



# Philosophy 220

Enthymemes, English

# Enthymemes



- An Enthymeme is an argument that leaves at least one of its premises unstated (usually because the premise goes without saying)
- Consider the argument:
  - Al is taller than Bob
  - Bob is taller than Clare
  - Therefore, Al is taller than Clare
- In PL:
  - Tab
  - Tbc
  - Tac

## The tree:

1. Tab                    SM
2. Tbc                    SM
3. ~Tac                   SM
- o



Done, the tree is open and so the set is consistent, meaning that the premises can both be true while the conclusion is false which means the argument is invalid.

Now wait just a darn minute...

## It's an Enthymeme!



- There's nothing in the formalism of PL that specifies what kind of relation a multi-adic predicate symbolizes, so we have to add a premise:
- “x is taller than y’ is a transitive relation”
- In PL:
  - $(\forall x)(\forall y)(\forall z)[(Txy \ \& \ Tyz) \supset Txz]$

# Let's try this again:



- |              |   |                |      |   |   |                |
|--------------|---|----------------|------|---|---|----------------|
| 1.           | Tab   | SM             |      |   |   |                |
| 2.           | Tbc   | SM             |      |   |   |                |
| 3.           | ~Tac  | SM             |      |   |   |                |
| 4.           | $(\forall x)(\forall y)(\forall z)[(Txy \ \& \ Tyz) \supset Txz]$   | SM             |      |   |   |                |
| 5.           | $(\forall y)(\forall z)[(Tay \ \& \ Tyz) \supset Taz]$  | 4, $\forall D$ |      |   |   |                |
| 6.           | $(\forall z)[(Tab \ \& \ Tbz) \supset Taz]$   | 5, $\forall D$ |      |   |   |                |
| 7.           | $(Tab \ \& \ Tbc) \supset Tac$  | 6, $\forall D$ |      |   |   |                |
| 8.           | <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">~(Tab &amp; Tbc)</td> <td style="text-align: center;">Tac</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table> | ~(Tab & Tbc)   | Tac  | X | X | 7, $\supset D$ |
| ~(Tab & Tbc) | Tac   |                |      |   |   |                |
| X            | X   |                |      |   |   |                |
| 9.           | <table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">~Tab</td> <td style="text-align: center;">~Tbc</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>            | ~Tab           | ~Tbc | X | X | 8, $\sim \& D$ |
| ~Tab         | ~Tbc  |                |      |   |   |                |
| X            | X   |                |      |   |   |                |

# An ordinary language argument:

- Wood floats in water
- Witches float in water
- Therefore, witches are wood.
- In PL:
  - $(\forall x)(Wx \supset Fx)$
  - $(\forall x)(Tx \supset Fx)$
  - $(\forall x)(Tx \supset Wx)$



# It's Tree (which is made of wood as well)



1.	$(\forall x)(Wx \supset Fx)$	SM
2.	$(\forall x)(Tx \supset Fx)$	SM
3.	$\sim(\forall x)(Tx \supset Wx) \checkmark$	SM
4.	$(\exists x)\sim(Tx \supset Wx) \checkmark$	3, $\sim\forall D$
5.	$\sim(Ta \supset Wa) \checkmark$	4, $\exists D$
6.	$Wa \supset Fa \checkmark$	1, $\forall D$
7.	$Ta \supset Fa \checkmark$	2, $\forall D$
8.	$Ta$	5, $\sim\supset D$
9.	$\sim Wa$	5, $\sim\supset D$
10.	$\sim Ta$	7, $\supset D$
11.	$\sim Wa$	6, $\supset D$