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**
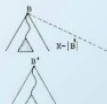- ▶ 13:00 Nap time

Reminder

► Practice old exams!

Criticisms of logic

Criticisms of logic

- ▶ The logic research community is not inclusive.

- ▶ Logic itself is "a thought like a hammer" (authoritarian, patriarchal).
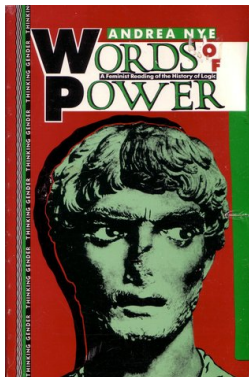
Criticisms of logic - Reactions

- ▶ 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
        - ▶ Ranking theory
    - ▶ Taking into account exceptions and counterarguments
        - ▶ Formal argumentation, defeasible logic
    - ▶ Taking into account inconsistencies
        - ▶ Catuskoti

Catuskoti / Paraconsistent logic!

Catușkoți

Both A & Not-A   **Neither A Nor Not-A**
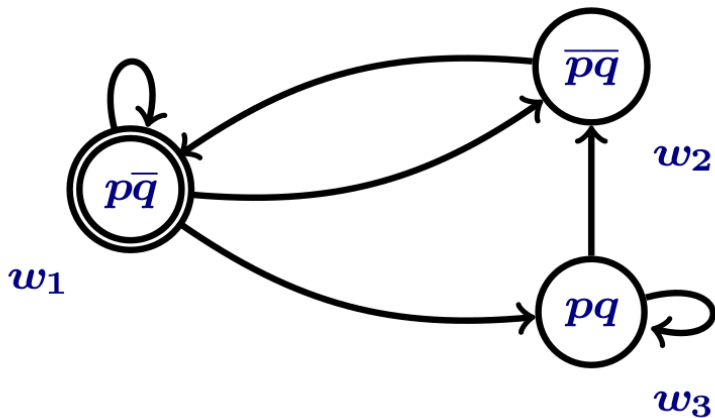
A   **Not-A**
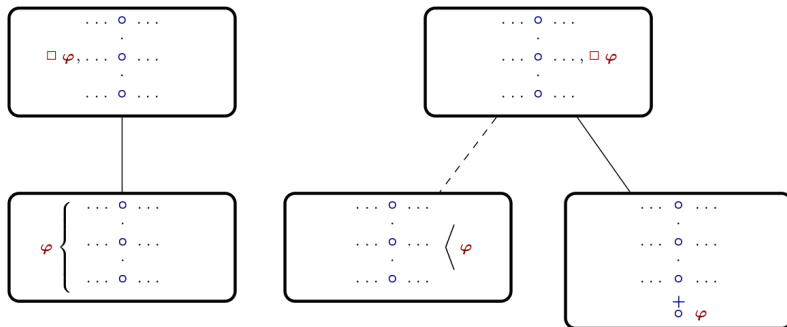
Recap

- Epistemic logic
- Dynamic logic

Accessibility relations

Semantic Tableau

¬

¬φ ∘
|
∘ φ

∘ ¬φ
|
φ ∘

∧

φ ∧ ψ ∘
|
φ, ψ ∘

∘ φ ∧ ψ
╱   ╲
∘ φ   ∘ ψ

∨

φ ∨ ψ ∘
╱   ╲
φ ∘   ψ ∘

∘ φ ∨ ψ
|
∘ φ, ψ

⟶

φ ⟶ ψ ∘
╱   ╲
∘ φ   ψ ∘

∘ φ ⟶ ψ
|
φ ∘ ψ

⟷

φ ⟷ ψ ∘
╱   ╲
φ, ψ ∘   ∘ φ, ψ

∘ φ ⟷ ψ
╱   ╲
φ ∘ ψ   ψ ∘ φ

∃

∃xφ(x) ∘
|
φ(a) ∘⁺
For a new a

∘ ∃xφ(x)
|
∘ φ(a_1), …, φ(a_n)
For all existing $a_1, …, a_n$

∀

∀xφ(x) ∘
|
φ(a_1), …, φ(a_n) ∘
For all existing $a_1, …, a_n$

∘ ∀xφ(x)
|
∘⁺ φ(a)
For a new a

Semantic Tableau - Modality

Quiz

- Tahook

Feedback

Anonymous feedback form:

- linktr.ee/davidpomerenke