusing its critical-thinking meaning with its everyday sense of a statement that may not be true. Being able to identify assumptions is necessary in all AS and A2 units, including the multiple-choice questions, so it is important that students be confident. Additional reading of one of the recommended textbooks that discuss examples at some length could be helpful reinforcement.

## Lesson outline

- 1 Photocopy IS4 and WS4 for each student, and AS4 if you wish them to mark their own work.
- 2 Discuss assumptions for a while before you give out the information sheet. It can be useful to ask students what is meant by an assumption and discuss everyday uses such as 'I assume that you all did the reading I set you last week'. Then, in contrast, write on the board some short topical or amusing arguments containing what critical thinkers describe as an assumption. Here is a genuine example overheard at my son's school: 'That boy's envelope home to parents is addressed to Mr Swale and Dr Swale. Homosexuals must be looking after him.' (The speaker made the assumption that people with doctorates must be male.)
- 3 Now read IS4 with students, emphasising that assumptions are never stated in the text. Discuss the negative or reverse test, which distinguishes assumptions on which conclusions depend from more trivial points that are taken for granted. An example of a minor point taken for granted in an argument in Topic 3 is that all children bring lunch to school in boxes, when some may bring it in bags.
- 4 Ask students to complete the exercise on WS4, then mark it with them. Encourage them to suggest similar examples that they have encountered. Amateur research is often marred by assumptions.
- 5 Further practice in identifying assumptions can be gained from past papers on the OCR website and from BMAT papers, samples of which are available from [www.bmat.org.uk/practice](http://www.bmat.org.uk/practice).
- 6 Encourage students to work through the examples of assumptions discussed in textbooks, such as in Chapter 2 of *AS Critical Thinking for OCR, Unit 2* by McBride, Lally and Wells (Heinemann, 2006) or in Chapter 3 of *Critical Thinking for AS Level* by Van den Brink-Budgen (How to Books, 2005).

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## What is an assumption?

Consider this short argument:

*There is no point in going into the chemist's shop to consult the pharmacist at the moment.  
There is only a woman behind the counter.*

If you are tuned into sexism, you may quickly notice the assumption in this argument: 'Women cannot be pharmacists' or, to put it another way, 'Pharmacists are always male'.

An **assumption** is an **unstated** part of an argument, something which is taken for granted and not mentioned directly because it seems obvious to the arguer. Sometimes the assumption is a sound one and sometimes not, as in the above example. The conclusion of the argument is based on explicitly stated reasons and on the implicit unstated assumption.

The argument could be rewritten as follows:

*There is only a woman behind the counter. (R)*

*Women cannot be pharmacists. (assumption)*

*There is no point in going into the chemist's shop to consult the pharmacist at the moment. (C)*

In analysing arguments, it is just as essential to identify and evaluate assumptions as it is to examine the explicit reasons. This is because the assumptions play an important role in the reasoning process, and the conclusion can only be accepted if both the reasons and the assumptions are convincing.

Sometimes there can be more than one assumption in an argument. See if you can identify at least two in the following:

*It is important to reduce the amount of air travel as it has a significant impact on global warming. Increasing the cost of cheap holiday flights will substantially reduce air traffic.*

An assumption in this argument is that increasing the cost of holiday flights will discourage passengers from taking them. This may not be the case as people may be so keen to fly to holiday destinations that they are prepared to pay more. Another assumption is that holiday traffic is a substantial element in air travel, whereas it may be far outweighed by business and military uses of aircraft.

It is not easy in this case to say whether the assumptions are sound or not. The first is based upon **hypothetical reasoning**, guesswork about future behaviour with a degree of uncertainty. As for establishing whether a substantial proportion of air traffic is holiday-based, this would require research. Therefore, we cannot say that the assumptions in this passage are necessarily **flaws** in the reasoning. What we have achieved is the identification of the missing parts of the argument. These need to be assessed just as critically as the explicitly stated reason that air travel has a significant impact on global warming. Unless we can accept the assumptions that the author has made as valid, we cannot accept the conclusion.



It is important not to confuse the use of the term 'assumption' in critical thinking with its use in ordinary language. We can only use the word 'assumption' for something that is **understood but not stated**. Exaggerated or incorrect statements that are spoken or written can be called **over-generalisations** or **factual errors**, but not assumptions. Any statement that you find written down in a passage should not be called an assumption.

It is possible that a minority of readers might want to query the initial statement in the second argument that 'air travel...has a significant impact on global warming' as it is not backed by any evidence within the passage. They might be tempted to write that 'the author is assuming that air travel significantly impacts on global warming'. However, this would be an incorrect use of critical-thinking vocabulary, even though the word 'assume' is used this way in ordinary speech. **Assumptions are missing parts of the argument, not explicit statements**. A better way to express this observation would be: 'The author makes a causal link between air travel and global warming that is **not backed by evidence** within the passage.'

## Practical tips

When asked to identify assumptions in a passage, you are unlikely to score full marks if you simply write them out. It is necessary to clarify why the assumption may be false by pointing out the alternative possibility. The word 'whereas' is useful in this context. Sometimes you may encounter questions that ask what needs to be assumed for a statement to be true and what the alternative possibilities are.

You will also often be asked to identify **flaws** or **weaknesses** within an argument. If you can see that assumptions are being made and they are clearly false, these count as flaws. However, the assumptions that authors make in arguments are often based on a consensus of values. Here is an example:

*Twenty per cent of the people in the world own 80% of its wealth. Clearly, action needs to be taken to redress the balance.*

There is an assumption here that gross global inequalities are unacceptable. However, it is a view that the majority would accept, so it would be difficult to make a case for this being a flawed argument because of its assumption. Try to remember to precede the word 'assumption' with an adjective such as 'false' or 'sound'.

