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Critical reasoning: Reading 3

OER University

The aim of this course is to provide an opportunity to acquire critical thinking tools to critically analyse and evaluate knowledge claims. These tools are crucial to making informed decisions in study, work and private situations. Reading 3 explores how to identify and analyse arguments.



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The original course materials on which this reading is based were developed by
Dr Elbie van den Berg
with curriculum and learning design support from
Dr Gerda Mischke;
and were revised slightly for OERU by
Mr Tony Mays
in consultation with
Dr Elizabeth Archer
Mr Callum Scott.

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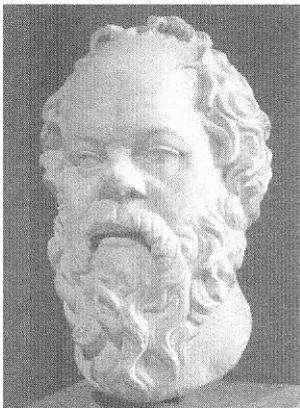
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TOPIC 3: Identifying and analysing arguments

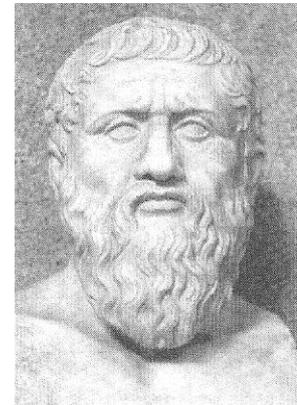
If you actively participate in the learning opportunities provided in Topic 3, you will acquire the competence to:

- identify arguments
- analyse simple and complex arguments.

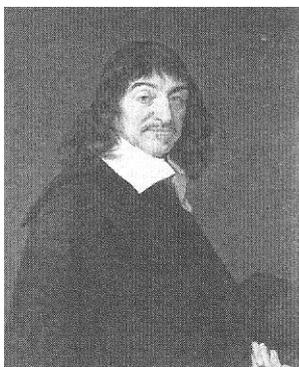
As part of your induction process into critical reasoning, we would like to introduce you to Socrates, Plato and Descartes, three well-known and famous philosophers, and Thrasymachus, a relatively unknown thinker and exponent of the sophists, who became famous in Athens during the 5th century BC:



Socrates (pronounced: s.kr.ti.z) (c.469 – 399 BC), is the most enigmatic figure in Greek philosophy, known only through the classical accounts of his students. Plato’s dialogues are the most comprehensive accounts of Socrates.



Plato (pronounced: ple.to.) (c. 428 – 347 BC), is the best known and most widely studied of all the ancient Greek philosophers. Along with his teacher, Socrates, and his student, Aristotle, Plato helped to lay the foundation of science and Western philosophy.



René Descartes (French pronunciation: [..ne deka.t], (1596 – 1650), was a French philosopher. He has been dubbed the “Father of Modern Philosophy”, and much of subsequent Western philosophy is a response to his writings, which continue to be studied closely to this day. In particular, his *Meditations* continues to be a standard text at most university philosophy departments.

As you can see from their pictures, the gentlemen were born quite some time before you drew your first breath. However, their arguments form part of the classic history of the subject field Philosophy and as such you will see them in action below.

3.1 What is an argument?

Activity 1

Tune into a local Talk Radio station and/or watch a debate in a current affairs or news broadcast on TV. Then think about the following question.

QUESTIONS

- (1) What, according to you, is an argument?
- (2) What distinguishes a 'good' or 'convincing' argument from a 'bad' or 'unconvincing' argument?

Now we will engage with the transcript of an argument on the topic of Affirmative Action as practised in South Africa. Before we begin:

- (3) Write down your own opinion on the issue of affirmative action in your journal.
- (4) Now read the following transcript. Whose argument do you find most convincing and why?

Transcript

Edward: All human beings deserve equal treatment, regardless of gender or skin colour. It is a matter of fairness that all people of good will and rational thinking should be able to agree on. Isn't that what South Africa's Constitution is all about? Isn't that what the feminist movement was originally all about? The underlying principle is to treat all people, regardless of gender or skin colour equally. To discriminate against anyone on the basis of gender or race, white males included, is inherently unfair and hence ethically unjustified.

