Verbal arguments: assumptions, alternative causes and evidence direction

Original classroom teaching; not an official form or score predictor

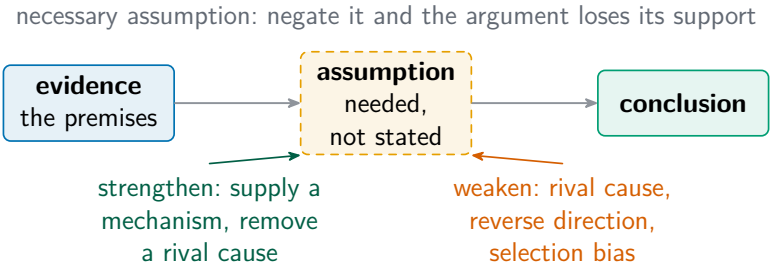
Verbal Arguments: Assumptions, Alternative Causes and the Direction of Evidence

- Find the evidence, the conclusion and the missing link between them.
- Identify a **necessary assumption 必要假设**: one the argument cannot work without.
- Recognise alternative causes, including **self-selection 自我选择** into groups.
- Decide whether new information strengthens, weakens or does not affect an argument.

The structure of an argument

- Evidence: what is reported. Conclusion: what is claimed. Assumption: the unstated bridge.
- Causal arguments assume no rival cause, that the cause came first, and that the groups compared were alike.

Figure: The structure of an argument



- Strengthen and weaken by acting on the missing bridge.
- Match each part of the diagram to the text.

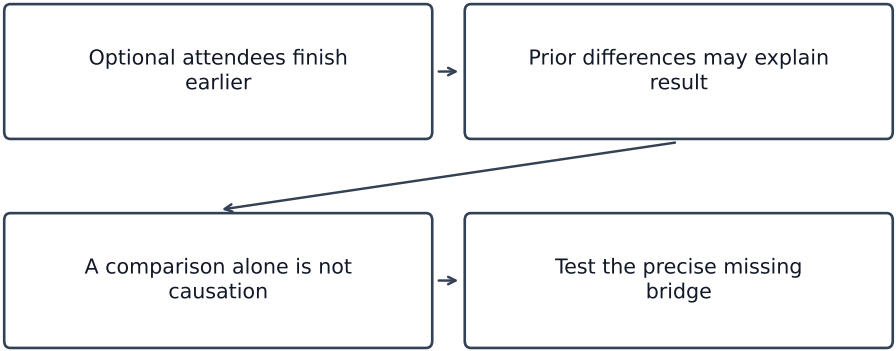
Necessary assumptions

- A necessary assumption must be true for the argument to work.
- Negation test: write the opposite of the option. If the argument then collapses, the option is necessary.
- Do not confuse "necessary" with "sufficient": an assumption can be needed without proving the conclusion.

Strengthening and weakening

- Strengthen by removing a rival cause, adding a mechanism, or showing the comparison groups were alike.
- Weaken by naming a rival cause, reversing the direction of cause, or showing the groups differed beforehand.
- Information that is merely on the same topic, with no link to the conclusion, does neither.

Figure: Strengthening and weakening



- Comparing self-selected groups is not causation; test the missing bridge

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Worked example: a necessary assumption

- Evidence: app users borrowed more. Conclusion: the app caused more reading.
- Necessary assumption: borrowing more books reflects reading more. Negate it ("extra borrowed books were not read"), and the conclusion fails.
- Rival cause by self-selection: keen readers may be the ones who downloaded the app. A comparison of borrowing before and after for the same students would strengthen the argument.

Worked example: an original application

- Original argument: “Participants who chose an optional planning session finished their projects earlier.
- Therefore the session caused faster completion.” Which most weakens the inference?
- A.
- Participants already completed previous projects earlier than nonparticipants.

Independent transfer

- An organiser argues: “A guide will prevent all registration errors because every applicant can read it.” State a necessary assumption about accessibility, test its negation and distinguish it from the stronger claim that everyone actually reads the guide.
- Propose evidence that would strengthen the recommendation without proving “all”.
- A necessary accessibility bridge is that no applicant is unable to understand the guide’s relevant instructions.
- Negating it gives at least one applicant unable to understand them; the universal prevention argument loses its stated support.

Common errors

- Choosing an option that is on topic but has no link to the conclusion.
- Confusing a necessary assumption with one that would prove the conclusion.
- Missing self-selection when groups chose themselves.

Common errors (2)

- Treating a weakener as proof that the conclusion is false.
- Forgetting that cause could run the other way.

Key terms

- **necessary assumption**: A premise that must be true for the argument to work.
- **self-selection**: When people choose their own group, so the groups may differ from the start.

Check yourself

- "People who exercise sleep better, so exercise improves sleep." Name a rival explanation.
- How do you test whether an assumption is necessary?
- Does a weakener prove the conclusion false?