Logic Tutorial 3

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Overview

- 11:00 Criticisms of logic
- 11:05 Recap
- 11:10 **Q&A**
- 11:50 Quiz
- 12:00 **Q&A**
- 13:00 Nap time

Reminder

- Practice old exams!

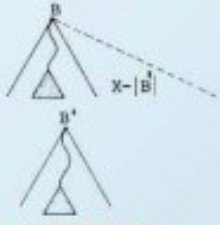
Criticisms of logic

STOP DOING LOGIC

- ARGUMENTS WERE NOT SUPPOSED TO BE FORMALIZED
- SO MANY RULES yet NO REAL-WORLD USE FOUND for going beyond MODUS PONENS
- Wanted to prove things anyway for a laugh? We had a tool for that: It was called "INDUCTION"
- "Hello, how are $\Diamond a_{n+1}/\neg(a_{n+1} \rhd \neg c_{n+1})$ doing? Isn't the weather $\forall\phi\,(\Box_V\varphi \to \Box_{U\cup\{\mathrm{Con}^r(V)\}}\varphi^j)$ today?" - Statements dreamed up by the utterly Deranged

LOOK at what Logicians have been demanding your Respect for all this time, with all the arguments and languages we built for them
(This is REAL Logic, done by REAL Logicians):

?????



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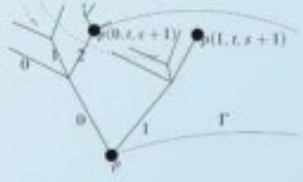

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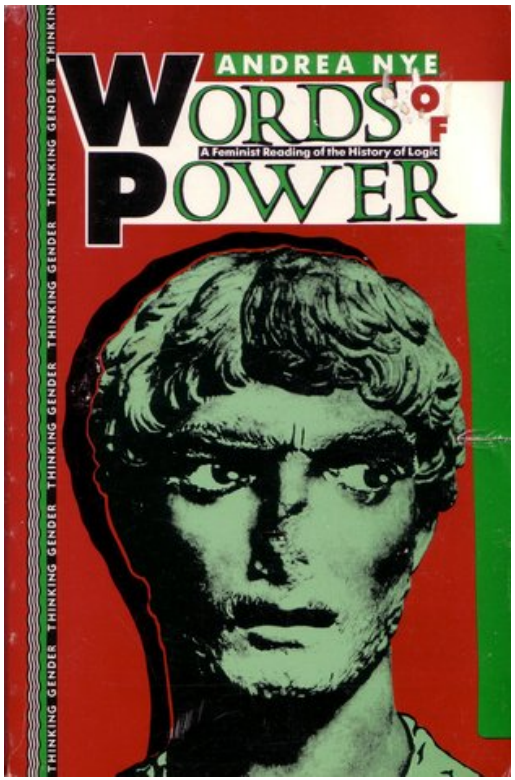
"""""You h∀v∃ to b∃ logic∀l"""""

