

Chapter 8: Exercises

Hone your critical reasoning skills with the following exercises:

- 1 Affirming and denying
- 2 Converting claims: Converting statements
- 3 Converting claims: Using conversions in arguments
- 4 Hidden assumptions
- 5 Qualifiers

1. Affirming and denying

Concentrating just on the arguments and not on the truth of the premises or conclusions, decide which of the following are logically valid.

1 All professional golfers are competitive. Lewis Hamilton is competitive. Therefore, Lewis Hamilton is a professional golfer.	2 If Lisbon is in Portugal, then it is in Europe. Lisbon is in Europe. Therefore, Lisbon is in Portugal.
3 All metals are conductors. Carbon is a metal. Therefore, carbon is a conductor.	4 All corporate lawyers are wealthy. Bill Gates is wealthy. Therefore, Bill Gates is a corporate lawyer.
5 All Stephen King's novels are very popular. The novel <i>Carrie</i> is very popular. Therefore, <i>Carrie</i> is a Stephen King novel.	6 All oboe players perform in rock bands. Mick Jagger is an oboe player. Therefore, Mick Jagger performs in a rock band.
7 All professional footballers earn large salaries. The managing director of IBM is a professional footballer. Therefore, the managing director of IBM earns a large salary.	8 All American presidents take office below the age of 30. Richard Nixon was an American president. Therefore, Richard Nixon took office below the age of 30.
9 All composers are very creative. Picasso was very creative. Therefore, Picasso was a composer.	10 All Italians live in the European Union. Angela Merkel lives in the European Union. Therefore, Angela Merkel is Italian.
11 All golfers are less than five feet tall. Donald Trump is a golfer. Therefore, Donald trump is less than five feet tall.	

Answers: 3, 6, 7, 8, 11

2. Converting claims: Converting statements

Which of the following statements can be converted?

- 1 If Paul is divorced, he must have been married.
- 2 If Colin is in our running club, he may be one of our members, who are over 70.
- 3 If Charles is my uncle, then we must be related.
- 4 If Jayne has won the lottery, then she must have bought a ticket.
- 5 If Janet is studying nursing, she may be one of the care assistants at the local clinic.
- 6 If X is divisible by 8, then it is divisible by 2.

Answers: 2, 5

3. Converting claims: Using conversions in arguments

In which of the following arguments are conversions used consistently?

- 1 The minister of health is wrong in saying that public safety cannot be guaranteed without imposing lockdown measures. We all know that lockdown measures cannot guarantee public safety.
- 2 A majority of the electorate support the belief that we should have regular council meetings open to the public. So, on democratic grounds, the permanent officials can't dismiss the fact that open council meetings are widely supported by the public.

Answer: 2

4. Hidden assumptions

Read the following arguments and identify the hidden assumptions.

- 1 **Algorithms – social implications**
As the A level fiasco reveals, we need to reconsider the social implications of algorithms and the data that supports them. Therefore we must have an open debate.
- 2 **Algorithms – the average**
Algorithms supported by machine learning aim not to replicate the decisions of experts but the average decision-making from past data. This restricts any society that aims to improve the lives of its people.
- 3 **Immigration**

The lives of many people over the last few decades have been blighted by the stagnation of wages, the rise of the gig economy, the lack of housing and the imposition of austerity. To tackle these we must introduce stricter measures to control immigration.

4 Voting in Parliament

For too long Parliament has been ruled by a tribal, ideological, two-party system that relieves MPs of the burden of having to think about issues. If countries can devise systems to reflect the shades of support that millions of voters have for different candidates in systems that use lists of preferences and proportional representation to reflect their opinion, we can surely do something similar to reflect the shades of opinion of a mere 635 MPs? There is now the technology around to do this almost effortlessly.

Answers:

- 1 Algorithms – social implications: We need to have a sound understanding of the social implications of algorithms and the only way of developing this is through a debate that is open and transparent.
- 2 Algorithms – the average: Improving the lives of people calls for creativity, innovation and excellence, all of which is sacrificed by algorithms that push people towards the average.
- 3 Immigration: The reason why many people’s lives are blighted in this way is that immigrants steal their jobs, exploit the benefits system and take the available housing.
- 4 Voting in parliament: A system registering their different shades of opinion and the strength of their support on issues would force MPs to genuinely think about the issues, rather than just follow dogma.

