305 Lecture 1.2 - Arguments

Brian Weatherson

Plan for This Lecture

We're discussing the nature of arguments, and in particular, the role of premises and conclusions.

Associated Reading

forall x, chapter 1, “Arguments”.

Arguments

Logic studies certain properties of arguments.

An argument, in the sense we're interested in, has two parts:

1. Premises
2. Conclusion

Example

All kangaroos are wise.
Skippy is a kangaroo.
$\therefore$ Skippy is wise.

Read $\therefore$ as ‘therefore’.

Premises

All kangaroos are wise.
Skippy is a kangaroo.
∴ Skippy is wise.

- The premises are the reasons that are given.
- In this argument there are two.

Conclusion

All kangaroos are wise.
Skippy is a kangaroo.
∴ Skippy is wise.

The conclusion is what comes after ‘therefore’ and is supported by the premises.

Ordinary English

- In ordinary English, the order of the premises and conclusion is not as fixed as it is here.
- The textbook has examples where the conclusion comes after the premises, as in our presentations, before the premises, and between the premises.
- The general rule is that it is introduced by a word like ‘so’, or ‘therefore’, or, if you’re really old school, ‘hence’.

The Premise Set

All kangaroos are wise.
Skippy is a kangaroo.
∴ Skippy is wise.

There can be zero, one or multiple premises. Formally, we'll say there is a set of premises.

Zero Premises

Here's my formal representation of (part of) the opening sentence of the Declaration of Independence.

Zero Premises

∴ All men are created equal.

One Premise

The cinema is closed.

∴ We shouldn't go to the cinema.

Conclusion

All kangaroos are wise.
Skippy is a kangaroo.
∴ Skippy is wise.

But we don't allow this flexibility to conclusions; arguments have a single conclusion.

Chained Arguments

- Sometimes a conclusion of one argument will go to be a premise in another argument.
- We will use this fact when we are doing proofs in a few weeks.
- But any given argument aims to prove just one thing.

Representation

All kangaroos are wise.
Skippy is a kangaroo.
∴ Skippy is wise.

When I write arguments like this, I'm merely presenting them, not asserting that they have any nice features.

For Next Time

We'll start talking about these nice features.