LOGIC IN LINGUISTICS SOME ISSUES IN THE PHILOSOPHY OF LANGUAGE

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CONTENTS
1) CLASSICAL PROOFS AND MODELS

- Basics on first order classical logic and its interpretation
  - Basics of philosophy of language and its relation to logic, following Recanati.
  - Basics of first order classical logic: proofs, models and completeness.
  - A word on Discourse Representation Theory and FOL

CONTENTS
2) REFINEMENTS, TOPOLOGICAL MODELS

- Refinements: possible worlds and topological models
  - Modal and intuitionnistic variations: proofs, a word on Kripke semantics.
  - A bit of topology, category theory and categorical logic.
  - Sheaf semantics for intuitionnistic logic.
  - Classical and intuitionistic higher order logic
  - Petitot on predicates applied to spatial entities.

CONTENTS
3) PROOFS, LAMBDA TERMS AND COMPOSITIONAL SEMANTICS

- Proofs, lambda terms and compositional semantics
  - Proofs, lambda-terms and the Curry-Howard isomorphism
  - Linear logic and Lambek calculus
  - Categorial grammar and Montague semantics

CONTENTS
4) CATEGORIES AND TYPE THEORY
FOR LEXICAL SEMANTICS

- Categories, types and terms for lexical semantics
  - On the semantics of proofs and lambda terms.
  - A concrete example: coherence spaces.
  - Abrusci and Fouqueré on applications of coherence spaces to ontologies.
  - Asher on types systems for lexical semantics in a compositional framework
  - Bassac, Mery and Retoré on the same issue.

SOME QUESTIONS AND DISTINCTIONS

(following remarks by Recanati)

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QUESTIONNING THE USUAL SETTING(S)

Many of these questions can be traced by to scholastics as in the debate on universals, the debate between nominalism and realism etc.

- Reference to world or to mental representations.
  One could says formal semantics is both a relation to world and mental representations.

- Do predicate and properties really exists?
  Let us says yes for proof theoretical reasons.

- Individuals (rigid interpretation)
  characteristic property.
  Constants or a Leibniz-style definition.

- Do we really use quantification?
  Less often then usually assumed.
  Let us first say yes.

- Higher order versus reification.
  « Allegedly she often drives a Fiat. » Not so easy to reify…
  First order is more standard as far as models are concerned but higher order is more expressive and as sound, with more subtle models.

- Difference between « contents » and « function » (in discourse or dialogue)
  « Ce n'est pas grave. » (Non è grava. said by a six year old girl)
  Let us first deal with contents.
  At the end we'll speak about interaction.

- How are the lexical connections reflected into the logical language?
  « Ma voiture est crevée. » « J'ai calé la table avec un magazine idiot. »
  This is to be discuted in the framework type theory and categorical logic.