

Attacking an argument

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- **Attack the truth of the premises:** Accept the first premise but: individuals are responsible for their own happiness, not the state.
Or we might argue that happiness is not the sole aim of human existence, or if it is, we need a clearer concept of what 'happiness' means to continue.

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Or we might argue that happiness is not the sole aim of human existence, or if it is, we need a clearer concept of what 'happiness' means to continue.
- **Attack the reasoning:** This is rubbish — I might be exploiting my workers but this might make me lots of money and make me very happy.

Some arguments

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\mathbb{P}_1 Some vampires are
bloodthirsty

\mathbb{P}_2 Some werewolves
are bloodthirsty

\mathbb{C} Therefore, some
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Source: David Wallace, Balliol

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Definitions

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Definition (Modal validity)

An argument is **valid** if there is no possible world in which the premises are all true yet the conclusion is false.

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Not valid. There is a
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there are five vampires and
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Valid. In any world in which
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Valid. In any world in which there are men who are mortal, and Socrates is a man, he is definitely mortal too.

P_1 The moon is white

P_2 Anything white is
made of cheese

C We conclude that the
moon is made of cheese.

Valid. In any world in which the moon is white and all white things are cheese, the moon has to be cheese as well.

So every good argument is valid, but not every valid argument is good!

Further examples

\mathbb{P}_1 Mr Moore-Bridger is
in this room

\mathbb{P}_2 Mr Moore-Bridger is
not in this room

\mathbb{C} Sheffield is on an
island in the Indian
ocean.

Further examples

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\mathbb{C} Sheffield is on an
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\mathbb{P}_1 Wherever you find
leaves, you find trees

\mathbb{P}_2 There are no leaves
in Antarctica

\mathbb{C} So there are no trees
in Antarctica either.

Taking it further

Symbolic logic allows us to *calculate* whether an argument is valid, mathematically.

\mathbb{P}_1 All men are mortal

\mathbb{P}_2 Socrates is a man

\mathbb{C} Socrates is mortal.

\mathbb{P}_1 $\forall x(\sigma^{\circ}x \rightarrow Mx)$,

\mathbb{P}_2 $\sigma^{\circ}s$,

\mathbb{C} Ms .

$\sigma^{\circ}x$: x is male

Mx : x is mortal.