They have played us for absolute fools

Criticisms of logic

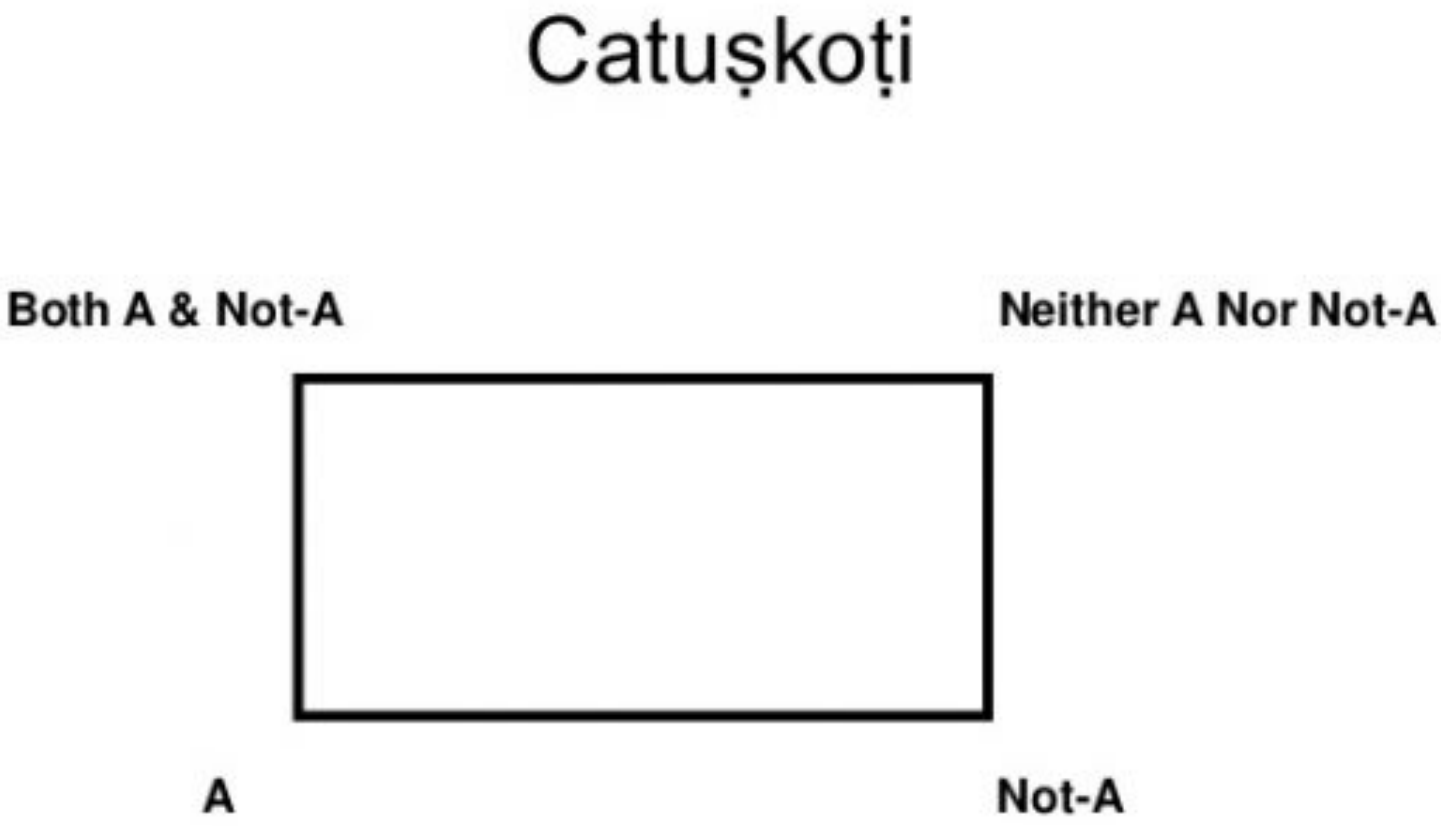
- The logic research community is not inclusive.
- Logic is “a thought like a hammer” (authoritarian, patriarchal).



Criticisms of logic - Reactions

- The logic research community is not inclusive.
  - Women in Logic
  - Summer school in mathematical philosophy for female students
- Logic is “a thought like a hammer” (authoritarian, patriarchal).
  - Taking into account uncertainty
    - Probability theory
    - Ranking theory
  - Taking into account exceptions and counterarguments
    - Formal argumentation, defeasible logic
  - Taking into account inconsistencies
    - Catuskoti

