

Truth, Argument and Logic

An argument is

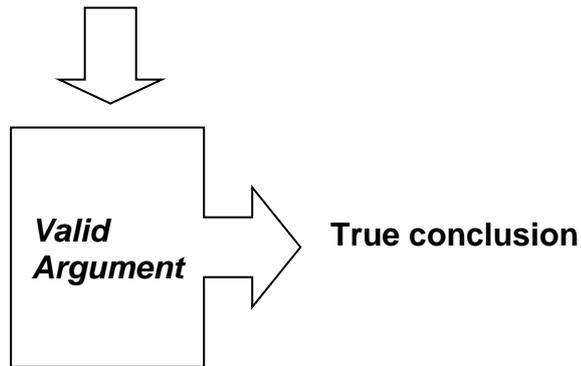
A valid argument.

A sound argument is

A fallacy is.....

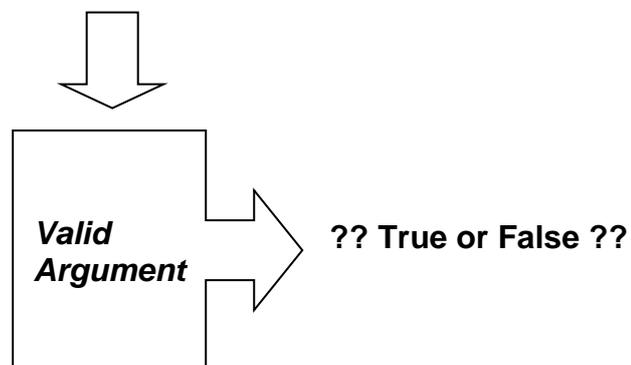
Sound Argument: reliable machine and reliable material

True premises



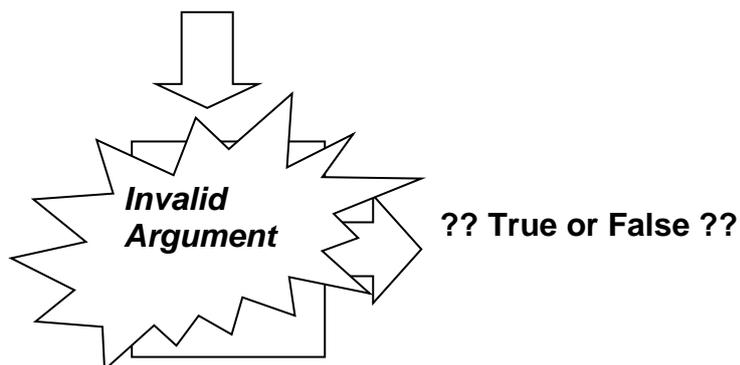
Valid (but unsound) Argument: reliable machine but unreliable material

False premises



Invalid Argument (fallacy): unreliable machine whatever the material

True premises



Critical Use of Sources

Sources: taking things on trust, checking and taking things on trust (again)

The power of the written word and what lies behind it

Reliability: paper, encyclopaedia, (academic) publisher, peer review journal

The internet: quality control, domain names, hosts

Why the best is not on the internet

Finding material on the internet: search engines, portals, academic databases

Critical reading: one sidedness, critical engagement, balancing arguments

'Facts', raw data, theory and interpretation

Primary texts, translation, secondary literature, good referencing

Exercise I: Truth, Argument and Logic

For the following examples:

Identify the premises [**P**] and the conclusion [**C**].

State whether each proposition is true [**T**] or false [**F**] or not known [**?**]

Is the argument sound [**S**], valid (but not sound) [**V**], or invalid [**I**]?