Samantha: So, Edward, you are claiming that all discrimination on the basis of race and gender is inherently unfair. But have you considered the damage caused by past discrimination? No one can deny the South African history of racism and genderism. If the effects of that history were behind us, affirmative action would certainly be unnecessary. But the fact of the matter is that those effects of past discrimination are not behind us. Look around you and tell me who still have the capital and property rights in their hands. If we really believe in justice and equal opportunity, then we have to compensate for the effects of past discrimination on the basis of race and gender.

Edward: Certainly, Samantha, compensatory justice is a noble ideal. But there is a serious flaw in your argument. Compensatory justice for one group brings harm to another, and when the harmed group is not responsible for the plight of the other groups, you are punishing the innocent for the sins of their ancestors. To discriminate against a young white male or a person from a minority group on the basis of what happened before they were born is certainly not fair.

Samantha: I hear what you say, Edward. But I firmly believe that affirmative action is the only way to overcome current racism and genderism. Women remain subject to sexual harassment, and minority

groups remain subject to stereotyping that continues to take its toll. You can hear it in casual conversations about women and minority groups and you can study the statistics to discover how bad it is.

Edward: Honestly Samantha, do you really believe that affirmative-action programmes will solve the core problem of discrimination, be it against blacks, whites, women or minority groups? Whatever the purpose of affirmative action, the result is racial tension and increased gender polarisation. A lot of white males and persons from minority groups justifiably feel cheated by affirmative action which denies them the jobs and promotions they are qualified for because they are white males or from a minority group. Affirmative action is thus not bringing us to a colour-blind and gender-blind society but to an increasingly polarised one.

Samantha: You know, Edward, I have never said that affirmative action programmes will eradicate discrimination. My point is that affirmative action is a way to provide compensation for injuries suffered in the past and a way to remove benefits that were undeservedly enjoyed by those who belonged to the dominant group.

Edward: Tell me, Samantha, do you justify preferential treatment programmes solely on the principle of compensation for past injuries?

Samantha: Yes indeed, I do. And I believe it is wrong to think that programmes geared to providing preferential treatment are objectionable, given past practices of discrimination based on racism and genderism.

Edward: But how can you claim this? In my opinion, preferential treatment is nothing but reverse discrimination, founded on racism and genderism. Your argument is intellectually inconsistent in the sense that you now support preferential treatment while you opposed it in the past. Reverse discrimination thus undermines equality because it violates the very idea of equal justice under law for all citizens. What is more, reverse discrimination is prohibited by our Constitution and ethical commitment to equal justice for all.

Feedback

Critical reasoning is about arguments: their construction, analysis and evaluation. It is therefore important to understand what we mean by the term “argument”.

The term “argument” can be used in three different senses:

- (1) a quarrel or fight between two or more people
- (2) a group of statements intended to establish the truth or acceptability of a claim
- (3) an exchange between two or more people who disagree with each other, in which each person gives reasons to support his or her position.

To bring out the different senses of the term “argument”, consider the sentence:

The philosophy lecturer had an argument.

If we use **sense (1)** above, the sentence might continue as follows:

The philosophy lecturer had an argument *with a sociology lecturer in the local bar and was taken to hospital*.

If we use **sense (2)** above, the sentence might continue as follows:

The philosophy lecturer had an argument *which, he claimed, established the truth of the proposition "God exists"*.

If we use **sense (3)** above, the sentence might continue as follows:

The philosophy lecturer had an argument with his colleagues after they disputed his claim that God exists.

When we talk about an argument in critical reasoning, we do not use it in sense (1). That is, we do not mean a quarrel between two persons.

In critical reasoning, the term "argument" is used in senses (2) and (3) only. The following two extracts are examples of arguments in the philosophical sense. The first is from Descartes's *Meditations*:

For, since I am accustomed to the distinction of existence and essence in all other objects, I am readily convinced that existence can be disjoined even from the divine essence, and that thus God can be conceived as non-existent. But on more careful consideration it becomes obvious that existence can no more be taken away from the divine essence than the magnitude of its three angles together (that is, their being equal to two right angles) can be taken away from the essence of a triangle; or than the idea of a valley can be taken away from the idea of a hill. So it is not less absurd to think of God (that is, a supremely perfect being) lacking existence (that is, lacking a certain perfection) than to think of a hill without a valley.