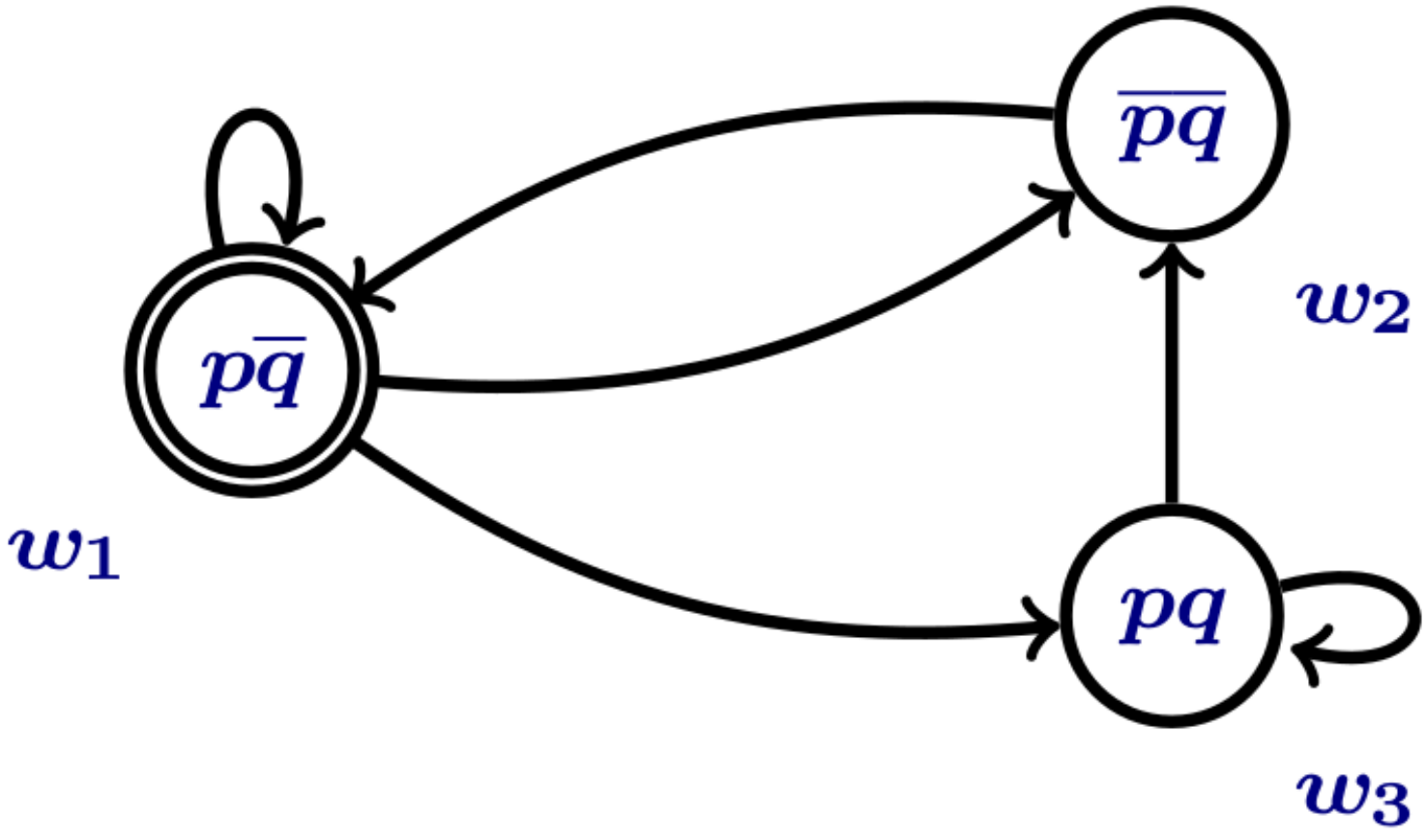
Catuskoti / Paraconsistent logic



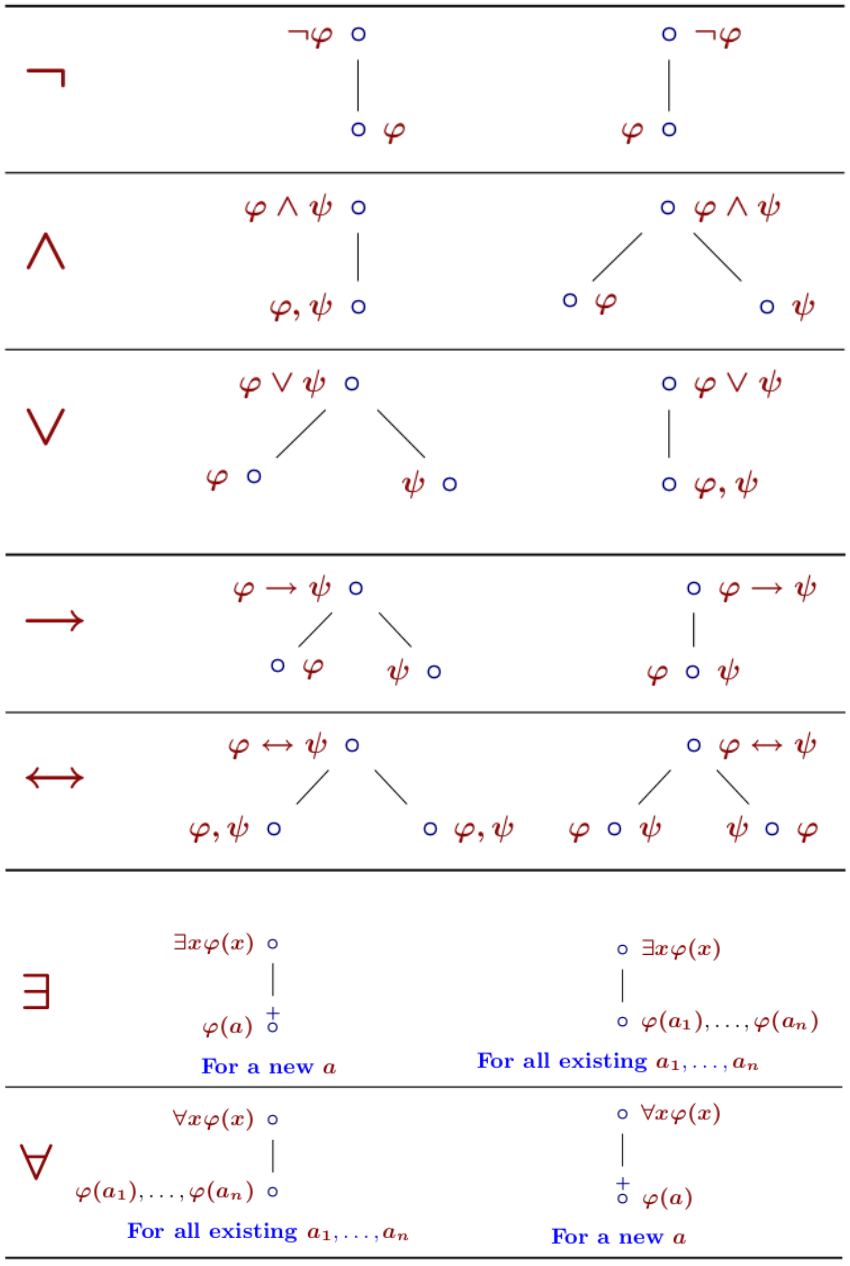
Recap

- Epistemic logic
- Dynamic logic