To help you identify crucial assumptions, use the **negative** or **reverse test**. Convert what you think is an assumption to its opposite and see whether the conclusion still holds. This is illustrated below using the first argument:

*There is only a woman behind the counter. (R)*

*Women **can** be pharmacists. (reversed assumption)*

*There is no point in going into the chemist's shop to consult the pharmacist at the moment. (C)*

Clearly the argument falls apart once the assumption is changed, demonstrating that the assumption does indeed play a crucial role in the argument. As women can be pharmacists, the woman behind the counter could be one, so there would be a point in going into the shop.



The same applies to the third argument:

*Twenty per cent of the people in the world own 80% of its wealth. (R)*

*Gross global inequalities are **acceptable**. (reversed assumption)*

*Clearly, action needs to be taken to redress the balance. (C)*

Avoid writing about trivial assumptions that do not relate significantly to the conclusion of an argument. To illustrate this point, look at a briefer version of an argument already encountered in Topic 3.

*Although some people claim that schools should not interfere with what children eat, general health and academic performance are enhanced by a balanced diet. A diet lacking fresh fruit and vegetables leaves children more vulnerable to illness and absence from school. Some parents are not aware that lunch-box treats may be unsuitable fare for their child. Certain food additives found in sweets and fizzy drinks may make some children hyperactive, and hyperactivity makes children unlikely to take in detailed instructions. A school's priority must be the effective education and welfare of children, therefore schools should control the content of students' lunch boxes.*

Someone could point out that the passage assumes that all children bring their lunches in boxes, whereas a few may bring it in bags. This is an assumption but not a crucial one. The reverse test shows that it makes little or no difference to the main conclusion. The reverse of the assumption is:

*Some children do not bring their lunch in boxes.*

But this does not interfere with the conclusion that the contents of lunch boxes should be controlled. At most, a few students might temporarily escape through a loophole in the rules by bringing their lunch in bags instead of boxes, and others might perceive this as unfair until their schools swiftly reworded the rules to include all lunch containers, but the health of the majority would still benefit from the enforcement of the lunch-box rule. It should be clear that this issue of bags as opposed to boxes is a minor quibble that is largely irrelevant to the thrust of the argument and its conclusion. Remember that the assumptions you should identify and write about in examinations are those upon which the main conclusion depends. Using the reverse test to check the significance of assumptions should increase your confidence.

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Identify the assumptions in each of the following arguments, applying the reverse test before you make up your mind. Sometimes there may be several assumptions. Write them in the spaces provided and explain why they are assumptions. Then evaluate whether they are likely to be false or sound assumptions, or discuss whether it would be possible to find this out.

- 1 Since Jack Straw made his speech against Muslim women wearing the veil, attacks on Asians in the streets of Britain have increased. Politicians should clearly be more guarded in their remarks about ethnic minorities.

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- 2 Swedish teaching methods produce excellent results. A British teacher at a secondary school tested his year 10 group's ICT skills after he had taught them using OFSTED-recommended British methods for 3 months. Their average score was 45%. He then visited two Swedish schools and was so impressed by their methods that, on his return, he used the methods on his year 10 class. After 3 months of this, he gave them a similar test to the previous one and the average score was 80%.

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- 1 **Assumption:** The attacks on Asians increased in response to Straw's remarks and not for other reasons, such as terrorist threats.

**Evaluation:** It would be difficult to establish the truth of this assumption as motives for racist attacks are not easy to discover.

There could also be an assumption that increased figures reflected more attacks on Muslims and not, for example, on Buddhists or Hindus. However, this is not necessarily the case, as racist attacks are sometimes carried out against other ethnic groups who vaguely resemble the group on whom the media are focusing at the time.

- 2 **Assumption:** The improved results that the teacher got with his year 10 ICT group could be expected in other age groups and subjects if Swedish methods were used.

**Evaluation:** This could only be established by trials. The passage gives no evidence to support it, so the assumption is not sound.

**Assumption:** The group's improved score was due to the changed teaching methods and not other factors, such as the students' increased experience and maturity.

**Evaluation:** It is impossible to separate the many factors that lead to student success, especially on the basis of a single trial, so this assumption is not sound.

**Assumption:** The teaching methods adopted by the two Swedish schools visited were typical of Swedish methods in general.

**Evaluation:** This could only be established by investigation of the schools concerned comparing them with the rest of the Swedish educational system.

- 3 **Assumption:** The discrepancy between the GCSE results of Rainhall City Academy and the nearby comprehensive is reflected in similar contrasting results between new city academies and comprehensives nationwide.

**Evaluation:** On the basis of the passage alone, there is no evidence to suggest this so the assumption appears unsound, although investigation of league tables could settle the matter.

**Assumption:** A high pass rate at GCSE means that a school is successful.

**Evaluation:** This might be disputed if results at other levels were relatively poor or if criteria other than academic ones were used to measure success. However, it is generally accepted that GCSE results are one way of measuring a school's success so many would accept this assumption as justified.

- 4 **Assumption:** Voter turnout drops with age so the 16-year-old rate would be lower than for 18–24-year-olds.

**Evaluation:** This is based on hypothetical reasoning as 16-year-olds currently cannot vote. The assumption is not sound.

**Assumption:** If turnout for an age group is likely to be low, there is no point in giving any members of that age group the vote.

**Evaluation:** This is poor reasoning, which would only be consistent if the arguer were to suggest withdrawing the vote from other age groups with poor turnout, such as 18–24-year-olds. There is no reason to deprive interested voters of the vote simply because their peers are uninterested.