



A Dual Ontology of Nature, Life, and Person

Unit 13: A taxonomy of the different formal ontologies, and the categorical naturalism in cosmology and metaphysics

Course WI-FI-BASTIONTO-ER

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By

GIANFRANCO BASTI

Full Professor of Philosophy of Nature and of Sciences
At the Faculty of Philosophy of the Pontifical Lateran University

E-mail: basti@pul.it

Address: Pontifical Lateran University – Piazza S. Giovanni Laterano, 4 – 00184 Rome

Phone: +39 06 69895656

Cell.: +39 339 5760314

Web: www.irafs.org

IRAFS website: www.irafs.org



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IRAFS

c/o Prof. Gianfranco Basti
Pontifical Lateran University
Piazza S. Giovanni in Laterano, 4
00120 Vatican City

Ph.: [+39 06 69895671](tel:+390669895671)

Fax: [+39 06 45420209](tel:+390645420209)

emails: basti@pul.it

info@irafs.org

<http://www.irafs.org>



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workshop on "Ontos & Logos"

**PUL, Room "Pope Francis"
February 9th, 2016 - h. 15-17**

Presentation of the new book:
Ontologia Formale, G. Basti, S. Mobeen, APES Ed., Rome, 2015, with contributions of Habermas, Searle, Ales Bello, Basti, Kanakappally, Poli, Mobeen, Giovagnoli.

Presenters: A. Iodice, G. Traversa, D. Santoro.

Chair: Ph. Larrey

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Bibliography

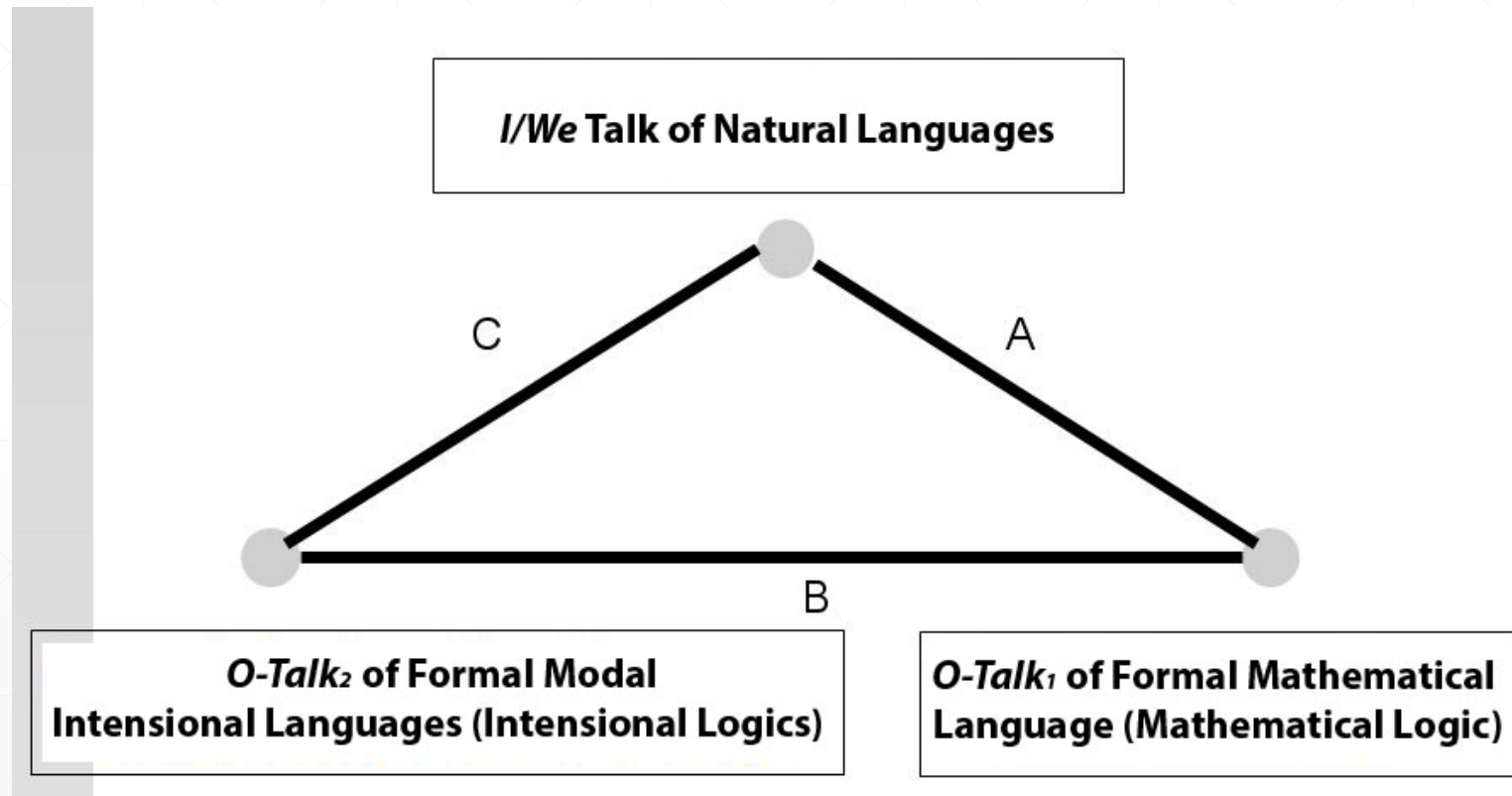
Reference

- The contents of this unit and the essential bibliography can be found in the Lecture Notes for this unit:
 - Basti G., *Lecture Notes on: “From formal logic to formal ontology”* [[attached](#)]