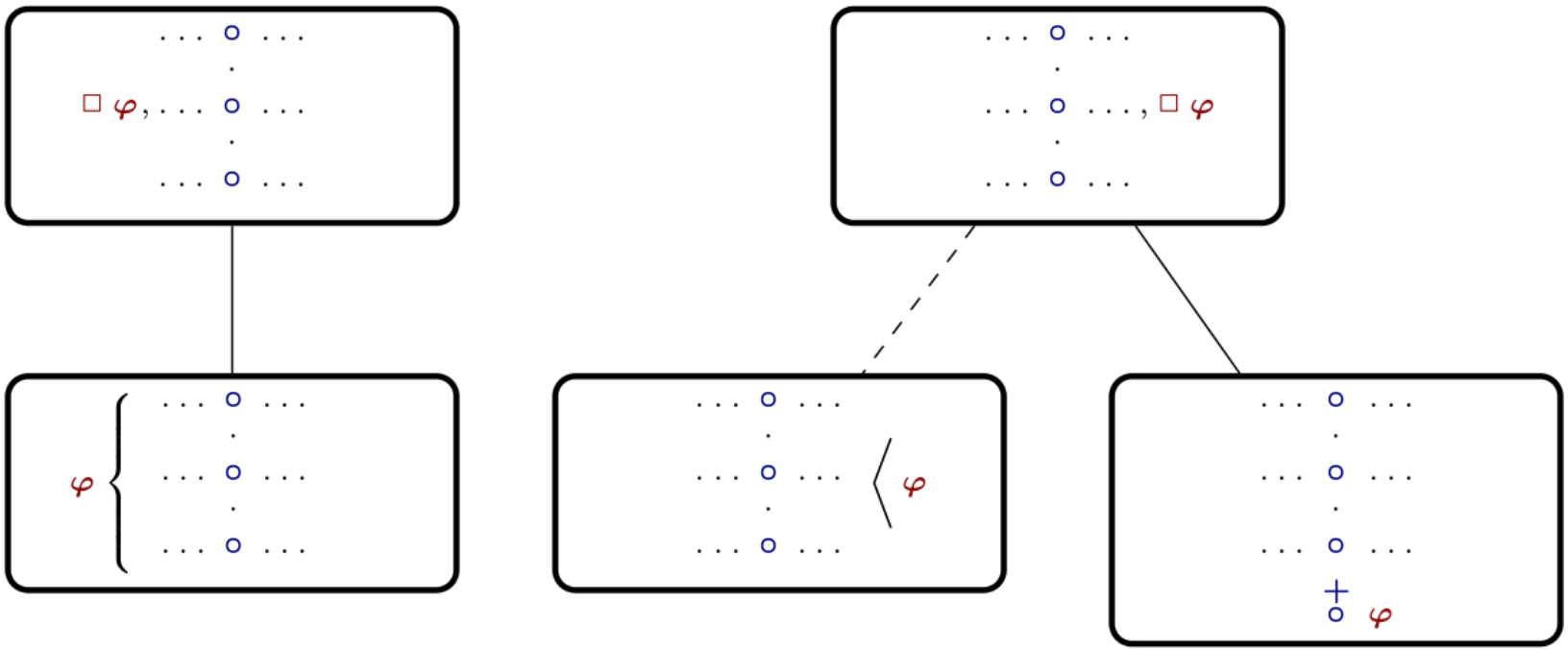
Accessibility relations



Semantic Tableau



Semantic Tableau - Modality



Q&A - Flipping operators

$\Diamond p \leftrightarrow \neg \Box \neg p$

$\Box_M \neg \Box_R p$	$[a] \neg [b] p$
$\Box_M \quad \Diamond_R \neg p$	$[a] \quad \langle b \rangle \neg p$