The second extract is a discussion, recorded in Plato's *Republic*, between Socrates and Thrasymachus, on what is just and right:

Thrasymachus: ... I say that "right" is the same thing in all states, namely the interest of the established ruling class; and this ruling class is the "strongest" element in each state, and so if we argue correctly we see that "right" is always the same, the interest of the stronger party.

Socrates: ... You say that obedience to the ruling power is right and just?

Thrasymachus: I do.

Socrates: And are those in power in the various states infallible or not?

Thrasymachus: They are, of course, liable to make mistakes.

Socrates: When they proceed to make laws, then, they may do the job well or badly.

Thrasymachus: I suppose so.

Socrates: And if they do it well the laws will be in their interest, and if they do it badly they won't, I take it.

Thrasymachus: I agree.

Socrates: But their subjects must obey the laws they make, for to do so is right.

Thrasymachus: Of course.

Socrates: Then, according to your argument, it is right not only to do what is in the interest of the stronger party but also the opposite.

Thrasymachus: What do you mean?

Socrates: My meaning is the same as yours, I think. Let us look at it more closely. Did we not agree that when the ruling powers order their subjects to do something they are sometimes mistaken about their own best interest, and yet it is right for the subject to do what his ruler enjoins?

Thrasymachus: I suppose we did.

Socrates: Then you must admit that it is right to do things that are not in the interest of the rulers, who are the stronger party; that is, when the rulers mistakenly give orders that will harm them and yet (so you say) it is right for their subjects to obey those orders. For surely, my dear Thrasymachus, in those circumstances it follows that it is right to do the opposite of what you say is right, in that the weaker are ordered to do what is against the interest of the stronger.

The first extract is an example of the meaning of the term “argument” according to **sense (2)** above. In other words, “argument” used in this sense means a group of statements intended to establish the truth of a claim. The second extract is an example of the meaning of “argument” according to **sense (3)** above. That is, “argument” used in this sense means an exchange or debate between two or more people who disagree with each other, in which each person gives reasons to support his or her position. You will notice that we could express Edward and Samatha’s arguments in the form of sense (3).

We will concern ourselves mostly with arguments in the sense of (2) in the sections which follow.

Here is a definition of an argument:

*An **argument** is a group of statements. One of these statements is the conclusion of the argument. The other statements are the premises that are intended to convince the reader that the conclusion is true.*

Activity 2

Consider the passages below and say which of them are arguments, as understood in the definition provided above. To help you to complete this activity, you might find it useful to visit the online references. These explain in more detail what an argument is and how to recognise arguments.

- (1) South Africa is a large country with a population of over 30 million people, many of whom are sports enthusiasts.
 - (2) She has been unhappy since you went away.
 - (3) "Farmer Brown chickens taste so good because they eat so good."
 - (4) People have no right to expect others to pay for the harm they willingly inflict upon themselves. Therefore, people who smoke cigarettes should be forced to pay for their own medical care.
 - (5) "Your fool! How dare you say that philosophy is the elaboration of the obvious!"
-

Feedback

- (1) This is not an argument because there are no statements in the sentence that are intended to support the truth of a claim advanced by an arguer.
- (2) This is not an argument because it does not claim anything.
- (3) This is not an argument but an utterance that is aimed at advertising food.
- (4) This is an argument because the premise, "People have no right to expect others to pay for the harm they willingly inflict upon themselves" is intended to serve as a reason for accepting the claim, "People who smoke cigarettes should be forced to pay for their own medical care".
- (5) This is not an argument but a utterance by someone involved in a quarrel about the nature of philosophy.

In the next study section we will explore what premises and conclusions are and we will identify premises and conclusions in arguments. You will also have the opportunity to apply the knowledge and skills you have gained by analysing arguments on your own.

3.2 Analysing arguments

3.2.1 Identifying premises and conclusions

Before we can identify premises and conclusions in arguments, we need to know what is meant by "premise" and "conclusion".

