

Critical Reasoning: A Romp Through the Foothills of Logic

Lecture Six: Fallacies


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Last week we looked at:

- **the nature of induction**
- **the value of induction**
- **the different types of induction;**
- **how to evaluate the different types of inductive argument**



This is our last week and we are going to:

- **look at the nature of fallacies**
 - **consider some particular fallacies**
 - **deal with as many of your questions as possible**
 - **think about where you might go next**
- 



So first let's consider what a fallacy is



The word 'fallacy' is used by logicians in a technical sense...

...rather like the word 'valid' it also has an everyday sense



**In the everyday sense people use
'fallacy' and 'fallacious' of both
arguments and beliefs:**

- **'that belief is fallacious'**
- **'that thought is a fallacy'**
- **'that reasoning is fallacious'**

A logician will use 'fallacy' and 'fallacious' only of arguments:

- a fallacy, to a logician, is a faulty argument
- when the reasoning in an argument is faulty it is *fallacious*



It is worth learning a bit about fallacies because...

...if you want to reason well...

**...you must learn how to avoid reasoning
badly...**

**...and studying fallacies alerts you to the
type of error people can make**



There are literally *hundreds* of fallacies...

**...the internet encyclopaedia of philosophy lists
208...**

...and probably leaves out quite a lot...

...because a fallacy is only worth naming...

**... if it is a fairly common error in
reasoning**



Many people have tried to classify fallacies...

...the first person to do this was Aristotle...

...(though Plato collected examples of bad reasoning)...

...but the classifications cross-cut each other

The Fallacy Files: Taxonomy of Logical Fallacies



<http://www.fallacyfiles.org/taxonomy.html> with the kind permission of Gary Curtis



**I am not going to bother with the
classifications today...**

**...instead I am just going to introduce you
to some of the commonest fallacies...**

...ones you may have heard named



We are going to look at the following fallacies:

- **Affirming The Consequent**
- **Denying The Antecedent**
- **The Masked Man Fallacy**
- **The Gamblers' Fallacy**
- **The Fallacy of Undistributed Middle**
- **Amphiboly**
- **Equivocation**
- **Straw Man**
- **Slippery Slope**
- **Begging the Question**

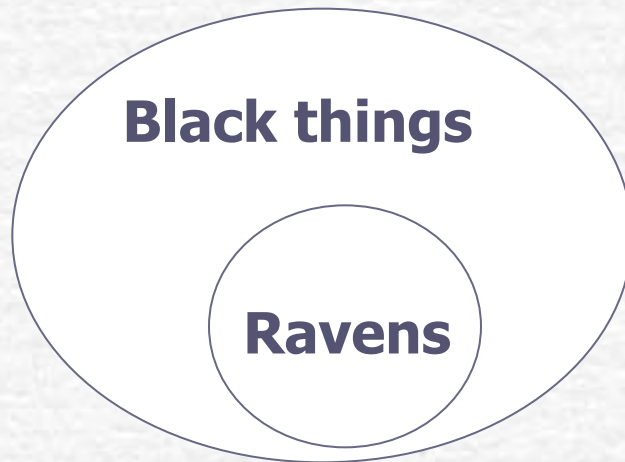
Affirming The Consequent:

If it is a raven then it is black

It is black

Therefore it is a raven

Check out the Venn diagrams:



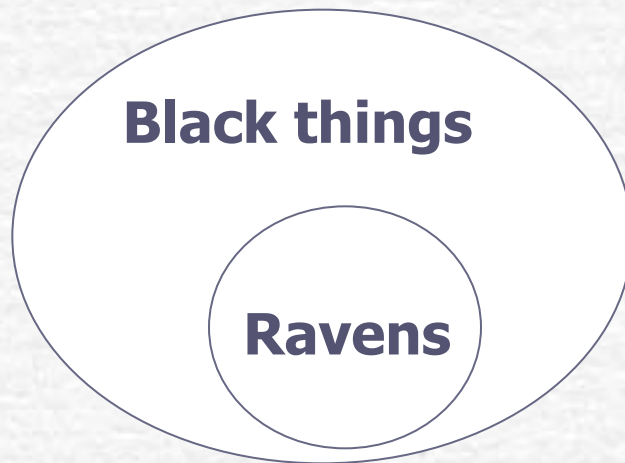
Denying The Antecedent

If it is a raven then it is black

It is not a raven

Therefore it is not black

Again check out the Venn diagrams :



The Masked Man Fallacy

The masked man is John's father.

John believes that the masked man committed the crime.

Therefore, John believes that his father committed the crime.

