

Philosophy 200

consistency and validity

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Consistency

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- That means that if each of the set of sentences of SL were done on a truth-table, there would be one **row** of the truth table on which all of the sentences of the set are true.
- A set that is not consistent is inconsistent.

Consistency

- A set of sentences of SL that includes a pair of sentences of SL that always have different truth-assignments is a contradictory set.

Contradictory Sets

- A set of sentences of SL that includes a pair of sentences of SL that always have different truth-assignments is a contradictory set.
- Any contradictory set is inconsistent.

Contradictory Sets

- Arguments occur when some set of sentences are designated as premises while another sentence is designated as the conclusion.

Validity

- Arguments occur when some set of sentences are designated as premises while another sentence is designated as the conclusion.
- An argument is valid if and only if its conclusion is entailed by the set of sentences comprised by its premises.

Validity

- If **P**, **Q**, and **R** are each premises, and **S** is the conclusion of a valid argument, then the following material conditional is a tautology:

- $(\mathbf{P} \ \& \ (\mathbf{Q} \ \& \ \mathbf{R})) \supset \mathbf{S}$

Validity, Entailment, and the Material Conditional

- Whenever the conclusion of an argument is a tautology, the argument is automatically valid.

Trivial Validity

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- Whenever the premises are inconsistent, the argument is automatically valid.

Trivial Validity

- Whenever the conclusion of an argument is a tautology, the argument is automatically valid.
- Whenever the premises are inconsistent, the argument is automatically valid.
- Such arguments are called “trivially valid” or “technically valid”.

Trivial Validity