Premise	Conclusion
<p>Premises are those statements in an argument that have the function of supporting the conclusion. Premises therefore provide reasons for accepting the conclusion of an argument, although not all reasons are good reasons or relevant reasons.</p>	<p>Conclusions are those statements in an argument which the premises are intended to support. The purpose of an argument is to establish the truth or acceptability of the conclusion. A sound argument is one in which the conclusion is shown to be true or acceptable because it follows from the truth or acceptability of the premises and the valid structure of the argument.</p>

Let us look at the following argument to explain what premises and conclusions are:

My nose itched this morning. So I am going to be upset later today.

In this argument the **first statement is a premise** and the **second statement is a conclusion**. It is obvious that the conclusion is **not** supported by the premise. There is no relation between my being upset later today and the fact that my nose itched this morning. When we analyse arguments it is important to identify **premises** and **conclusions** clearly. In the online references you will find a detailed discussion on how to identify premises and conclusions in arguments. Study the relevant sections carefully and complete the activity that follows:

Activity 3

Identify the premises and conclusions in the following arguments:

- (1) If President Obama were wise, then he would withdraw his military forces from Iraq. He has withdrawn his forces from Iraq. Therefore, he must be wise.
- (2) Abortion is morally justified because a woman has a right to decide what happens to and in her body.
- (3) Since there are no mental diseases, there can be no treatments for them.
- (4) Prisons in South Africa are a failure. First, they do not rehabilitate anyone. Second, they don't so much punish as provide free room and board. Third, they bring criminals together, thereby allowing them to swop information and refine their felonious offences. Finally, those who have spent time in prison are far more likely to commit additional crimes than those who have never been in prison.
- (5) Capital punishment is morally wrong. It consists of killing human beings. The killing of human beings is morally wrong.

Feedback

We will help you with answers to examples (4) and (5). Apply the knowledge you have gained from our discussions and explanations and complete activities (1), (2) and (3) on your own.

(4)

A good way to identify premises and conclusions in arguments is to underline the signal words, that is, the premise and conclusion indicators. In the table below we provide two lists of phrases that could serve as indicators to identify premises and conclusions. You may find these premise and conclusion indicators helpful when you have to identify premises and conclusions in arguments:

Indicators of premises	Indicators of conclusions
because	therefore
for	in conclusion
if ...	so
moreover	it follows that
since	we can conclude that
for the reason that	consequently
given that	this shows that
whereas	accordingly

Indicators of premises	Indicators of conclusions
insofar as firstly, secondly, thirdly, etc seeing that in the light of	subsequently as a consequence thus hence then ...

Let us now do example (4) together:

Prisons in South Africa are a failure. First, they do not rehabilitate anyone. Second, they don't so much punish as provide free room and board. Third, they bring criminals together, thereby allowing them to swap information and refine their felonious offenses. Finally, those who have spent time in prison are far more likely to commit additional crimes than those who have never been in prison.

To identify the premises and conclusion of the argument, we underline the premise and conclusion indicators. This is done in the following way:

*Prisons in South Africa are a failure. **First**, they do not rehabilitate anyone. **Second**, they don't so much punish as provide free room and board. **Third**, they bring criminals together, thereby allowing them to swap information and refine their felonious offences. **Finally**, those who have spent time in prison are far more likely to commit additional crimes than those who have never been in prison.*

In this argument the words “first”; “second”; “third”; and “finally” serve as premise indicators. These signal words help us to identify the premises.

The **premises** of the argument are:

- “They [prisons] do not rehabilitate anyone”;
- “They [prisons] don't so much punish as provide free room and board”;
- “They bring criminals together, thereby allowing them to swap information and refine their felonious offenses”; and
- “Those who have spent time in prison are far more likely to commit additional crimes than those who have never been in prison”.

The **conclusion** of the argument is: “Prisons in South Africa are a failure”.

Let us now do example (5) together:

Capital punishment is morally wrong. It consists of killing human beings. The killing of human beings is morally wrong.

In this argument there are **no premise or conclusion indicators**. How, then, do we identify the premises and conclusion of arguments, where indicator words were excluded? When we come across arguments where premise and conclusion indicator words or phrases have been left out, we could apply the principle of ‘charitable interpretation’. This means that the argument should be interpreted in such a way that the premises give the strongest support for the conclusion. In our opinion, there is no sense in dismissing an argument just because its premises and conclusion are not explicitly indicated.