5. Qualifiers

It’s easy to slip into a categorical claim (‘all’, ‘every’, ‘always’, etc) to avoid the effort of weighing up the evidence carefully and selecting just the right qualifier (‘almost all’, ‘almost half’, ‘few’, etc) that reflects the right strength. They also give us a sense of instant certainty, that we have suddenly uncovered something which makes things so much clearer.

Read the following arguments and explain what’s wrong with them.

1 Optimism

In the hands of skilful writers such instant clarity can also be very witty. Much of the humour in the work of Oscar Wilde was of this type. In *Lady Windermere’s Fan* he writes:

If you pretend to be good, the world takes you very seriously. If you pretend to be bad, it doesn’t. Such is the astounding stupidity of optimism.¹

What’s wrong with it?

2 Dividing people into good and bad

Consider this example, again taken from *Lady Windermere’s Fan*.

It is absurd to divide people into good and bad. People are either charming or tedious.²

¹ Oscar Wilde. ‘Lady Windermere’s Fan’ in *The Importance of Being Ernest and Other Plays* (London: Penguin, 1987), p. 15.

What do you think is wrong with this?

3 Philanthropic people

The following line is taken from Oscar Wilde's *The Picture of Dorian Gray*.

Philanthropic people lose all sense of humanity. It is their distinguishing characteristic.³

What's wrong with the argument?

4 Sherlock Holmes

In Arthur Conan Doyle's stories involving Sherlock Holmes the intention is different, but it works in just the same way, in this case to demonstrate Holmes' legendary skills of deductive detection:

'Surely,' answered Holmes, 'it is not hard to say that a man with that bearing, expression of authority, and sun-baked skin is a soldier, is more than a private, and is not long from India.'⁴

Again, what do you think is wrong with this argument?

Answers:

- 1 The force of this argument lies in the absolute 'whenever', 'always' or 'on every occasion'. He is arguing that 'Whenever you pretend to be good', or 'On every occasion that you pretend to be good' the world takes you seriously, and the equivalent for 'Whenever you pretend to be bad' or 'On every occasion you pretend to be bad'. The most that he can probably argue is 'On a few occasions' or 'Sometimes' the world takes you seriously when you pretend to be good, or doesn't take you seriously when you pretend to be bad.
- 2 There are two problems with this. First, the force of this argument rests upon the hidden qualifier 'all'. He is arguing that 'all' people are either tedious or charming. It is clear that the most he can probably argue is that 'some' people are charming and 'some' people are tedious; others can be neither tedious nor charming, while some can be both.

Second, in bringing two or more ideas together in this way he creates a compound proposition. In this case it is a disjunctive or alternative proposition that describes the familiar 'either/or' relationship between two ideas: either they are charming or they are tedious. In this example, he uses the exclusive sense of 'or' in the statement, which means that both disjuncts cannot be true: someone cannot be both charming and tedious, when we all probably have examples of people being just that.

This is the fallacy of False Dilemma, which someone commits when they assume that the problem they're dealing with has an either/or solution – that there are just two alternatives – when in fact there may be several. In political, religious and moral controversies attempts are often made to convince us that there are only black and white choices available, although most of the decisions we make are not of this type.

² Wilde, 'Lady Windermere's Fan', p. 17.

³ Oscar Wilde. *The Picture of Dorian Gray* (Oxford: Oxford University Press, 1974), Ch. 3, p. 35.

⁴ Arthur Conan Doyle. 'The Greek Interpreter' in *The Memoirs of Sherlock Holmes* in *The Complete Sherlock Holmes' Short Stories* (London: John Murray & Jonathan Cape, 1980), pp. 481-2.

- 3 The force of the argument lies in the implied claim that 'all' philanthropic people lose their sense of humanity. The most he can argue is that this is probably true of 'some' philanthropic people.
- 4 Once you analyse the argument you can see it takes the following form:
 - 1) (All) Men who have this bearing, an expression of authority and sun-baked skin are soldiers higher than the rank of private and recently returned from India.
 - 2) This man has this bearing, an expression of authority and sun-baked skin.
 - 3) Therefore, he is a soldier higher than the rank of private and recently returned from India.

As you read the story the argument seems persuasive enough, but, when you bring to light the hidden qualifier 'all', the weakness of the major premise is revealed. It's not true that *all* men with this bearing, an expression of authority and a sun-baked skin are soldiers higher than the rank of private and recently returned from India. There may be any number of explanations for someone having these three characteristics.

What Holmes means, of course, is that 'many' men who have them are soldiers higher than the rank of private and recently returned from India and, therefore, this man is 'probably' one too. But this sucks all the certainty out of the argument, leaving it seriously weakened.