Philosophy of Language: Natural Language Ontology
Friederike Moltmann
Université Côte d'Azur
Fall 2022/3
Handout 1

Introduction: Ontology, Semantics, and Syntax

1. Semantics and ontology: preliminaries

1.1. The branches (subdisciplines) of linguistics and philosophy

Linguistics
Syntax: the study of the structure of sentences
Semantics: the study of the meaning of sentences
Lexical semantics: the study of the meaning of words

Philosophy
Metaphysics
Philosophy of language, epistemology, ethics, philosophical logic, philosophy of science, …

Natural language ontology
Part of semantics and part of metaphysics, a subdiscipline of both linguistics and philosophy

1.2. What are meanings?

Lexical semantics
Meanings as concepts (in the mind) or properties (properties objects actually have)
Words that *act as* predicates:
one-place predicates: *house, man, tree, walk*
two-place predicate: *brother, friend,*
three-place predicates: *give* (*John gave Mary a book*)

More recent view about the meaning of verbs

Verbs as predicates of events

Davidsonian view:

Walk expresses a relation between events and agents: walk(e, John) 'e is a walking by John'

Neo-Davidsonian view:

Walk expresses a property of events, syntax connects the event to the agent (thematic relations): walk(e) & agent(e, John)

Meanings and *extensions*

Extension of predicates: made up from the things the predicates are true of.

Extension of one-place predicates: sets of entities

Extension of two place predicates: two-place relations between entities

Extension of three-place predicates: three-place relations between entities

Extension of names: individuals bearing the name

Extension of sentences: truth values (Frege)

The standard view: meanings determines extensions

Standard formal semantics

Identification of meanings with a mapping (function) from *circumstances* (worlds, perhaps times) to extensions → *possible-world semantics*

Sentences are true or false relative to circumstances (possible worlds, perhaps times)

Identification of *the meaning of a sentence* with the set of circumstances in which the sentence is true.

Proper names

Do they have conceptual meanings?

Older view: property, cluster of properties identifying the bearer if the name

Current view (due to Kripke):

Proper names just stand for individuals (direct reference)

---

2. Ontology and Metaphysics

2.1. Ontology: some terminology

1. Ontology as a discipline
2. Ontology as the subject matter of a discipline: 'An ontology consists of entities of various sorts'

Entities: anything there is

Kinds of entities

Objects: material objects, artifacts, abstract objects,

contrast with events, modes, situations, and times

Events and *states*

Modes (or *tropes*): e.g. Mary's happiness, Socrates' wisdom

Times

(Possible) situations and *worlds*

Individual: often used as synonymous with 'entity', with 'object', or in contrast with 'stuff'

Stuff, matter, substance, quantity: denotation of typical mass nouns (*water, clay, wood*)

2.2. Characterizations of metaphysics

Aristotle

Metaphysics as the study of 'being qua being':

deals with the most general nature of things

deals with the most general categories of entities

Another type of characterization

Plato: 'Carves nature at its joints'

Deals with the most general, fundamental nature of reality

An important issue:

It is not obvious how *reality* itself should be conceived:

Fundamental reality

- Collection of physical objects that are independent of our mind
- Amorphous mass, which has yet to be carved out by mental or linguistic activities

More plenitudinous views of reality:

- Reality includes derivative entities like smiles, shadows, modes
- Reality includes mind-dependent objects, objects individuated in terms of their function, e.g. artifacts of various sorts

Important:
The way reality is understood bears on the way semantics is conceived.
E.g. Chomsky's position:
Given a particular traditional view of reality, semantics does not involve reference to objects.
But perhaps not so given a more plenitudinous view…

2.3. Ontology vs metaphysics

Distinguishing metaphysics and ontology
Metaphysics deals with *the nature of things*
e.g. metaphysics of time and space, of causation, of modality,
Ontology deals with *what there is*:
e.g. the question of what categories of entities there are

More recent use of ontology
Use of the term 'ontology' in the sense of 'metaphysics'
Often when applied to a particular domain:
Applied ontology, social ontology, ontology of art, ontology of biology, ontology of ordinary objects

Ontology / metaphysics focused on what is reflected in natural language
The study of the categories of entities and their nature as reflected in natural language.
Two terms for that branch of metaphysics
'Natural language metaphysics': Emmon Bach and others
'Natural language ontology': my own choice (and that of others)
Reasons for that choice:
1. 'Ontology' can be used for the subject matter of natural language ontology.
The subject matter of natural language ontology:
The ontology of natural language or the ontology implicit in natural language:

2. ‘Ontology’ as a count noun permits the plural.

This is needed when talking about:

- ‘different ontologies for different languages’
- ‘different ontologies for different parts of language’
- ‘different ontologies for language and cognition’, etc

1.3. The apparent involvement of ontology in natural language

Reference with referential NPs

Simple case:

(1) Mary is happy:

Standard view:

Speaker refers to an individual with the utterance of *Mary* and predicates the property of happiness of her.