A Paradigm shift in philosophy

From the modern transcendental of knowledge to the post-modern transcendental of language

The necessity of formalizing ontologies in a global intercultural environment



Ordinary languages as implicit ontologies

- As we know from the First Part of our book, from the pragmatic standpoint of semiotics, any ordinary language can be considered as an *implicit ontology* of the human community using it. Any ordinary language, indeed, makes able its users to communicate efficiently - and hence to interact effectively - among them, and with the particular sector of the natural, cultural and social reality, all of them share. This is the core of the *pragmatic stance* underlying semiotics.
- The philosophical ontologies of the different peoples and cultures expressed in the natural languages of ordinary, non-formalized philosophies are then only a *manifestation of the implicit ontologies hidden in their own ordinary languages*. This is also the *pragmatic core* of any formalized ontology in formal philosophy, as far as based on the *philosophical (modal and intensional) logic*, as distinguished from the *mathematical (extensional) logic*.

Ontology as theory of the ante-predicative foundation of the predicate logic

- When we consider the issue of the foundations of the *ontological notion of local truths*, as far as distinguished from the *logical notion of absolute truth*, we are effectively dealing with the *ante-predicative* background of any *language* and of any logic, given that in logic any relation is a *predicate*, that is a relation with a *definite domain-codomain (support)*.
- As we know, in first order logic, the predicates are defined on a definite domain of (names of) individuals (e.g., when we say “the blood is red”). In second order logic, the predicates are defined on a definite domain of first order predicates, i.e., we are speaking about “predicates of predicates” (e.g, when we say “the red is a color”), evidently supposing, in the ordinary language usage, some form of “nominalization” of first order predicates (in our example, the predicate “being red”).

Formal ontology and formal logic

- In this framework, when we deal with *the ante-predicative foundations of logic*, we are in the proper context of *formal ontology*, either in its phenomenological interpretation, i.e., as far as considering logic and language as to a *knower*, or in its semiotic interpretation, i.e., as far as considering logic and language as to a *communication agent*. That is Peirce's "interpretant", either human or animal, either natural or artificial.
- In this way, the main ontologies of whichever philosophy and culture can be formalized like as many *theories of predication* — *nominalism, conceptualism, realism* —, and/or like as many *theories of universals*. By "universal" — as distinguished from "class" or "set" in logic and mathematics — we intend "what can be predicated of a name", according to Aristotle's classical definition (*De Interpretatione*, 17a39).

Nominalist ontologies and first order predicate logics

- Therefore, from the standpoint of the predicate logic, it is evident that all the *nominalist* ontologies suppose only a *first order* predicate logic, since in such ontologies it is forbidden quantifying over predicate symbols – that is, speaking about “predicates of predicates”. The predicates, indeed, in nominalism, cannot denote anything, i.e., “cannot be nominalized”: the “universals” do not exist at all in such ontologies. There exist only individuals: universals are only linguistic conventions.
- Therefore, they cannot be proper arguments of any higher order predicate symbols. If in some cases nominalism admits higher order predicate symbols, this is only in a *substitutional* sense —, i.e., in the sense of a linguistic, conventional, shortened second order formula instead of many first order true propositions —, without any proper extra-linguistic referential meaning. In this sense, nominalist ontologies are very similar to empirical sciences, because both share some form of exclusiveness to the only first order predicate calculus.

Nominalism and empiricism

- Effectively, indeed, the absolutization of the empirical sciences, i.e., the *empiricism*, is a sort of nominalism.
- On the contrary, the other types of possible ontologies admit higher order predicates, that is quantifying over predicate symbols, because they admit, even though in different senses, the existence of the *universals*, so to make possible the quantification on predicate variables.
- To sum up, following Cocchiarella (Cocchiarella, 2007), and other my papers on the same argument (Basti, *Ontologia formale: per una metafisica post-moderna*; Basti, *Ontologia formale. Tommaso d'Aquino ed Edith Stein*), we can distinguish among at least *three types of ontology*, with the last one subdivided into two others:

A taxonomy of the different ontologies

1. *Nominalism*: the predicable universals are reduced to the predicative expressions of a given language that, *by its conventional rules*, determines the truth conditions of the ontological propositions (Sophists, Quine, ...).
2. *Conceptualism*: the predicable universals are expressions of *mental concepts*, so that the laws of thought determine the truth conditions of the ontological propositions (Kant, Husserl, Stein...).
3. *Realism*: the predicable universals are expressions of *properties and relations* existing independently of the linguistic and/or mental capacities in:
 - *The logical realm*, we have then the ontologies of the so-called *logical realism*, where the *logical relations* determine the truth conditions of the ontological propositions (Plato, Frege, ...);
 - *The physical realm*, we have then the ontologies of the so-called *natural realism*, or “naturalism”. On its turn, naturalism can be of two types:
 - *Atomistic*: without natural kinds, where mechanics is the fundamental physics, and its absolute *mathematical laws* with their *empirical fulfillment* are ultimately determining the truth conditions of the ontological propositions (Democritus, Newton, Laplace Wittengstein’s *Tractatus*, Carnap, ...).
 - *Relational*: with “natural kinds” – the “generals” of Peirce’s semiotics –, because the *real relations* (causes) among things ultimately determine the *linguistic relations*, and then the truth conditions of the ontological propositions (Aristotle, Aquinas, Peirce, Kripke, ...).

A taxonomy of formal ontologies depending on the foundation of predication (*universals* issue)