Let us apply the principle of ‘charitable interpretation’ to the argument in example (5).

Capital punishment is morally wrong. It consists of killing human beings. The killing of human beings is morally wrong.

For the premises to supply the strongest support for the conclusion, we can **rewrite** or recast this argument in the following way:

The killing of human beings is morally wrong. Capital punishment consists of killing human beings. Therefore, capital punishment is morally wrong.

The **conclusion** of the argument is: “Capital punishment is morally wrong”.

The **premises** of the argument are: “The killing of human beings is morally wrong” and “Capital punishment consists of killing human beings”.

3.2.2 The structure of arguments

A full analysis of an argument not only identifies which statements are premises and which are conclusions, but also identifies the **structure of the argument**. The structure shows how the conclusion of an argument is related to its premises. Note that premises and conclusions are related to each other in different ways in various arguments. Sometimes a premise supports the conclusion **independently**; at other times the premises support the conclusion **interdependently**. You will find more information about the structure of arguments in the online references. Here we will only explain briefly the two different ways premises and conclusions are related to each other, by giving you two examples.

The following is an example of a **simple argument**, where the premises support the conclusion **independently**:

Abortion preserves the mother’s rights over her own body. It also prevents the birth of unwanted children. Therefore, abortion should be made legally available.

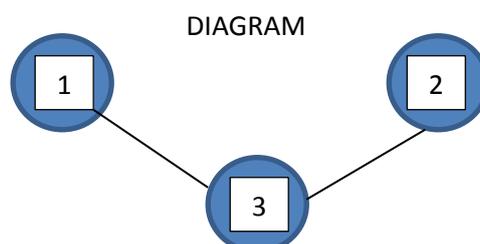
Let us bracket and number the statements of the above argument:

[Abortion preserves the mother’s rights over her own body]¹.

[It also prevents the birth of unwanted children]².

Therefore, [abortion should be made legally available]³.

Statement 1 supports the conclusion **independently** of statement 2 (assuming it is true or acceptable) and statement 2 supports the conclusion **independently** of statement 1 (assuming it is true or acceptable). We can represent the structure of this argument in the following way:



Now, let us take an example of a **simple argument** in which the premises support the conclusion **interdependently**.

All human beings are mortal. Sue is a human being. Therefore, Sue is mortal.

Let us bracket and number the statements of the above argument:

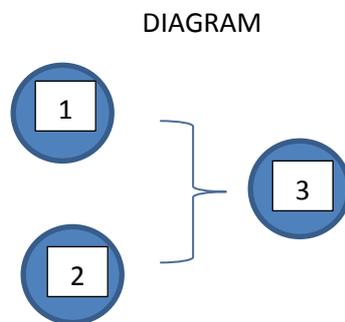
[All human beings are mortal]¹.

[Sue is a human being]².

Therefore, [Sue is mortal]³.

Statement 1 and statement 2 support the conclusion **interdependently**. Statements 1 and 2 together **conclusively** support the conclusion (assuming that **both** premises are true or acceptable).

We can represent the structure of this argument in the following way:



Note: Not all arguments are complete. Sometimes an argument has a **missing premise**. A full analysis of an argument requires us to fill in the missing premise. A premise is missing in an argument if, without it, the premises do not provide sufficient support for the conclusion, given that the premises are true. For example:

John is a poor student because he spends his time reading comic books and magazines.

This argument requires the further premise:

students who spend their time reading comic books and magazines are poor students

in order for the premises to provide sufficient support for the conclusion, given that the premises are true. Fully stated, the argument is as follows:

Students who spend their time reading comic books and magazines are poor students. John spends his time reading comic books and magazines. Therefore, John is a poor student.

Remember that if we accept the premises of an argument, and also accept the validity of the structure of the argument, then we are logically compelled to accept the conclusion. Conversely, if we do **not** accept the conclusion of an argument, then we are logically compelled to **deny** the truth or acceptability of at least one of the premises, or we are logically compelled to **deny** the validity of the structure of the argument. Sometimes you will want to say that both the premises and the structure of the argument are unacceptable.

Finally, an argument may **imply its conclusion**, rather than fully state it. In these cases we have to supply the implied conclusion in the same way that we have to supply the missing premises in an argument which is not fully stated.