Simple subject-predicate sentences:

Truth conditions obtained by referring to things and predicating properties of them.

Quantification

(2) There are things John said.

Anaphora

Anaphoric reference to worlds / situations

(3) a. John might come. *Then / In that case*, I would come too.

Anaphoric reference to times:

(3) b. John opened the door. *Then* Mary entered.

Implicit arguments

Arguments of predication that are not also objects of reference (of referential NPs):

Best known case: *Davidsonian events*, i.e. implicit event arguments of verbs

Needed for the semantics of adverbials:

(4) a. John walked slowly.

b. There is a walking event which has John as agent and which is slow.

Same motivation for modes (tropes) as implicit arguments of adjectives:

(5) a. Mary is profoundly happy.

b. There is a mode (trope) of happiness of Mary that is profound.

Ontological categories reflected in syntactic categories

Events – verbs / nominalizations of verbs

(6) John's walk / laughter / birth

Modes – adjectives / nominalizations of adjectives

(7) Mary's wisdom / happiness / carelessness

Ontological categories reflected in syntactic constructions

That-clauses used to refer to states of affairs and facts:

(8) a. That it will rain is likely.

b. That it rained was surprising.

Two sorts of gerunds (Zeno Vendler):

Fact reference with 'imperfect nominals'

(9) a. John's singing the song was unusual.

Event reference with 'perfect nominals':

(9) b. John singing of the song was unusual.

Why is ontology needed for doing semantics?

Entities are obviously involved in various ways in the semantics of natural language.

Ontology is needed for a *compositional semantics*, given standard views: reference, quantification, predication, modification, …

Scepticism about the involvement of ontology in semantics

Semantics cannot really involve ontology, i.e. the ontology of real things.

Things like holes, mistakes, problems, nuances, groups, etc. play the very same role in the semantics of sentences, but they are not real things on many philosophers' views.

Should semanticists be making philosophical claims about what there is when doing their work? Or are semanticists perhaps entirely in error in what they are doing when positing entities for the purpose of compositional semantics?

Three types of positions

1. A common stance among semanticists: *agnosticism*

Semanticists should posit entities as semantic values for the purpose of compositional semantics without worrying about their metaphysical (or even cognitive) status (e.g. Emmon Bach)

2. Chomsky's *extreme skepticism* regarding the involvement of ontology in semantics: Semantics does not involve reference to real entities at all, i.e. entities in a mind-independent world. Therefore, semantics can concern itself with cognitive representations, and thus another level of syntax. (Chomsky's arguments and examples to be discussed in detail later in the semester!)

3. A third view (Kit Fine, myself): *two-level ontology*
For the purpose of compositional semantics, semantics should posit entities that contribute to truth conditions, but that need not be regarded as fundamental
It is another task, that of *foundationalist metaphysics*, to explain those entities in more fundamental terms.
Two levels of ontology:
- The ontology reflected in linguistic data or the 'ontology of appearances' (Kit Fine)
- The ontology of the fundamental.

A closely related distinction to that between natural language ontology and foundationalist metaphysics:
Strawson's distinction between *descriptive metaphysics* and *revisionary metaphysics*.

---

2. Connections between ontology and syntax

2.1. The notion of a referential NP and of a predicate

'Referential NP (DP)' and 'predicate' are syntactic roles.
Semantic roles need to be syntactically identified.

Referential NPs: *the man, John, that man, a certain man*
Frege:

Referential NPs (‘names’) serve to stand for *objects*.

Objects are what referential NPs stand for.

Presuppose the existence of their referent.

Contrast with quantificational, predicative, and intensional NPs:

(10) a. John did not see a unicorn.

b. Charlie is not a unicorn.

c. John is looking for a unicorn.

Semantics of predicates:

- attribute property to an entity (ontology of properties)
- apply to entities to yield truth values.

2.2. Different syntactic analyses of sentences may imply different ontological assumptions

Linguistic arguments for numbers being objects:

(11) The number of planets is eight.

Frege

Identity statement involving two number-referring terms

Alternative syntactic view (Roger Higgins 1972 MIT thesis)

Specificational sentence, not identity statement.

Semantics of specificational sentences:

convey a relation between a question (‘how many planets are there?’) and an answer ‘’(there are) eight (planets)’.

2.3. Syntactic categories and ontological categories

Verbs (and deverbal nominalizations) – events and states

Adjectives (and deadjectival nominalizations) – modes (and tropes)

Nouns ? Languages without syntactic category distinctions?