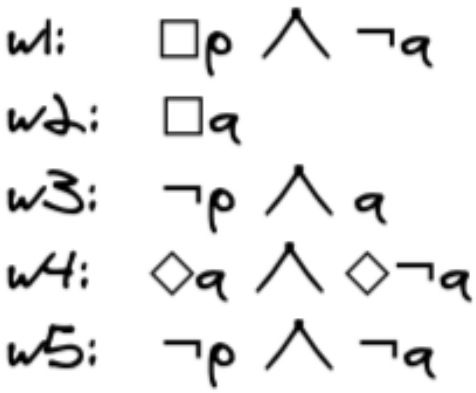
- - -

$\Box_M \Box_R \neg p$

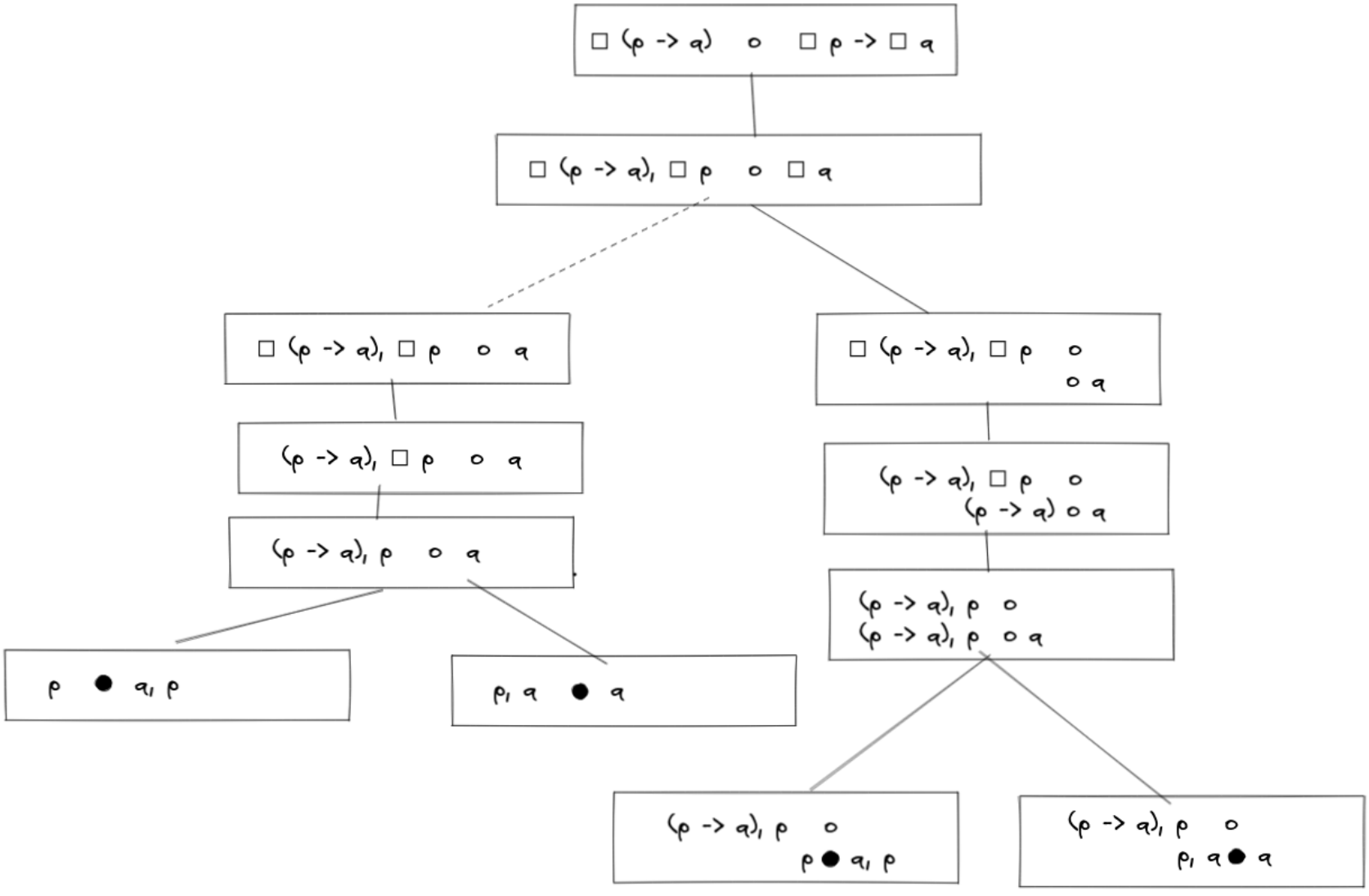
Q&A - Mock exam 2016 (Incognito Wiki) - 8 c)

$$\Box_N (bird(Daffy) \rightarrow flies(Daffy))$$
$$\wedge \Box_N bird(Daffy)$$
$$\wedge \neg \Box_N flies(Daffy)$$

Q&A - Mock exam 2016 (Incognito Wiki) - 9 a)



Q&A - Mock exam 2016 (Incognito Wiki) - 10



Quiz

- Tahook

Feedback

Anonymous feedback form:

- linktr.ee/davidpomerenke