Activity 4

Consider the following passages and then bracket and number the statements, underline the signal words (if there are any) and analyse the following arguments:

- (1) Censorship of literature and film cannot easily be enforced. Moreover, the criteria for censorship are either arbitrary or partisan.
- (2) Without a good supply of rain food production and industry will suffer. Our future depends on strong agricultural and industrial growth. Therefore, we should do whatever we can to promote good water management.
- (3) The objections to the new dam construction are short-sighted. Firstly, more people will benefit from a new dam than those people who will suffer because of losing their homes and farms. Secondly, those who do lose their homes and farms will be compensated and, thirdly, many jobs will be created by the construction of a new dam in the area.
- (4) Most workers want better pay and better work conditions. It follows from this that most workers are in favour of trade unions.

Feedback

We will help you to complete examples (1) and (2). Apply the knowledge and skills you have gained from the previous discussions and activities and complete examples (3) and (4) on your own.

- (1)
Censorship of literature and film cannot easily be enforced. Moreover, the criteria for censorship are either arbitrary or partisan.

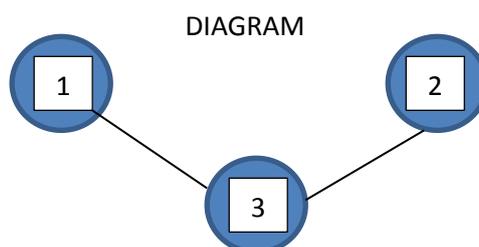
Let us bracket and number the statements, underline the signal words and analyse the argument:

[Censorship of literature and film cannot easily be enforced]¹.

Moreover, [the criteria for censorship are either arbitrary or partisan]².

The argument contains a **missing conclusion**. The implied conclusion is that censorship is unacceptable.

The structure of the argument can then be represented as follows:



(2)

Without a good supply of rain food production and industry will suffer. Our future depends on strong agricultural and industrial growth. Therefore, we should do whatever we can to promote good water management.

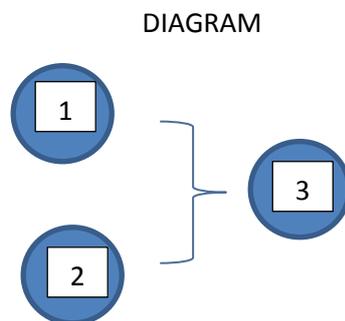
We have to bracket and number the statements, underline the signal words and analyse the argument:

[Without a good supply of rain food production and industry will suffer]¹.

[Our future depends on strong agricultural and industrial growth]².

Therefore, [we should do whatever we can to promote good water management]³.

The structure of the argument can be represented as follows:



The diagrams show that premises 1 and 2 support the conclusion interdependently. Neither premise 1 nor premise 2 on its own provides sufficient ground to accept the conclusion. Both premises need to be true for they support the conclusion together. If you are still unsure about how premises and conclusions are related to each other in arguments, you could reread the relevant sections in the online references supplied.

In this section we have explored the idea that an argument has a structure. The way in which we evaluate an argument depends, partially, on its structure. Through practice and experience you will become aware of the structure of arguments and you will therefore find it unnecessary to portray arguments in diagrammatic form.

3.2.3 Applying your knowledge and skills to analysing arguments

You will hardly believe it, but if you have actively participated in your initiation process of becoming a critical thinker, you will now be at the stage where you have the competence to analyse arguments.

Here is a summary of the steps in argument analysis:

- (1) Step one — Clarify the meaning of the argument.
- (2) Step two — Bracket and number the statements and underline the signal words.
- (3) Step three — Identify the conclusion(s) of the argument.
- (4) Step four — Identify the premises of the argument.
- (5) Step five — Provide a representation of the structure of the argument.

Activity 5

Consider the following arguments and then analyse them by applying the steps to argument analysis.

