Induction

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For an argument to be good its conclusion must *follow from* its premises

But we saw in an earlier podcast that there are two sorts of 'following from'

In a deductive argument the conclusion *follows from* the premises if the argument is valid

In an inductive argument the conclusion follows from the premises if the truth of the premises *raises the probability* of the truth of the conclusion

Inductive strength

Every time I have seen Marianne she has been wearing earrings

I am seeing Marianne tomorrow

Marianne will be wearing earrings tomorrow

Every day in the history of the universe the sun has risen

Tomorrow is another day

Tomorrow the sun will rise

Even if the likelihood of the truth of the conclusion is significantly raised…

…it *could* still be false…

…induction does not give us certainty…

…as deduction does

Inductive reasoning depends on the Principle of the Uniformity of Nature…

….the idea that the future will be like the past…

…and this can't be justified without circularity

This does not make induction inferior…

…it just makes induction *different…*

Comparing deduction and induction

That is a white swan…

…that is a white swan…

…all the swans I have seen have been white…

…therefore all swans are white

All swans are white

The creature in the next room is a swan

Therefore the creature in the next room will be white

We rely on induction in almost everything we do…

…often successfully and without question…

…but in evaluating inductive arguments…

…we must use our judgement

There are different types of inductive argument:

- **arguments from analogy**
- **arguments from authority**
- **inductive generalisations**
- **causal generalisations**

Arguments from analogy and authority:

Jennifer liked my pen

This pen is similar to mine

Jennifer will like this pen

Einstein said that nothing goes faster than the speed of light

Einstein is an authority on physics

Therefore nothing goes faster than the speed of light

Evaluating arguments from analogy:

- is the premise true?
- is there a similarity?
- is the similarity relevant?
- how strong is the similarity?
- are there any relevant disanalogies?

Evaluating arguments from authority:

- is the premise true?
- is the person cited an expert in this area?
- is the expert biased?
- Is the expert representative?

Inductive generalisations and causal generalisations:

Whenever I have tried to ring BT it has taken me hours to get through.

Therefore when I ring BT today it will take hours to get through.

Statistics say that married men live longer than single men

Therefore being married, if male, causes you to live longer

Evaluating inductive generalisation:

- is the premise true?
- how large is the sample?
- is the sample typical?

Evaluating causal generalisation:

- is the premise true?
- how strong is the correlation?
- could the correlation be accidental?
- could the causal relation work the other way round?
- could the correlation be caused by something else?

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