arguments

Basic stuff: sharing terminology

Genoa 2019.02.05

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plan

1sr part
– What is an argument; kinds of arguments
– Deductive arguments
– Validity, Soundness, “Goodness”
– Formal Fallacies & Exercises
– Solving Examples

2° part
– Inductive arguments
– Kant: example of an argument
– Kripke: example of an argument
An argument is not the same as contradiction.

An argument is a series of statements to establish a definite proposition.
Structure of an argument

Premise 1
Premise 2
...
Premise n

Support or Justify

Claim/Thesis/Proposition

Conclusion

On a background of (shared) presuppositions
(warrants, justifications, beliefs...)

(shared) presuppositions
Kinds of arguments

**Deductive Arguments**

The conclusion necessarily follows from the premises

**Valid argument:**
Conclusion is true if the premises are true

**Inductive Arguments**

The conclusion is supported by the premises at a certain degree (of probability)

**Strong Argument:**
Conclusion is probable
Prototypical DEDUCTIVE argument

MODUS PONENS

Antecedent
P.1 IF P THEN Q
P.2 P

Consequent
(Question)
Q

Therefore
(logical consequence)
Modus Ponens

P 1  If it rains I get wet
P 2  It rains

C.   I get wet
Modus Tollens

P1  If it rains I get wet
P2  I do not get wet

C   It does not rain
Deductive arguments

VALID  
the conclusion is *logical consequence* of the premises
it necessarily follows from the premises
not possible the premises to be true and the conclusion false

SOUND  
the argument is valid; the premises are true

GOOD  
valid, sound, but also psychologically persuasive
and pragmatically interesting
The other side

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVALID</td>
<td>The conclusion does not follow from the premises</td>
</tr>
<tr>
<td>UNSOUND</td>
<td>Invalid, or valid but with false premises</td>
</tr>
<tr>
<td>FALLACIOUS</td>
<td>Invalid or unsound, but psychologically plausible</td>
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</table>
Formal fallacies
Prototypical Fallacies: 1

**AFFIRMING THE CONSEQUENT**

P1 If it rains I get wet
P2 I get wet

---------------------------

C It rains

It does not follow:
Maybe I get wet because somebody threw water on me or there is a splinker nearby …
Prototypical Fallacy: 2

NEGATING THE ANTECEDENT

P1    If it rains I get wet
P2    It does not rain

-------------------------------------------------------
C     I do not get wet

It does not follow:
I might get wet because there is a splinker nearby
Or somebody threw water over me ...
exercises
Which is the right one?

A)
If Sunday shops are closed
Shops are closed
-----------------------
It is Sunday!

B)
If Sunday shops are closed
It is Sunday
-----------------------
Shops are closed
Which is the right one?

(A) If Sunday shops are closed
    Shops are not closed
    --------------------------
    It is not Sunday

(B) If Sunday shops are closed
    It is not Sunday
    --------------------------
    Shops are not closed
Which is the right one? (easy)

A)
If Malvina is Genovese then she is Italian
Malvina is Italian
---------------------------
Then she is genovese

B)
If Malvina is Genovese
Then she is Italian
Malvina is not Genovese
---------------------------
Then she is not Italian
Solving Examples
If there will be Brexit Europe will be taugh with UK;
Europe will be taugh with UK
------------------------------------
There will be Brexit

Good argument?

Fallacy of affirming the consequent
If there will be Brexit, Europe will be taught with UK;
But there will be no Brexit;
Therefore Europe will not be taught with UK.

Good argument?

Fallacy of negating the antecedent.
Why 4 cards is not so easy?

**If** there is a vowel on one side

**then** there is an even number on the other

| A | C | 4 | 7 |

**P1)** **If** there is a vowel on one side

**then** there is an even number on the other

**P2)** There is **not** an even number

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**CONCL:** There is not a vowel

(there should not be!)

**MODUS TOLLENS IS DIFFICULT**

\[ P \rightarrow Q, \text{ not } Q \vdash \text{ not } P \]
Why some checked the third card?

If there is a vowel on one side then there is an even number on the other

P1) If there is a vowel on one side then there is an even number on the other

P2) There is an even number

------------

CONCL: There is a vowel

FALLACY OF AFIRMING THE CONSEQUENT

P → Q, Q ⊢ ¬ P
Why 4 cards is not so easy?