For example

P All men are mortal **T**

P Socrates is a man **T**

C Therefore, Socrates is mortal **T**

S

Argument 1

All vertebrates have a backbone

Cats are vertebrates

Therefore cats have a backbone

Argument 2

If musical ability were heritable genetically it would run in families

Musical ability does run in families

Therefore musical ability is heritable genetically

Argument 3

All doctors are conscientious

John Smith is a doctor

Therefore John Smith is conscientious

Argument 4

If Hippocrates wrote the Hippocratic Oath then it has moral authority

The Hippocratic Oath was not written by Hippocrates

Therefore the Hippocratic Oath has no moral authority

Exercise II: Critical Use of Sources

Consider the following questions:

1. Is diabetes in Japan more common than it is in the United Kingdom?
2. Are statins cost effective?
3. Are experiments on primates necessary to the progress of medicine?
4. Could computers become conscious?
5. Who wrote the Hippocratic Oath?
6. How do you tell if someone has died?
7. What did Kant think was the source of moral obligation?
8. Is there a legal right to assisted dying under international law?

Are the terms in the question subject to conflicting interpretations?

Is there somewhere you could go to get an initial answer?

How would you check this source?

Whose expertise would have to rely on to go further?

Does this question ultimately rest on some raw data or on a primary text?

How could the data or the text be reliably established?

Are there implicit issues of translation, meaning or interpretation that need to be resolved before the question can be answered?

How far do you have to go personally to have a reasonable confidence in your conclusion?

Fallacies

<http://www.fallacyfiles.org/taxonomy.html>

I. Deductive fallacies:

1. Inconsistency

P and not P, therefore Q

2. Affirming the consequent

If P then Q, Q, therefore P

3. Denying the antecedent

If P then Q, not P, therefore not Q

4. Quantifier shift

Composition/division

Accident (generalisation from accidental property)

Failure to distinguish part/ whole (division/ composition)

5. Bad argument fallacy

P therefore Q is invalid, therefore not Q

6. Mistaking cause and effect (*post hoc ergo propter hoc*)

7. Naturalistic fallacy

Is/ought fallacy

8. Non sequitur

Jumping to conclusions

P therefore Q

9. Failure to follow argument to conclusion (Schopenhauer)

If A then B, If B then C, If C then D, A but not D

10. Misapplication of Slippery slope

If A then B, If B then C, If C then D, If D...Z, A therefore Z

Failure to admit exceptions or being more precise than subject allows

11. Ambiguity/equivocation

(whether of terminology or grammar)

II. Inductive Fallacies

1. Ignoring multiple causes (over simplification) (Chesterton "to simplify is to lie")

Black and white reasoning

2. False dichotomy/ False dilemma

3. One sidedness (pro-con)
4. Misleading comparisons (all comparisons are odious)
5. False analogy (all analogies limp: Arguing by analogy)
6. Hasty generalisation
Sample size (statistics), false stereotype
7. Proof by lack of evidence/ ignorance (argumentum ad ignorantiam)
(Valid only to the extent that we have looked and ruled out other possibilities)
8. Disproof by lack of evidence Incompleteness (ignorance) as proof of defect
(Valid only to the extent that we have looked and have good reason to expect evidence)
9. Genetic fallacy
(Valid only as part of explanation for error, but need to show error)
10. Argument from authority (argumentum ad verecundiam)
Appeal to tradition (version of appeal to authority)

III. Fallacies of relevance

1. Irrelevant conclusion Ignoratio Elenchi
Beside the point (red herring irrelevant to the issue)
Ignoring the question
2. Straw man
3. Circular reasoning
Begging the question (Petitio Principii) assume what need to prove
4. Ad hominem (abusive)
Guilt by association (tarred with same brush, ad hominen, negative authority)
Attacking character of opponent (playing man not ball)
5. Appeal to emotion (pity) (argumentum ad misericordiam)
Argumentum ad populum (populist attempt to sway crowd rather than reason)
6. Appeal to force (argumentum ad baculum)
7. Complex question
8. Bogus claims (Fake news! lies!)
Unwarranted associations
9. Loaded terms
(‘Neutral language’ emotive language – euphemism)