- (1) The diseases that people develop and their chances of recovering from them are related to their personalities. Some types of personality are more likely to develop heart disease or back pain. And patients with cancer tend to respond better to treatment if they can maintain an optimistic, combative attitude. Sometimes they are taught to visualise their disease as an enemy and to imagine fighting it. This fosters states of mind that hinder the progress of the disease. So we need to influence the mind in order to influence the body: our minds are distinct factors that control our bodies.
- (2) Depression is a state of mind. But depression can often be relieved by antidepressant drugs. These drugs must affect our bodies, and in fact we know quite a lot about how they affect the brain. So changes in the brain can cause changes in the mind. So the mind is an aspect of the brain.
- (3) Noise is an environmental pollution which upsets people, causes tempers to fray and builds up tension between neighbours. People tolerate a great deal of unnecessary noise even though it often drives them to distraction. Local authority noise patrols can obtain warrants to enter premises where noise and alarms are disturbing the neighbourhood. They can oppose the renewal of licences for noisy pubs. They can apply to the courts for fines of up to R10000 for persistent noise offenders.
- (4) The fact is indisputable that, taking the average, say, of a hundred brains, the man has five or six ounces more brain than the woman. Some women will, of course, be found to have much larger brains than some men; but whenever the comparison embraces a sufficient number to yield a fair average, the superiority is invariably on the side of the man. And it is worthy of special remark that it is in the cerebrum, or brain proper, that these differences are very trifling. Now, when we reflect that the cerebrum is generally supposed to be the exclusive organ of the intellectual, volitional, and emotive faculties, and that it forms about nine-tenths of the whole mass usually designated as “the brain”, or more correctly as “the encephalon”, this marked superiority in the male cerebrum seems to lend scientific authority to the general verdict regarding the intellectual inferiority of women.
- (5) Euthanasia cannot be justified. The judgment that a patient is terminally ill isn’t always the last word, you know. The diagnosis may be mistaken, a new cure may come along, and cancer patients have been known to go into spontaneous remission. But death is the last word. Once you have killed a patient, he or she is beyond all hope. How would you feel if a wonder drug turned up the next day, or if the doctors discovered their diagnosis was wrong?
- (6) Animals feel pain just as we do. It is only because we feel pain that it matters how others treat us. The capacity to feel pain is the origin of morality. Given these obvious points it follows that, since animals can feel pain, their treatment must be a matter of moral concern for us.
- (7) “No reform, moral or intellectual, ever came from the upper class of society. Each and all came from the protest of martyr and victim. The emancipation of the working people must be achieved by the working people themselves.” (Wendell Phillips)

- (8) “The real difference between democracy and oligarchy is poverty and wealth. Wherever men rule by reason of their wealth, whether they be few or many, that is an oligarchy, and where the poor rule, that is a democracy.” (Aristotle).
- (9) “The dictum that truth always triumphs over persecution is one of those pleasant falsehoods which men repeat after one another till they pass into common places, but which all experience refutes. History teems with instances of truth put down by persecution. If not suppressed forever, it may be thrown back for centuries.” (Mill)
- (10) “An aggressive war is the great crime against everything good in the world. A defensive war, which must necessarily turn aggressive at the earliest moment, is the necessary great counter-crime. But never think that war, no matter how necessary, nor how justified, is not a crime. Ask the infantry and ask the dead.” (Hemingway)
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Feedback

We will help you with answers to (1), (2), (3) and (5). Apply your knowledge of analysing arguments and complete activities (6), (7), (8), (9) and (10) on your own.

Earlier on we have seen that a useful way to analyse arguments is to bracket the statements, underline the signal words (if there are any) and identify the premises and conclusions in the argument. Let us, then, apply this strategy to the arguments above:

(1)

The diseases that people develop and their chances of recovering from them are related to their personalities. Some types of personality are more likely to develop heart disease or back pain. And patients with cancer tend to respond better to treatment if they can maintain an optimistic, combative attitude. Sometimes they are taught to visualise their disease as an enemy and to imagine fighting it. This fosters states of mind that hinder the progress of the disease. So we need to influence the mind in order to influence the body: our minds are distinct factors that control our bodies.

[The diseases that people develop and their chances of recovering from them are related to their personalities]¹. [Some types of personality are more likely to develop heart disease, or back pain]². And [patients with cancer tend to respond better to treatment if they can maintain an optimistic, combative attitude]³. [Sometimes they are taught to visualise their disease as an enemy and to imagine fighting it]⁴. [This fosters states of mind that hinder the progress of the disease]⁵. So [we need to affect the mind in order to affect the body]⁶. [Our minds are distinct factors that control our bodies]⁷.

