S

THE UNIVERSITY OF MELBOURNE

FACULTY OF BUSINESS & ECONOMICS

Centre for Excellence in Learning and Teaching

CRITICAL THINKING 1: Recognising Academic Arguments

Use this sheet to help you:

- Understand what is commonly meant by 'critical thinking'
- Develop your critical thinking skills
- Use argument-mapping software to strengthen your arguments

5 minute self test

How would you define an "academic argument"?

What are the parts of an academic argument?

What are "premises"?

What are "assertions"?

This publication can be cited as: Davies, W. M. (2007), *Critical Thinking 1*, Centre for Excellence in Learning and Teaching, Faculty of Business and Economics, the University of Melbourne. http://fbe.unimelb.edu.au/celt
Further credits: Beaumont, T. (content changes and editing).

Some, or all of the material in this helpsheet, appear in: Martin Davies (2011), *Study Skills for International Postgraduate Students*. Basingstoke, UK.: Palgrave, MacMillan. ISBN: 140 399 580 X.

CRITICAL THINKING 1

S

Introduction

If you are constantly being told by your lecturer or supervisor or lecturer that your work: 'is not critical enough' or 'doesn't argue the point', this does not necessarily mean that you are wrong in presenting your data, or that you have the wrong facts—the facts you provide might be accurate in every detail. It usually means that you haven't organised the facts or data in a sufficiently logical way. This could mean a number of things. For example, your work might be criticised for:

- being a mere collection of facts (with no synthesis/analysis of the material at all);
- being insufficiently argued (there is some argument, but not enough to be convincing);
- being wrongly argued (your argument could actually be faulty/fallacious—despite your facts being accurate).

What is an academic argument?

What exactly is an academic argument? This is not easy to answer. Some statements look like arguments, but they are just assertions (unsupported claims); some statements look like assertions and are really arguments in disguise (see **CELT Helpsheet: Critical Thinking 2**) Some writing is so jumbled and difficult to read that the arguments get lost in the process. It is your job as a student to make your arguments, and the arguments of others, very clear.

Presenting an academic argument involves several things:

- Attempting to arrive at conclusions about some matter of academic interest by debate.
- Questioning and criticising the conclusions of others in this debate in order to make that view more accurate.
- Pointing out problems with the assumptions that may influence the conclusions;
- Recognising how well-argued conclusions and assumptions might influence one's own opinions about the matter being debated (to be challenged by the debate).
- Being prepared to change one's own views as a result of the debate.

Engaging in an academic argument is not meant to be a hostile or insensitive business. It is meant to be:

- stimulating for all parties to the dispute
- useful for everyone, regardless of educational level
- helpful to your own research and the independent research of others
- impersonal (it is the idea that is being debated, not the person)
- ongoing (once you stop doing it, you become dogmatic!)

A Definition of "Academic Argument"

Academic argument: To be engaged in an intellectual dispute with others over the truth/falsity or relevance/application of some claim to scholarly knowledge—with the aim of arriving at a more accurate version.

Of course, people in universities don't become defensive about their opinions and do not become upset when their views are criticised— they very often they do. But within the university people are *less* likely to respond in this way because they all recognise that their work is part of an important ongoing critical debate. Participating in this critical debate is the most exciting part of being at university—and your work is part of it.

In an argument, we present a conclusion based on a number of premises or assumptions. A premise is a statement supporting an argument. An argument is a series of connected statements which leads to a conclusion. Importantly, when we present the conclusion of an argument, we don't just state it, we also have to give reasons for stating it. There are thus three components of an argument:

Parts of an Academic Argument:
(1) the premises (or assumptions);
(2) the conclusion;
(3) the inference (or link) from the premises to the conclusion.

Any of these will *usually* indicate the presence of an argument. If none of these are present, you haven't got an argument—only an assertion or statement. Here are examples of assertions:

The door is closed
It is raining in Melbourne today

By contrast, here's a simple example of an argument:

If metals expand when heated, and 'X' is metal, then 'X' will expand when heated.