The premises can be true and the conclusion false because if John doesn't know that the masked man is his father then he may believe, *of* his father, that he committed the crime, but not necessarily *that* his father committed the crime

The Gamblers' Fallacy

The penny has come up heads 20 times in a row

Therefore the penny will come up tails next time

The penny's coming up heads or tails on any one toss is quite independent of what the penny does on any other toss. The chances of its coming up heads or tails is *always* 50%.

(Note: we are assuming that the penny is fair)

The Fallacy of Undistributed Middle

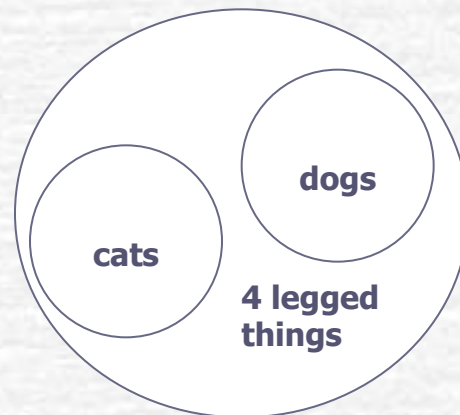
(the 'middle' is the term that appears in both premises – i.e 'four-legged')

All (normal) cats are four-legged

All (normal) dogs are four-legged

Therefore all (normal) dogs are cats

(being four-legged is 'undistributed' because it is not used in either premise to refer to all four-legged creatures, therefore it can't connect dogs and cats)



Amphiboly

**One morning I shot an elephant in my pajamas.
How he got into my pyjamas I'll never know.**

Morrie Ryskind, spoken by Groucho Marx in the movie *Animal Crackers* (via Fallacy Files)

**A fallacy of ambiguity... who exactly was
wearing the pyjamas?**

**This trades on an ambiguity of cross-
reference**

Equivocation:

All banks are beside rivers

**Therefore, the financial institution where I
deposit my money is beside a river.**

Example: The Fallacy Files

**Another fallacy of ambiguity – except that
equivocations trade on lexical ambiguities**

Straw Man Fallacy:

Jim: Sunny days are good

Sally: If it never rained we'd all starve to death

Here Sally is misrepresenting Jim's claim in such a way that it sounds as if it might be ridiculous

Always remember the Principle of Charity!

Read about The Principle of Charity here:
<http://newhumanist.org.uk/539/begging-belief>



Slippery Slope Fallacy:

If we were to legalise assisted suicide we would effectively be legalising involuntary euthanasia

This fallacy rests on the idea that if we take one step towards an accepted bad end we will inevitably find ourselves at that bad end.

This is sometimes, but not always true.

Begging the Question


It is always wrong to kill human babies

Therapeutic cloning involves killing human babies

Therefore therapeutic cloning is wrong

To beg the question is to assume the conclusion of the argument in the very phrasing of your premise

Note the similarity to a circular argument



Well, that's a *tiny* number of the fallacies we might have looked at...

... but here are some resources so you can browse at your leisure...

... and/or use to look up any other fallacies that might interest you


Resources for learning more about fallacies:

<http://www.iep.utm.edu/fallacy/>

The Internet Encyclopaedia of Philosophy (lists 208 fallacies!)

<http://www.nizkor.org/features/fallacies/> (Lists and explains 43 fallacies)

**<http://www.fallacyfiles.org/> Website devoted to fallacies
– includes a useful taxonomy of fallacies**



So now let's go to the questions you have as a result of the lectures...

...please speak as loudly as possible so others (including those listening to the podcast) can hear

To go with this lecture series, which I gave at the Department For Continuing Education, The University of Oxford (OUDCE) in Michaelmas Term 2012, there is an e-book and a short (ten week) online course run by OUDCE.

Both are entitled: *Critical Reasoning: A Romp Through the Foothills of Logic*

- The book, by Marianne Talbot will soon be available from all good e-book providers (follow me on Twitter @oxphil_marianne to find out when it will be released)
- Further details of the course can be accessed here:
http://www.conted.ox.ac.uk/courses/online/short/subject.php?course_subject=Philosophy

Marianne Talbot
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Where to go from here!

OU DCE: <http://www.conted.ox.ac.uk/>

Weekly classes (including my lectures next Michaelmas (w/b 14 October) on Philosophical Logic)

Weekend schools (including my weekend school on October 26/27 on Getting Started on Formal Logic)

Summer Schools

Online Courses (including those written by me: Mind, Ethics and Bioethics, and soon to come: Critical reasoning!)

Oxford University philosophy podcasts (including mine):
<http://www.philosophy.ox.ac.uk/podcasts>

My Website: www.mariannetalbot.co.uk

My Twitter Feed: @oxphil_marianne

My Facebook page: Marianne Talbot Philosophy