Chain argument:

Main conclusion — 7

Premise for main conclusion — 6

Sub-conclusion — 6

Premises for sub-conclusion — 1, 2, 3, 4, 5

(2)

Depression is a state of mind. But depression can often be relieved by antidepressant drugs. These drugs must affect our bodies, and in fact we know quite a lot about how they affect the brain. So changes in the brain can cause changes in the mind. So the mind is an aspect of the brain.

[Depression is a state of mind]¹. But [depression can often be relieved by antidepressant drugs]². [These drugs must affect our bodies]³, and in fact [we know quite a lot about how they affect the brain]⁴. So [changes in the brain can cause changes in the mind]⁵. So [the mind is an aspect of the brain]⁶.

Chain argument:

Main conclusion — 6

Premise for main conclusion — 5

Sub-conclusion — 5

Premises for sub-conclusion — 1, 2, 3, 4

(3)

Noise is an environmental pollution which upsets people, causes tempers to fray and builds up tension between neighbours. People tolerate a great deal of unnecessary noise even though it often drives them to distraction. Local authority noise patrols can obtain warrants to enter premises where noise and alarms are disturbing the neighbourhood. They can oppose the renewal of licences for noisy pubs. They can apply to the courts for fines of up to R10 000 for persistent noise offenders.

Note that in this passage the premises are supplied, but the conclusion is missing. Therefore we are expected to fill in the implied conclusion.

If we read this passage very carefully, understand what the author is trying to say, and think about the meaning of the premises in this argument, then we will see that the arguer is trying to make the following two points: (1) Noise is an environmental pollution which upsets people, and (2) we ought to make more use of local authority noise patrols to combat noise pollution. We should **note that the main conclusion in this argument is missing**. The think the main conclusion is:

We ought to make more use of local noise patrols.

A full analysis of the structure of this argument will only be complete when we have given the implicit main conclusion. To do this we need to rewrite (recast) the passage. We shall also place the statements one after the other to draw out the argument's chain character:

[Noise is an environmental pollution which upsets people]¹. because

[Noise causes tempers to fray and because noise builds up tension between neighbours]².

[People tolerate a great deal of unnecessary noise even though it often drives them to distraction]³.

[Local authority noise patrols can obtain warrants to enter premises where noise and alarms are disturbing the neighbourhood]⁴.

[Local authority noise patrols can oppose the renewal of licences for noisy pubs]⁵.

[They can apply to the courts for fines of up to R10 000 for persistent noise offenders]⁶.

Therefore, [we ought to make more use of local noise patrols]⁷.

Chain argument:

Main conclusion — 7

Premises for main conclusion — 1, 4, 5, 6

Sub-conclusion — 1

Premises for sub-conclusion — 2, 3

We should note that the main point (issue) of this argument is that we ought to make more use of local authority noise patrols to combat noise pollution. Also, the premises supplied in the argument are relevant and give adequate support to the conclusion.

(4)

[The fact is indisputable that, taking the average, say, of a hundred brains, the man has five or six ounces more brain than the woman]¹. [Some women will, of course, be found to have much larger brains than some men]² but [whenever the comparison embraces a sufficient number to yield a fair average, the superiority is invariably on the side of the man]³. And it is worthy of special remark that [it is in the cerebrum, or brain proper, that these differences are very trifling]⁴. Now, [when we reflect that the cerebrum is generally supposed to be the exclusive organ of the intellectual, volitional, and emotive faculties]⁵, and [that it forms about nine tenths of the whole mass usually designated as “the brain”]⁶, or more correctly as “the encephalon”, [this marked superiority in the male cerebrum]⁷ seems to lend [scientific authority to the general verdict regarding the intellectual inferiority of women]⁸.

Chain argument:

Main conclusion — 8

Premises for main conclusion — 1, 4, 5, 6, 7

Sub-conclusion — 1

Premises for sub-conclusion — 2, 3

In summary

In this topic we have learnt what an argument is; what premises and conclusions are; how to identify premises and conclusions in arguments; and how to use techniques for analysing arguments. The basic competence that you have gained in analysing arguments will also serve you well when we evaluate arguments. This is the focus of our next topic.