It is easy to see what is being concluded here. *The conclusion is: 'X' will expand when heated.*

The assumptions that lead to this conclusion are as follows:

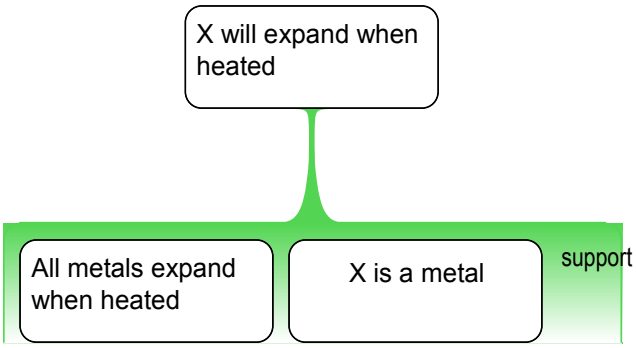
All metals expand when heated and
'X' is a metal.

The inference being made is from the assumptions to the conclusion. You can write this argument out like this to show the progress of the argument from assumptions to conclusion:

P1: All metals expand when heated
P2: 'X' is a metal
C: 'X' will expand when heated.

P1 and P2 above stand for "premise" 1 and 2—a premise is a statement/assumption in an argument which helps in arriving at a conclusion (they are called the "major" and "minor" premise in this example). "C", of course, stands for "conclusion".

This is even clearer when presented as an argument map:



Here are some useful definitions:

- **Premises** can be defined as statements which are used to infer a certain conclusion. They are statements you argue from to a conclusion.
- **Conclusions** can be defined as statements which are inferred from certain premises. They are statements you argue to from premises.

Beyond these definitions, there are several ways of recognising arguments. However, none of these ways guarantees that you have an argument—they are just guides. Here are some rules that will help.

Rule 1. Look Out for Conclusion Indicators

Conclusions are often signposted by the use of indicator words. The following words indicate that they are likely to be followed by the conclusion of an argument:

• let us conclude that...; we conclude that...; we can conclude that...; concluding...; thus...; therefore...; so...; consequently...; hence...; then...;

There are also words which indicate that a premise of an argument is to follow. Hence, rule 2:

Rule 2: Look Out for Premise Indicators

• since...; as...; for...; because...; assuming that...; supposing that...; given that...; for the reason that...; if such and such....;

There are also indicators which signal that what goes before is a premise, and that what comes after is a conclusion.

Rule 3: Look Out for Argument Sequence Indicators

e.g., (premise) ....then... (conclusion)

If we heat water then it will boil.

Other words used in this way are: *shows that, indicates that, proves that, entails that, implies that, establishes that, allows us to, infer that, and gives us reasons for believing that.*

Rule 4: Look out for Conclusion Sequence Indicators
Indicators can also signal a reverse sequence: that a conclusion which comes before has as its premises some statements which come after:

e.g., (conclusion) ... then ... (premise)

Other phrases used in this way include: *is shown by, is indicated by, is proven by, is entailed by, is implied by, is established by*.

Of course not all arguments use sequence indicators.
Let's look at another example.

- *If men have obtained advantages through past discrimination in their favour, then we may discount men's advantages when selecting people for jobs.*

This statement is intended to give a reason for discounting men's advantages in employment. Therefore, it should be regarded as presenting an argument in favour of that conclusion. The conclusion is based on the assumed premise that men have in fact obtained advantages from past discrimination in their favour. But in this example there is no conclusion indicator present. However, we can put one in to make it clear. It can be rewritten as:

- P1: If men have obtained advantages through past discrimination, then we should discount men's advantages when selecting people for jobs
- P2: Men have obtained advantages in the past from discrimination in their favour (assumed)
- C: Therefore, we should discount men's advantages when selecting people for jobs.

