



Attività del prof. **Marko Malink** (New York University) durante il soggiorno presso il
DILEF come *visiting professor*
(19 aprile – 20 maggio 2022)

Nel corso del suo soggiorno il prof. Malink ha tenuto presso il DILEF una lezione e due seminari di ricerca.

Venerdì 22 aprile ore 11

- Lezione al Percorso di Eccellenza del Dipartimento di Firenze
- Dipartimento di Lettere e Filosofia, via della Pergola 60, Sala del Consiglio (II piano), ore 11
- Titolo e *abstract*:

Aristotle on Induction and Deduction

Aristotle distinguishes two main kinds of argument in dialectic and science: induction (*epagôgê*) and deduction (*sylogismos*). Induction is a mode of argument in which a universal claim is established on the basis of particular ones, whereas deduction is a mode of argument in which a conclusion follows necessarily from given premises. In Aristotle's theory of science, induction is used to grasp the universal principles of a science, whereas deduction is used to demonstrate theorems from these principles. This lecture examines Aristotle's account of induction and deduction, and the way they interact in his theory of science. Special attention will be given to Aristotle's syllogistic treatment of induction in *Prior Analytics* 2.23, and the question to what extent induction enables us to cognize scientific principles as such.

Giovedì 12 maggio, ore 16

- Seminario nel contesto del “Seminario di Logica e Filosofia della Scienza”
- Plesso di via G. Capponi 9, aula 6, ore 16
- Titolo e *abstract*:

The Origins of Conditional Logic: Theophrastus on Hypothetical Syllogisms

Ancient Peripatetic logicians such as Theophrastus sought to establish the priority of categorical over propositional logic by reducing various modes of propositional reasoning to categorical form. To this end, Theophrastus proposed that the conditional "If φ then ψ " should be interpreted as a categorical proposition "A holds of all B", in which B corresponds to the antecedent φ , and A to the consequent ψ . Under this interpretation, Aristotle's law of subalternation (A holds of all B, therefore A holds of some B) corresponds to a version of Boethius' Thesis (If φ then ψ , therefore not: If φ then not- ψ). Jonathan Barnes has argued that this consequence renders Theophrastus' program of reducing propositional to categorical logic inconsistent. In this paper, we will challenge Barnes's verdict. We will argue that the system of conditional logic developed by Theophrastus is both non-trivial and consistent. Theophrastus achieves such consistency by limiting the system to first-degree conditionals, in which both the antecedent and the consequent are simple categorical propositions.

Martedì, 17 maggio, ore 15:30

- Seminario nel contesto del “Seminario di Logica e Filosofia della Scienza”.
- Plesso di via G. Capponi 9, aula 7, ore 15:30.
- Titolo e *abstract*:

Boole, Peirce, and Schröder on Expressing Particular Propositions

In his *Laws of Thought*, George Boole set out to represent Aristotle's syllogistic theory in a purely equational system of algebraic logic lacking propositional negation. In doing so, he faced the problem of how to express particular propositions of the form "Some A is B". Boole attempted to solve this problem by introducing what he called "indefinite symbols". Peirce and Schröder criticized this attempt and provided different solutions to the problem based on the theory of relations (Peirce) or propositional logic (Schröder). I will examine each of these approaches, and discuss how the debate about the representation of Aristotelian particular propositions shaped the development of algebraic logic in the second half of the 19th century. I will conclude by considering how the problem of expressing particular propositions is addressed in Alfred Tarski's calculus of relations.