2.4. The mass-count distinction

Mass-count distinction is a syntactic distinction with semantic content

(12) a. one piece of wood, mane pieces of wood

b. a single statue, many statues

c. *one wood, * a single wood, * many wood

Semantic content of the mass-count distinction as an ontological distinction?

Being an individual, being one vs being neither one nor many (being a ‘quantity’)

2.5. Plurals

Plural as a syntactic category with apparent ontological content

(13) a. John and Mary met.

b. The students gathered.

c. The students are ten.

Dominant view in semantics

Definite plurals stand for sums of entities (Link and others)

Thus, sums of individuals are part of the ontology of natural language.

Alternative: definite plurals stand for several entities at once (‘plural reference’)

2.6. Part-whole relations

The partitive construction

(14) a. part / some of the apple

b. part / some of the students

c. part / some of the wood

Natural language appears to display an ontology of individuals, sums, and quantities, all ordered by part relations.

2.7. Tense

Tense categories and features in syntax

Metaphysics of time

2.8. Modality

Modal auxiliaries (*may, could, can, should*) display various syntactic properties.

(15) John might be at home. In that case, Mary is at home as well.

Standard semantics of modals:

Quantify over a domain of possible worlds or situations.

Anaphora: *that case* refers to another world or situation

2.8. Light verbs and light nouns

Light verbs: *have, make, give, be*

Light verbs may convey ontological relations

Ontological dependence:

(16) The sweater has a hole.

Causative structures

(17) a. John made Mary happy

b. John made a request.

---

3. What sorts of linguistic data reflect the ontology of natural language?

Why did we look at syntactic features and categories and not lexical meaning, especially not of ontological terms?

Not all linguistic 'data' reflect the ontology implicit in natural language:

<u>Ontological assertions</u>

(18) a. There are events.

b. There are numbers

c. There are abstract objects

<u>The use of sortals</u>

(19) a. the event of rain

b. the mode of Joe's happiness

<u>Philosopher's technical terms</u>

(20) a. the sum / fusion / set of John and Mary

b. possible world

c. the nothing ('das Nichts' Heidegger)

<u>Generalization</u>

The ontology implicit in natural language is reflected in

1. Syntactic categories and features, perhaps syntactic positions
2. Implicit arguments (events)
3. Syntactic constructions, e.g. nominal constructions for different types of entities.

But not in its philosophical vocabulary.

General observation about philosophers' use of examples

Philosophers often motivate ontological views by appealing to natural language, but they generally do not appeal to examples involving the use of sortals or technical philosophical terms.

Frege's arguments for numbers being objects

(21) a. The number of planets is nine.

But not:

(21) b. The number eight is a number.

c. Eight is a number.

d. There are numbers.

Link's arguments for sums being part of the ontology of natural language

(22) a. John and Mary met.

But not:

(22) b. The sum of John and Mary is a sum.

The way philosophers appeal to natural language shows a distinction between two parts of language: (ontological) core and (ontological) periphery

The (ontological) core of language

Includes syntactic categories, features, and constructions

The periphery of language:

Includes sortals, technical philosophical terms, …

(23) Preliminary characterization of the ontology of natural language

The ontology of natural language is the ontology involved in the semantics of the core of natural language, not its periphery.

Important further issues regarding the core-periphery distinction (for Dec 12 session)

1. How should the core-periphery distinction bet characterized content-wise, in terms of a difference in speakers' relation to the ontology (implicit acceptance vs. acceptance through reflection)
2. The periphery will also have an ontology. How can it be integrated within a unified compositional semantics of the language?
3. What exactly is the linguistic basis of the core-periphery distinction ?
4. What does the core-periphery distinction mean for universals in natural language ontology?

Recommended readings on natural language ontology in general

Bach, E., 1986, "Natural Language Metaphysics," in R. Barcan Marcus et al. (eds), *Logic, Methodology, and Philosophy of Science* VI , Amsterdam: North Holland, pp. 573-595.

Chao, W. and Bach, E., 2012, "The Metaphysics of Natural Language(s)," in R. Kempson et al. (eds.), *Philosophy of Linguistics, 14.* Amsterdam: North Holland, Elsevier, pp. 175-196.

Fine, K., 2017, "Naïve Metaphysics," *Philosophical Issues* 27.1., pp. 98-113.

Moltmann, F., 2017, "Natural Language Ontology'." *Oxford Research Encyclopedia of Linguistics.* Oxford UP, New York.

---------- 2019, "Natural Language and Its Ontology," in A. Goldman and B. McLaughlin (eds.), *Metaphysics and Cognitive Science*, Oxford: Oxford University Press, pp. 206-232.

----------, 2020, "Natural Language Ontology," in R. Bliss and J. Miller (eds.), *Routledge Handbook of Metametaphyics* (July 2020), New York: Routledge.

----------, 2022: "Natural Language Ontology," *Stanford Encyclopedia of Philosophy,* online.