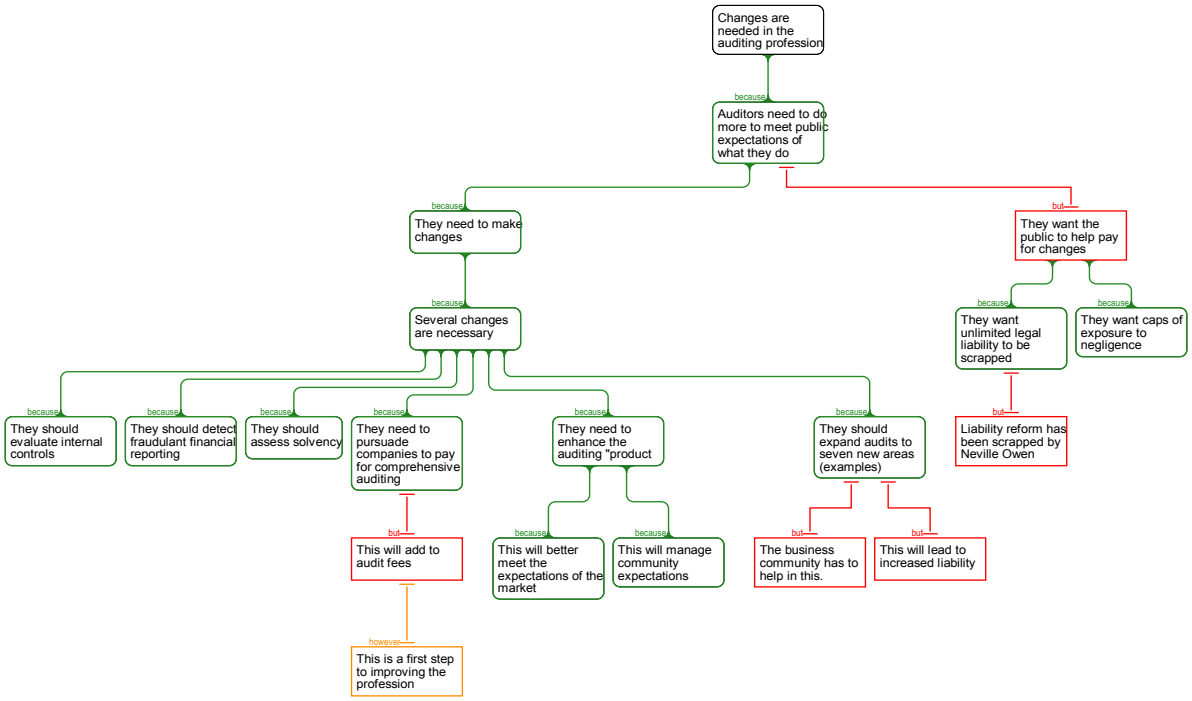
The lesson here is: *Don't be fooled by indicator words when you are looking for arguments and don't assume that lack of indicators means that there is no argument.*

A More Complex Example

The examples just given are short and simple. Academic writing involves understanding arguments too. We will look at more examples in the **Helpsheet: Critical Thinking 2**. This is what distinguishes academic writing from novels, newspaper articles, and other forms of writing. These other kinds of writing are often just "opinion" pieces (i.e., claims for which no reasons or evidence is given). However academic arguments are much longer and more complex than the examples just given and reasons and evidence are expected.

Sometimes the arguments made in academic articles will not be obvious. Part of your job in lectures and when reading is to try and recognise these arguments and break them down into their own discrete parts. You then need to analyse the different parts and make sure that they are performing the function that they are suppose to perform in the argument. This will take a lot of practice, but should also be a part of your classes, where your tutor will work through these steps via a series of questions and exercises.

A more complex argument for the contention or position that: *Changes are needed in the auditing profession*, is given below (Leung, Coram, Cooper, Cosserat, & Gill, 2004). Space prevents me from providing the text on which this argument is based. You can find the text and check it if you are interested. The text the argument comes from is a page in length and quite dense and hard to read. The argument map makes the contention obvious and the reasons on which the contention is based very clear. Mapping arguments such as this is not easy, however, and practice and guidance is needed.



Summary

Critical thinking is a complex and difficult skill. One of the main reasons for doing a postgraduate degree is to refine this skill. In the area of critical thinking this learning never stops; one is always improving. This helpsheet has outlined the importance of arguments in the tertiary context. Examples of premise and conclusion indictor words have been outlined. Several arguments have been given to show inferential relationships between premises and conclusion.

Acknowledgements: The argument maps were devised using the software Rationale devised by Tim van Gelder's critical thinking company *Austhink*.