

# Philosophy of Logic

Theories, translations, combinations

**João Marcos**

UFSC

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## Spaces of theories

Theories are all one needs to know about a certain consequence operator:

- in the framework Set-Fmla [Wójcicki 1988]
- in the framework Set-Set [Blasio-Caleiro-Marcos 2021]  
Note: Set-Set consequence usually has many Set-Fmla companions!
- consequence is finitary iff  
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## Additional advantage of working with gcrs

Theories that are not finitely axiomatizable using consequence relations may still be finitely axiomatized using generalized consequence relations.

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## Preserving consequence

[Epstein 1990, Carnielli & D'Ottaviano 1997]

In case

$$\Pi \triangleright_1 \Sigma \implies \Pi^\star \triangleright_1 \Sigma^\star$$

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## Some applications

- definitional equivalence
- homophonous translations
- recovering (or not!) a logic inside another
- providing semantics to a given logic characterized by other means

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## Fibring logics

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## Some special cases, some difficult problems

- fusions and products of modal logics
- avoiding unwanted interactions
- the semantics of fibring  
(particularly simple if one uses the Set-Set framework!)

[Caleiro-Marcelino 2023]