**Critical Thinking**

**Topic 4: Identifying Assumptions**

**Identifying unstated premises and conclusions**

An **assumption** is a premise which is *not explicitly* stated in an argument, but which is *required* by the argument in order for the conclusion to follow.

**Exercise 1 – Identifying unstated premises**

Identify the unstated premise in the following arguments.

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| **1.** All penguins live in the Antarctic.  **A2.**  **Therefore:**  **C.** This bird is not a penguin. | **1.** Anyone who lives in Paris lives in France.  **A2.**  **Therefore:**  **C.** Jean lives in France. |
| **1.** Evolution is not the best explanation for our observations.  **A2.**  **Therefore:**  **C.** Therefore, creationism is the best explanation for our observations. | **A1.**  **2.** These tulip bulbs were not chilled before planting.  **Therefore:**  **C.** These tulip bulbs will not produce flowers. |

**Exercise 2: Standardising arguments with unstated premises**

Standardise the following arguments, including any unstated premises.

1. A photograph taken with a traditional camera can never convey the experience of being in a landscape since only a three-dimensional representation of a landscape can convey the experience of being in that landscape.

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1. Only people who live in Brixton took part in the riots. So everyone who took part in the riots is from a deprived area.

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1. It is impossible to know that any claim about the physical world is true, because no such claim can ever be conclusively proved.

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1. Having an efficient, attractive train network makes good economic sense. So, the city needs to purchase new train carriages, since the city should always do what makes good economic sense.

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1. When students do not find their assignments too challenging, they become bored and so achieve less than their abilities would allow. On the other hand, when students find their assignments too difficult, they give up and so again achieve less than what they are capable of achieving. It is therefore clear that no student’s full potential will ever be realized.

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1. Zoologist: Animals can certainly signal each other with sounds and gestures. However, this does not confirm the thesis that animals possess language, since animals do not use sounds or gestures to refer to concrete objects or abstract ideas.

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1. Students of the late twentieth century regularly campaigned against nuclear weapons. Students rarely demonstrate against nuclear weapons any more. Students must be less political than they used to be.

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**Exercise 3: Identifying assumptions in a discussion**

From the following list, choose a statement with which you either strongly agree or disagree. You can also choose your own topics – anything that is of general interest but also likely to be controversial will work. Take a couple of minutes to develop an argument for (or against) this statement. Then, present your argument to your discussion partner. Your partner must then try to identify any unstated assumptions upon which your conclusion depends.

* + It’s good that Monash is now a smoke-free university.
  + Same-sex marriages should be legalized.
  + People living in affluent countries are morally obligated to give a (large) proportion of their income to charities.
  + There are strong ethical reasons to adopt a vegan / vegetarian lifestyle.
  + Scientific journal articles should be accessible to everyone rather than being locked behind a paywall.
  + There is nothing wrong with downloading movies / music and this should be legal.
  + Australia should have stricter policies on immigration.
  + The government should support traditional families: it is best for children to grow up with a father and a mother.

**The philosophical argument of the week:**

SALVIATI: If then we take two bodies whose natural speeds are different, it is clear that, [according to Aristotle], on uniting the two, the more rapid one will be partly held back by the slower, and the slower will be somewhat hastened by the swifter. Do you not agree with me in this opinion?

SIMPLICIO: You are unquestionably right.

SALVIATI: But if this is true, and if a large stone moves with a speed of, say, eight, while a smaller moves with a speed of four, then when they are united, the system will move with a speed less than eight; but the two stones when tied together make a stone larger than that which before moved with a speed of eight. Hence the heavier body moves with less speed than the lighter; an effect which is contrary to your supposition. Thus you see how, from your assumption that the heavier body moves more rapidly than the lighter one, I infer that the heavier body moves more slowly. (Galileo Galilei

(1638), *Discorsi e Dimostrazioni Matematiche Intorno a Due Nuove Scienze*)

This classical thought experiment doubles as a *reductio ad absurdum*. In this type of argument, an assumption is made for the sake of argument, but is shown to lead to absurd (or even outright contradictory) conclusions. Therefore, the assumption itself must be flawed.

Watch Dan Dennett explain reductio ad absurdum arguments: <https://www.youtube.com/watch?v=sVUMAqMmy7o>

Here is the **standard form of a** reductio ad absurdum**:**

1 Assumption p

2….

3….

**Therefore:**

4. q and not q: contraction!

**Therefore:**

C. Not p

* **Which assumption is Galileo trying to disprove? Which general principle is being targeted by the argument?**

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* **What is the conclusion of the argument? What is the thought experiment supposed to show?**

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