Abstraction is difficult; get the culprit is easy!
You are a police* who has to check whether yougsters < 18 drink
You find

A  
15 years

B  
drinks Coke

C  
22 years

D  
drinks wine
break
2° part

Examples of philosophical arguments

Kant

Kripke

But, first, just a hint to inductive reasoning
Inductive arguments

Deductive fallacy

P1) If it rains I get wet
P2) I get wet
------------------
C) It rains

Inductive argument

P1) If it rains I get wet
P2) I get wet
------------------
C) It rains

Affirming the consequent
Inductive arguments

Deductive fallacy

Affirming the consequent

P1) it is true that:
   If it rains I get wet

P2) It is true that I get wet

-------------

C) It is true that It rains

Inductive argument

P1) Normally
   If it rains I get wet

P2) I get wet

--------

c) Very probably it rains
DEDUCTION

Working on Logical consequence
Cheking the consistency of data bases
Philosophical arguments

INDUCTION

Commonsense Reasoning
Probabilistic Reasoning
Decision Theory
Immanuel Kant, *Kritik der Urteilskraft*
Claim: music is inferior to visual arts

I. Kant *Kritik der Urteilskraft*

There attaches to Music a certain want of urbanity from the fact that, chiefly from the character of its instruments, it extends its influence further than is desired (in the neighbourhood), and so as it were obtrudes itself, and does violence to the freedom of others who are not of the musical company. The Arts which appeal to the eyes do not do this; for we need only turn our eyes away, if we wish to avoid being impressed.
Making the premises clear

(1) Music has a want for urbanity
(2) The cause of (1) is that music extends its influence further that people desire (further that Kant desires 😊)
(3) By (2) music does violence to freedom (of not being disturbed)
(4) Visual arts do not do violence to freedom
(5) (4) is justified by the possibility to turn our eyes away, not our ears
(6) We cannot avoid music

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Music is inferior to Visual Arts
Reconstruction with missing premises

Music has a want for urbanity

(0) Freedom is the most relevant social value

(1) If Art gives us freedom (in being or not its user)
    then it is superior to what gives no freedom

(2) The Art of Music gives us no freedom

(3) The visual Art gives us freedom

----------------------------------------------- (simplifying)

Using (1) and (3) by modus ponens:

Visual art is superior to Musical Art

By contraposition: **Musical Art is inferior to Visual art**
Against identity thesis of some psychological concepts:

*Pain is just a material state of the body*

(let us say stimulation of C-fibers).

How some philosophers react:

“there is perhaps a correlation between pain and these states of the body; but this must just be a contingent correlation between two different things because it was an empirical discovery that this correlation ever held. Therefore by ‘pain’ we must mean something different from this state of the body.”

(p. 98 ff)
Counter argument:

“Everyone knows that there can be contingent identities. (...) [e.g.] theoretical identifications such as light and the stream of photons, or water and a certain compound of hydrogen and oxygen. These are all contingent identities and they must be false (...) 

Psychological identifications can be contingent facts just as the other identities are contingent facts”
Kripke’s argument:

Theoretical identifications like ‘heat is the motion of molecules are not contingent truths but necessary truths (…)

The way in which these have turned true does not seem to me a way in which the mind-brain identities could be either necessary or contingently true. So this analogy has to go. (…)

It is hard to see therefore how to avoid concluding that the two are actually different”

p. 99-100
Simplifying the argument?

If something if a Theoretical identity
Then it is necessary
Mind-brain identity is not Theoretical Identity

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Mind-brain identity is not necessary

Fallacy of the negation of the antecedent?
Or inductive reasoning?
Assuming Pain= Cfibers is theoretical identity

Pain = C fibers [assumption]
Not necessary Pain = C fibers [assumption]
For all x, If x = y then necessarily x = y
[valid for proper names* and theoretical identities]

-----------------------------------------------

Not A=B

Modus Tollens

* See the two slides at the end of ppt

P1) theoretical identities, if true, are necessarily true

P2) presumed identity between phenomenal states and physical states are contingent

C there can be no identity between phenomenal states and physical states
Kripke’s argument for necessary a posteriori identities (1)

We discovered the Morning star is identical to the Evening star. We discovered that the names «Hesperus» and «Phosphorus» refer to the same entity; therefore Hesperus = Phosphorus.

While definite descriptions («the star that we see as first in the morning») may change referent depending on place and time (we might see another star as first in the morning: who cares?),

proper names are rigid designators: they refer to the same entity in all possible worlds. Now the argument is as follows:
Kripke’s argument for necessary a posteriori identities (2)

Hesperus = Phosphorus is an empirical discovery
Therefore it is a posteriori: is it necessary?
Let us assume (1) the indiscernibility of identity and (2) the necessity of the principle of identity:

(1) $Vx (x=y) \rightarrow Px \iff Py$
Now let us take as the predicate «P» the predicate of being identical with x
(1*) $Vx (x=y) \rightarrow (x=x) \iff (x=y)$
But we know that
(2) NEC (x=x)
Therefore:
(3) $Vx (x=y) \rightarrow NEC (x=x) \iff NEC (x=y)$
And then:

NEC (Hesperus = Phosphorus)  
\[\text{CvD}\]
The end
References


– Immanuel Kant *Kritik der Urteilskraft*

– *Stanford Encyclopedia of Philosophy (Positive and Negative Liberty)*
  https://plato.stanford.edu/entries/liberty-positive-negative/#TwoConLib

– Short presentation of Toulmin model of argument and suggestions about *evaluating arguments*:
  (don’t buy all of it; however in the first slide you may find an example of the three major component of an argument given in Toulmin’s framework )